E-THERAPIES SYSTEMATIC REVIEW FOR CHILDREN AND YOUNG PEOPLE WITH MENTAL HEALTH PROBLEMS

National Collaborating Centre for Mental Health

Commissioned by the MindEd E-portal Consortium

NATIONAL
COLLABORATING
CENTRE FOR
MENTAL HEALTH

E-therapies systematic review for children and young people with mental health problems

National Collaborating Centre for Mental Health

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1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The combination of a high prevalence of mental disorder in childhood (1 in 10 children and young people has a diagnosable disorder) and a relatively low general understanding of child mental health issues has created a strong case for using electronic media to increase mental health literacy and empower those working with children and young people, their families and young people themselves to address problems associated with common mental disorders, particularly anxiety, depression, ADHD and eating disorders. In addition to the advantage of computer-based-technologies in reaching a larger proportion of those in need than face-to-face methods, there may be considerations in relation to the cultural appropriateness of "e-therapies" – computer-assisted treatments for mental disorders – for children and young people, who are more likely to be accepting of an electronic interface and for whom the absence of stigma (which might be associated, for example, with face-to-face interventions) may be of particular value.

The MindEd portal is a Department of Health commissioned website aimed at adults with professional responsibilities for children and young people, which provides information relevant to assisting children and young people with mental health problems. In this context, e-therapies are clearly of great relevance. Fortunately, over the past two decades computer-assisted treatment protocols available via the internet or via electronic devices have been proliferating. Many of these protocols could be usefully integrated into the MindEd offering. However, the translation of evidence-based treatments into computer-assisted technologies is neither obvious nor automatic, and before these therapies could be recommended, their effectiveness in treating mental disorders in children and young people has to be demonstrated.

The e-Portal Consortium in charge of designing content for MindEd commissioned the National Collaborating Centre for Mental Health to review evidence in relation to computer-assisted therapies for consideration for inclusion within the portal and to conduct focus groups to elicit young people's views on computerised programs. The review was intending to answer two questions: the first concerned the effectiveness of e-therapies and the second the availability of computer-based applications on the internet for children and young people with mental health problems, and the focus groups aimed to determine the acceptability of programs and to investigate aspects of concern and value to young people.

1.2 METHODS

The literature review undertaken was conducted according to the NICE review protocol using standard search strategies and provided evidence profiles using the grading of recommendations, assessment, development and evaluation (GRADE) approach. Studies were selected which concerned any e-therapy that aimed to treat the mental health of a child or young person, either through remote therapist contact

(e-mediated therapy) or through computer-based applications, either where the mean age of participants was under 18 or where all were aged under 25. All mental health problems were included. The review was restricted to studies in which a comparator – either no treatment or active intervention – was part of the design and where the mental health outcomes were measured in the children/young people participating in the investigation.

Focus groups were undertaken in two groups of young people aged ≤25 years where four cCBT programs for anxiety and/or depression were tested followed by facilitated discussion. Participants were asked about their likes and dislikes, likelihood to use and opinion of therapeutic benefit for products tested in the focus groups and any previously used products. They were also asked whether they would prefer products that were used with or without a therapist being present.

1.3 RESULTS

The review included 63 studies of e-mediated or computer-based therapies. These were interventions aimed at mood disorders (anxiety and depression) (k=26), phobias (k=2), obsessive-compulsive disorder (k=2), posttraumatic stress disorder (k=1), eating disorders (k=6), attention deficit/hyperactivity disorder (k=10), conduct disorder (k=2), substance misuse (k=11), autism (k=1), Tourette syndrome (k=1) and psychosis (k=1). In terms of technologies, the interventions evaluated included computer-based technologies: computerised CBT (cCBT) (k=19), computerised problem-solving therapy (k=1), computer-based psychoeducation (k=1), computerised cognitive training (k=11), computer-based exposure (k=1), computerised information/training (k=11), computerised screening and feedback (k=2), computer-supported self-monitoring (k=1), computerised social skills training (k=1) and computerised attention or cognitive bias modification (k=9); and e-mediated therapies: video conferencing with individual CBT/other behaviour therapy (k=3), online group CBT (k=2) and online group support (k=1).

The evidence was predominantly of low quality, with limited data, inadequacies in study design and unreliable outcome measures being major contributors to quality downgrading. The strongest evidence was for cCBT programs for depression in young people, where there appeared to be promise that these types of interventions could reduce depression in depressed populations and also reduce average levels of depression in general populations. Similarly, for cCBT programs for anxiety in young people, there was promise that intervention could reduce anxiety in general populations and some evidence that anxiety could be reduced in anxious individuals. For cCBT programs for anxiety in children, there was less data and the evidence was weaker.

Other interventions with promise were cognitive training for ADHD, computerised parent training for conduct disorder and computerised interventions for substance misuse, where there was evidence of efficacy across a number of studies. For other interventions, evidence came only from single studies, but suggested potential

efficacy for e-mediated delivery of therapies: online group CBT for depression, online group CBT for eating disorders, video conference CBT for depression, video conference CBT for OCD, video conference behaviour therapy for Tourette syndrome and online support group for psychological distress, and some computer-based therapies: cCBT for social anxiety and computerised social skills training for autism.

Findings were inconclusive for the remaining interventions: computerised problem-solving therapy, mobile phone application for depression, computerised exposure for phobia, computerised psychoeducation for eating disorders, cCBT for PTSD, attention bias modification, cognitive bias modification of interpretations, cCBT for general eating disorders and cCBT for binge eating disorder. For the majority of these interventions, the evidence was of low quality and their effectiveness is still uncertain. For attention bias modification and cognitive bias modification, some evidence was of moderate quality, suggesting with slightly more confidence the lack of benefit of these interventions.

At the time of this review there were no randomised control trials for interactive applications for smart phone or tablet based applications.

The focus groups in young people of cCBT programs for anxiety and depression identified a number of important issues, such as the need for products to be engaging and up-to-date, the desire to set their own goals and be active in their therapy, the desire for continued contact with therapists and the importance of endorsement by medical professionals.

1.4 CONCLUSIONS

Computer-based applications such as cCBT and a number of other interventions show promise to provide effective independent treatments, and e-mediated strategies appear to be potentially useful for delivering therapy.

Several general principles for the provision of these interventions and the development of new products and services were identified. There are opportunities to exploit new types of internet-based and computerised media but most currently available products are not free and have been developed and evaluated by private companies. Investment is needed for the development of products, with input from specialists in software design as well as psychology. The design and presentation of programs is important, and assessment should include acceptability to the target audience as well as aspects of technological suitability and therapeutic benefit. Due to the rapid expansion in the number of related publications, continued, robust, evaluation of the evidence for e-therapies is needed and this should include evaluation of their cost effectiveness. E-therapies should be delivered in a way that encourages an individual's autonomy over their treatment but is integrated with their use of other mental health services.

2 INTRODUCTION

2.1 MENTAL HEALTH IN CHILDREN AND YOUNG PEOPLE IN THE UK

According to the Office for National Statistics (ONS), 9.6% of children and young people between the ages of 5 and 16 years in the UK have a mental health problem . This equates to at least 850,000 children and young people – around three school children in every class, which puts them at future risk of alcohol and drug misuse, self-harm, neglect and, in extreme cases, suicide.

Mental health problems can affect every aspect of a young person's life including their ability to engage properly with education, make and keep friends, have good family relationships and, ultimately, to make their own way in the world. Early detection, treatment and support for children and young people with mental health problems are vital in setting them on the best path in life.

In children and young people in the UK, 5.8% have conduct disorder (around half of those with mental health problems), 4.2% have an emotional disorder (anxiety or depression), 1.5% have severe attention deficit hyperactivity disorder (ADHD) and 0.4% have a psychotic disorder. The prevalence of self-harm in young people aged 15 to 16 years is high: 11.1% in girls and 3.2% in boys, with a life-time prevalence of 16.7% and 4.8% respectively, according to an international survey (Hawton et al, 2002). Autism, once thought to be an uncommon developmental disorder, has a prevalence rate of at least 1% of the child population; this is often accompanied by at least one other disorder that impairs psychosocial functioning, such as intellectual disability (IQ below 70), which coexists in approximately half of all children and young people with autism.

Promoting good mental health and intervening early, particularly in the crucial childhood and teenage years, can help mental health problems from developing and can help lessen their effects.

2.2 THE NEED FOR INTERVENTION

While many children and young people experience mental health problems, and some are apparently minor, if these problems are unrecognised or neglected, this may lead to a range of further problems, potentially undesirable behaviours and mental-health morbidity in adolescent and adult life. Early recognition and response can avert these problems and improve outcomes. More serious mental health problems may go unrecognised until a late stage in their development, leading to unnecessary morbidity, occasional mortality and, frequently, undesirable outcomes for the individual and society. Prompt recognition and easy access to the appropriate professional help can avoid unnecessary harm to the individual, their families, peers and society.

Children and young people with mental health needs (and those with other issues) may receive interventions from a range of services across mental health, social care, education, youth justice, health and the voluntary sector. Gaps in knowledge and skills and inconsistencies in service have been identified across sectors and it is essential that all the stakeholders involved in the care of children and young people deliver similarly consistent advice about emotional wellbeing to parents, carers and families. It is clear that many adults, be it in education or social care or voluntary settings, do not feel comfortable or have the skills necessary to address mental or physical health issues in children and young people. From lack of confidence in a subject comes a fear of 'making things worse'.

These issues can and should be addressed by the provision of effective, accessible, training materials. There have been a number of initiatives and reviews relating to children's and young people's health and emotional wellbeing in recent years (Department of Health, 2011), that have highlighted the need to provide services and support that will promote the long-term emotional health of children and young people and their families. It is this gap that MindEd seeks to bridge.

2.3 COMMISSION OF THE E-PORTAL

Electronic media is increasingly being utilised as a medium to deliver psychological therapies. There are significant potential advantages to using this mode of delivery, including increased reach and improved access to psychological support and treatments. Some children and young people find interacting with electronic media a preferable first step to help and most are more used to such interaction than older generations.

The Department of Health England has commissioned an e-delivery approach for children and young people's mental health through a £3.7 million grant to develop the MindEd e portal. The MindEd portal (see www.mindEd.org.uk) is being constructed by an expert, intercollegiate, interdisciplinary and cross sector consortium hosted by the Royal College of Paediatrics and Child Health (RCPCH), London.

MindEd aims to be a key resource for the one million adults who come into contact professionally with children and young people in the UK. By equipping these adults with the skills and providing tips on early help to identify a child or young person with a mental health problem or condition, better referral to the most appropriate professional can speed up and improve access and support. This means the condition can be treated earlier which, in turn, will support and protect the child's physical and mental wellbeing from a much earlier age.

The MindEd portal will sit alongside a range of other resources that aim to help address child and adolescent mental health challenges including, The Children and Young Persons Improving Access to Psychological Therapies programme (CYP IAPT) and The Healthy Child Programme (HCP), and seeks to reach out to the whole

community, bringing the CYP IAPT and HCP programmes ethos and high quality content, training and service development programs together.

2.4 AUDIENCE FOR THE E-PORTAL

The MindEd portal is aimed at adults with any responsibility for children and young people and this review is focused on providing information on e-therapies that is relevant to this audience, whether statutory or non-statutory:

- NHS staff such as paediatricians, health visitors, nurses, children's counsellors, general practitioners and psychologists.
- NHS staff with a specific focus on children and young people with mental health problems
- Non-NHS staff such as teachers, the police, youth workers, clergy, special education needs coordinators, young offender institution staff, social workers, early years professionals, educational psychologists and school and further education counsellors

Although the e-portal is not specifically designed for children and young people and their families and carers, they may use it as a source of information.

2.5 E-PORTAL LAUNCH AND COMPONENTS

The MindEd e-portal will be launched in spring 2014 and will provide a suite of e-learning packages, individually tailored to equip each audience group (e.g. teachers and sports coaches, healthcare professionals, police and judiciary staff, social workers and many more) with the skills to identify individuals with mental health conditions, to provide early help and to provide information about the services and therapies available.

MindEd will be open access and free to use in the UK. Upon accessing the website, the user will be offered an e-learning pathway and set of sessions that they, or their organisation, have selected as being of maximal interest and relevance to their needs. This will maximize engagement and appeal as users will be able to construct their own learning plans.

The e-learning sessions have been written by leading experts in the field and are informed by a very wide range of key stakeholders, including the targeted users, and are structured so that each module is linked to address a comprehensive range of key issues, using accessible and digestible language. Modules focus on normal development from infancy through to young adults and explain what the 'red flag' signs are to indicate when something is wrong, where to go for more help (including access to a full range of further reading, self-help and specialist referral guides) and when to act urgently or consider child protection issues.

In a second stage of development, MindEd will focus more deeply on targeted and specialist level material to compliment the training and development taking place in

the Child and Adolescent Mental Health Services (CAMHS) through CYP IAPT. In addition, it will link very closely with a sister development, now in its very early stages (The Disability e-portal), which will address neurodevelopmental and disability issues more specifically, taking a similar consortium-based, intercollegiate, cross-sector approach to MindEd.

2.6 THIS SYSTEMATIC REVIEW

A range of interventions and applications to support mental health in children and young people are available on the internet and via electronic devices. However, there has been no systematic review of the emerging evidence to guide choice and support further development and research and it is difficult for individuals and organisations to decide which methods may be most clinically appropriate and with what cost characteristics.

The e-portal Consortium has commissioned the National Collaborating Centre for Mental Health (NCCMH) to provide a review of evidence and develop an associated directory of e therapies, which constitutes the current report. The findings of this review will be made available as a stand-alone resource on the MindEd e-portal, but will also be accessible via links from within relevant e-learning modules. The resource will include information how to obtain access the applications found to be most effective.

In this review “child” refers to people between the ages of 5 and 11 inclusive, “young person” refers to people aged between 12 to 17 inclusive, and “young adult” refers to people aged between 18 to 25 inclusive. Characteristics of e-therapies

The term ‘e-therapies’ is used to describe a large range of interventions that have in common the use of technology to facilitate patient therapy. A distinction can be made between e-mediated and computer-based e-therapies. E-mediated therapies being those where traditional face-to-face therapy is mediated or augmented via technologies such as video conference, email or telephone. In these therapies, technology is used to aid, but not replace, the input of a therapist.

For computer-based therapies however, technologies are used to themselves provide aspects of treatment. Therapy strategies and materials are utilised to develop programs that can be used on the internet or on computer, mobile phone or other applications. This type of strategy, in theory, leads to independent therapy, where an individual receives treatment without necessarily having contact with a therapist. However, in practice, there is likely to be substantial overlap between e-mediated and computer-based therapies. For the majority of research into computer-based applications, there is some degree of input from therapists. This may be moderate, for example, telephone or email support during computer-based treatment, or may be high, for example, where a therapist is present with the individual at the time of computer sessions.

3 METHODS

3.1 OVERVIEW

NCCMH staff worked with a team of health care professionals, lay representatives and technical experts known as the Expert Advisory Group (EAG) to develop the scope, carry out the review and to interpret review findings. Specific steps were to:

1. Define the scope, which lays out exactly what will be included and excluded
2. Define review questions that cover all areas specified in the scope
3. Develop a protocol for the systematic review
4. Synthesise data retrieved, guided by the review protocols
5. Produce evidence profiles using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach
6. Consider the implications of the research findings for clinical practice

3.2 EXPERT ADVISORY GROUP

NCCMH staff searched relevant websites and literature to compose a list of suitable Expert Advisory Group (EAG) candidates. The list comprised of: known national and international experts with clinical or research knowledge of e-therapies; those published widely in e-therapies; providers of e-therapies; those with expertise in online support for service users with mental health conditions and their carers; experts in anxiety, depression, phobia, obsessive compulsive disorder, post-traumatic stress disorder, eating disorders, attention deficit hyperactivity disorder, conduct disorder, substance misuse, autism, Tourette syndrome and psychosis, especially those with experience of e-mediated psychological therapies for the aforementioned mental health conditions; and known carers of those with the mental health conditions who had expressed an interest in working with the NCCMH.

A chair was selected from this list and the remaining individuals were approached and invited to join the EAG. In total, 14 EAG members were recruited, including the chair, the facilitator and a service user and carer representative with direct experience of services. The service user and carer representative gave an integral service user focus to the EAG and the review by providing advice on outcomes most relevant to service users and carers, helping to ensure that the evidence addressed their views, highlighting sensitive issues and terminology relevant to the review and bringing service user research to the attention of the EAG.

Five EAG meetings were held between 13 February 2013 and 24 January 2014. During each day-long EAG meeting, clinical evidence was reviewed and assessed.

3.3 REVIEW QUESTIONS

1. For children and young people (<18 years) what is the effectiveness of e-therapies (including e-mediated and computer-based therapies) for mental health outcomes?
2. What computer-based applications are currently available on the internet for children and young people with mental health problems?

3.4 REVIEW METHODS

The aim of the review was to systematically identify and synthesise relevant evidence from the literature in order to answer review question 1. The review was conducted according to the review protocol which was modified to take into account issues identified by the EAG.

3.4.1 The search process

Systematic literature searches

A systematic search strategy (Appendix 7) was developed to identify studies relevant to the review. The search strategies were initially developed for MEDLINE before being translated for use in other databases/interfaces. Searches were conducted from the inception of the databases to June 2013. Searches were restricted to randomised controlled trials and conducted in 15 bibliographic databases.

Reference Management

Citations from each search were downloaded into reference management software and duplicates removed. Records were then screened against the eligibility criteria before being appraised for methodological quality (see below). The unfiltered search results were saved and retained for future potential re-analysis to help keep the process both replicable and transparent.

Other search methods

Other search methods involved conducting searches in ClinicalTrials.gov for unpublished trial reports and contacting investigators for unpublished datasets (Appendix 4).

Study selection and eligibility criteria

Citations were screened for inclusion in the review and the full-text of studies that appeared to be relevant were retrieved. Although no language restrictions were applied at the searching stage, foreign language papers were not retrieved or included in the review. Authors of potentially relevant studies were contacted if further information was needed to assess their eligibility for inclusion. The full-text of each study was assessed against pre-specified eligibility criteria to determine inclusion into the review (Table 1).

Table 1: Eligibility criteria

	Inclusion criteria	Exclusion criteria
Participants	• Children (aged 5-11 years) and young people (aged 12-17 years) • Mixed populations where the mean age was <18 years • Adult populations where all participants were <25 years[a] • Parents/ teachers/ carers of children and young people with MH problems	None
Intervention	Interventions of any e-mediated therapy that aimed to treat the mental health of a child or young person and, are either: • Remote therapist contact using technologies such as phone, e-mail or Skype/ video conferencing in real or delayed time Or • Computer-based applications for use on computers, mobile phones, tablets etc that are potentially available for use online or by download from the internet	Interventions that aimed to: • improve adherence to medication • improve assessment or diagnosis • improve the mental health of a parent or carer • treat speech and language difficulties • improve educational attainment • test interventions where e-mediated or computer-based therapies were not the major constituent of the intervention
Comparator	No treatment or another active intervention	No comparator
Outcomes	• Mental health outcome corresponding to the intervention aim e.g. depression following intervention to reduce depression (primary outcomes) • Mental health outcomes not corresponding to the intervention aim e.g. anxiety following intervention to reduce depression (secondary outcomes) • Adverse events • Rates of attrition	• Outcomes in parents, carers, teachers or health professions • Physical health outcomes

[a]The rationale for including studies where the mean age was less than 18 years or all of the population were adults less than 25 years old was that these studies are likely to be applicable to older adolescents and, given the paucity of the evidence base, they would be useful in obtaining a better understanding of the efficacy of treatments.

3.4.2 Data extraction

Study characteristics, aspects of methodological quality, and outcome data were extracted from all eligible studies, using an Excel-based form and entered into Review Manager Version 5.2 (The Cochrane Collaboration, 2012). Data were extracted independently by one reviewer and cross-checked by a second reviewer. Where possible, outcome data from an intention-to-treat analysis (ITT) (that is, a 'once-randomised-always-analyse' basis) were used. Where studies failed to report data in an extractable form, authors were contacted to request appropriate data (Appendix 5).

3.4.3 Grading the quality of evidence

The GRADE approach was used to grade the quality of evidence for each outcome (Guyatt et al, 2011). GRADE evidence profiles were produced using GRADEprofiler (GRADEpro) software (Version 3.6), following advice set out in the GRADE handbook (Schünemann et al, 2009). The GRADE approach is based on a sequential assessment of the quality of evidence with the following used as a starting point:

- RCTs without important limitations provide high quality evidence
- observational studies without special strengths or important limitations provide low quality evidence.

For RCTs, for each outcome, quality may be reduced depending on five factors: limitations (risk of bias), inconsistency, indirectness, imprecision and publication bias. For the purposes of the guideline, each factor was evaluated using criteria provided in appendix 8. Under the GRADE approach, the overall quality for each outcome is categorised into one of four groups (high, moderate, low, very low), which describes our confidence in the evidence. With high quality evidence, further research is very unlikely to change our confidence in the estimate of effect. With moderate quality evidence, further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. With low quality evidence, further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. With very low quality evidence, we are very uncertain about the estimate.

Table 2: Factors that decrease quality of evidence

Factor	Description	Criteria
Limitations	Methodological quality/ risk of bias.	Serious risks across most studies (that reported a particular outcome). The evaluation of risk of bias was made for each study using NICE methodology checklists (see Section 3.4.1).
Inconsistency	Unexplained heterogeneity of results.	Moderate or greater heterogeneity (significant heterogeneity of I^2 >50%)

Indirectness	How closely the outcome measures, interventions and participants match those of interest.	If the comparison was indirect, or if the question being addressed by the GDG was substantially different from the available evidence regarding the population, intervention, comparator, or an outcome.
Imprecision	Results are imprecise when studies include relatively few patients and few events and thus have wide confidence intervals around the estimate of the effect.	If either of the following two situations were met: • the optimal information size (for dichotomous outcomes, OIS = 300 events; for continuous outcomes, OIS = 400 participants) was not achieved • the 95% confidence interval around the pooled or best estimate of effect included both 1) no effect and 2) appreciable benefit or appreciable harm
Publication bias	Systematic underestimate or an overestimate of the underlying beneficial or harmful effect due to the selective publication of studies.	Evidence of selective publication. This may be detected during the search for evidence, or through statistical analysis of the available evidence.

3.5 INTERNET SEARCH FOR EXISTING COMPUTER APPLICATIONS

To address review question 2, Google search was used to retrieve existing computer-based applications for the treatment of mental health problems in children and young people. Search terms used were related to mental health. Search results were examined and, for each search, this process was terminated at the point where further sifting appeared to be futile (e.g. if no relevant site had been identified for the last five search result web pages). Information about the application name, conditions/symptoms targeted, administration method, country of origin and a brief description of the application was compiled into a table along with the relevant website address and any references to related research studies that were listed on the website.

3.6 FOCUS GROUPS

It was not possible to have child or young person service users as regular EAG members, due in part to the time demands of the EAG member role and problems associated with the group-based environment and format of EAG meetings. Therefore, in order to capture the opinions and experiences of children and young people on e-therapies, NCCMH commissioned YoungMinds to run focus groups. YoungMinds convened two focus groups, both in September 2013: one in London, and one in Bristol.

For the focus group in London, YoungMinds invited volunteers via email from their network of young campaigners: a list of 40 children and young people aged 11 and over based in London and the south east of England, with whom they had previously

worked with. YoungMinds received six replies and followed up via emails, texts and phone calls to explore the content and format of the focus groups in greater depth. Four young people attended the focus group, three of whom had previously accessed mental health services.

For the focus group in Bristol, YoungMinds emailed eight children and young people's groups and one primary school with whom they had previously carried out participation work. Four of these groups responded asking for further information, which was supplied via email, phone and through a face to face meeting. The organisation 'Off the Record' in Bristol was chosen due to their relatively wide age range, reliability, knowledge of issues relating to young people's mental health and the availability of a computer suite. 11 young people attended the focus group: all were members of the 'Mentality' anti-stigma campaign, four of whom had previously accessed mental health services.

YoungMinds produced a report on the consultation of e-therapies, which features in appendix 14 of this review. The findings of this report are discussion in section 15.3.4.

3.7 CONSULTATION AND VALIDATION

Comment No.	Organisation	Reference	Comments	Response
1.	Centre for Emotional Health, Macquarie University	Chapter 15.2 and Table 5	Please update the program name to Cool Teens (note the capital T). Please update the Manufacturer name to “Centre for Emotional Health, Macquarie University”. Completion of the program percentage – remove the “7” after the %	Thank you. This change has been made.
2.	Centre for Emotional Health, Macquarie University	Chapter 15.3.2	Please update the program name to Cool Teens (note the capital T).	Thank you. This change has been made.
3.	Mood Gym, Australian National University	-	Congratulations on bringing such a large undertaking to final draft stage and thank-you for inviting us to participate. We do not have any comments to add at this stage.	Thank you for your comment.

4.	Griffith University, Australia (Brave for Teenagers and Brave for Children Developers)	-	I had one comment with respect to Brave for Teens and Brave for Children. If the 12 week post-test data are used for determining effect size, then there is an issue raised in Spence et al 2011 in that many of the families in online intervention work more slowly and by 12 weeks they have generally not finished the sessions. This tends to underestimate the effects, which become much more pronounced by 6 or 12 month follow-ups. This is important and can result in an underestimate of the impact of e-therapies in young people. I'm not sure whether you can mention that somewhere.	Thank you for this comment. For consistency, post-treatment data are used to summarise the evidence in the tables in chapter 15 as most studies don't report follow-up. A note has been added that these are post-treatment data.
5.	MindEd Core Content	-	I have glanced at sections of it and the Forest plots and grading exercise and it looks an impressive and useful document.	Thank you for your comment.
6.	University of Auckland	Throughout	SPARX is sometime referred to as SPARKS. Note that the TAU in the BMJ article of SPARX (Merry 2012) was mostly face to face counselling, we are not sure of the amount of CBT this included. This should be amended throughout the document.	Thank you. These changes have been made.

7.	University of Auckland	Table 3	It would be useful to insert the overall number of participants for each study (these vary considerably, e.g. for Fleming et al. n=32 vs. Merry et al. n=187) Note that Stasiak 2012 included young people with mild to moderate depression, not a diagnosis of depression	Thank you. These changes have been made to table 3.
8.	University of Auckland	-	A typo (e.g. an extra full stop, "...mood and. at the end..."	Thank you. This change has been made.
9.	University of Auckland	-	Not all clinicians used the PHQ-9, we suggest a minor wording change, i.e., "...(10-19 on the depression scale of the Patient Health Questionnaire, which some clinicians used to determine elevated depressive symptoms)..."	Thank you. This change has been made.
10.	University of Auckland	-	"Post-treatment assessment was at 7 weeks..." should state "Post-treatment was about two months after the start of the intervention..."	Thank you. This change has been made.
11.	University of Auckland	-	Please insert more detail about the young people involved in the Fleming et al. study, specifically, "...other study (Fleming et al., 2012) 32 adolescents from alternative education programmes (i.e. teenagers excluded from mainstream education) aged 12-16 years..."	Thank you. This change has been made.

12.	University of Auckland	-	"Seven intervention modules..." these seven modules are all the 7 levels/modules of the program. Therefore this sentence would be clearer if it stated "SPARX was completed over 5 weeks..."	Thank you. The sentence has been changed in line with your comment.
13.	University of Auckland	-	The participants were not visited by a therapist (i.e. T.F. was not working as a clinician/therapist in these centres). It would be most appropriate to state "researcher" (i.e. "...phoned weekly by a researcher)..."	Thank you. This change has been made.
14.	University of Auckland	-	It would be more appropriate to have the Merry et al. 2012 study before the Fleming et al. 2012 study (as that is the order presented on p. 21 & 22 and the Merry et al. study is the larger of the two). It would also be useful to highlight that there are two RCTs on SPARX, by inserting sub-headings, such as *SPARX for those seeking help for depression* (i.e. Merry et al. 2012) and *SPARX for young people in alternative education* (Fleming et al. 2012).	Thank you for this suggestion. The report is structured so that results for outcomes of intervention versus wait-list or no treatment control are listed before those for a computerised intervention versus another active intervention; therefore, for consistency, we would prefer to keep that structure.
15.	University of Auckland	Table 4	It should be made clear that the effect sizes for SPARX are based on Fleming et al., 2012 alone, and exclude Merry et al., 2012);	Thank you, a footnote has been inserted in the text to indicate this.

16.	University of Auckland	-	The qualitative aspects of the review are interesting. However, it would be worth being clearer in relation to which participants were current/past clients of mental health services and which young people were not (e.g. by stating that after each quote), as the young people who have not accessed mental health services could have very different views to those who have (i.e. many cCBT programs have been designed to appeal to and be accessed by young people not currently using services). It would also be very useful to have the quotes applied to the individual programs trialled (for instance, it would appear that participants had specific things to say about certain programs, but this is not clear in the write-up, it seems to imply that all the cCBT programs are the same).	Thank you for your comment. Please refer to section 3.6 which describes how the focus groups were recruited, and includes the amended number of participants with mental health conditions who took part in the focus groups. As the comments were recorded anonymously, we are therefore not able to state whether a comment was made by someone who had previously accessed mental health services. Please see the last sentence of section 15.3.3, Methods, which has been amended to reflect this. The purpose of the focus groups was to obtain feedback on features of e-therapies products in general, not on specific products. Furthermore, they were short focus groups of a small number of participants, and therefore not extensive enough to provide a comprehensive and fair review of particular products. The focus groups were not intended to be primary research but to capture the views of children and young people in general, as they could not be part of the expert advisory group due to age restrictions. We have added section 15.3.2, Aim, to help clarify this.

17.	University of Auckland	Appendix 11	Given that the Merry study was a non-inferiority study, not a superiority study, we question the validity of the use of the Forest plots where the primary aim is to show superiority of arm over another. At the least, the different design should be made clear. As it stands it is potentially confusing.	Thank you, we have now made it clear in section 4.1.1 that Merry used a non-inferiority design (and in Appendix 10). However, we do think the forest plots are appropriate as they are because both superiority and non-inferiority can be evaluated using the confidence intervals.
18.	University of Auckland	Appendix 11	The mean difference and the post-intervention means are pooled in this figure. Using mean differences is more robust as it allows for differences in baseline scores. Could these not have been used throughout? We note that in Table 1 only the post-intervention means are used. This has led to an underestimate of the effect of the Stasiak study for example.	Thank you for raising this issue. During the development of the review protocol, it was decided that the review would focus on data collected at post-treatment. We acknowledge that in some cases this may lead to an underestimate or overestimate in the effect size when there are baseline differences. However, given that this was pre-specified in the review protocol, we think it would be inappropriate to change the approach post-hoc.
19.	University of Auckland	Appendix 11	The label **"***Self-rated depression for adolescent/ young adult depression and anxiety and depression cCBT programs compared with face-to-face CBT or TAU consisting of mainly face to face CBT***"** should be reworded to say **"***Self-rated depression for adolescent/ young adult depression and anxiety and depression cCBT programs compared with face-to-face CBT or TAU consisting of mainly face to face counselling***"**	Thank you, the figure label has been changed in line with your comment.
20.	University of Auckland	Appendix 11	The Forest plot labels are the wrong way round.	Thank you, the labels for figures 4.5 and 4.6 have been corrected.

21.	University of Auckland	Appendix 11	Ideally the Forest plots should be consistent with cCBT on the same side for each plot. There is some inconsistency currently	Thank you for identifying this issue. It is a difficulty encountered when presenting data for rates of remission. They can be presented as the risk of not remitting and these plots would have cCBT on the left as for other outcomes. However, this was not done as it was considered that, when presented in the text, this would be difficult for readers to interpret (The Cochrane handbook now suggests that binary outcomes are framed in terms of what makes sense to readers).
22.	University of Auckland	Appendix 11	Note that the effect of SPARX on anxiety was measured and reported in the Merry 2012 trial. These results have not been included in the anxiety section although perhaps should have been.	Thank you for raising this issue. It was decided before synthesizing the data that only mental health related outcomes relevant to the focus of the intervention would be extracted. Therefore, anxiety outcomes were not extracted from studies focusing on improving depression.

23.	University of Auckland	Appendix 12	The heading of this table should be reworded – the comparison group was TAU, largely face to face counselling. (ie not CBT) We do not believe that overall grade of low quality is justified for the Merry 2012 study. We question the grading of "serious imprecision" on the grounds that the sample size was not optimal. According to our power calculations, and adjusting for our low attrition rate, we were adequately powered. This was a large study, particularly when compared with other studies in the review. We also do not believe that there has been enough credit for other design strengths, such as allocation concealment, low attrition, representative sample etc. In addition, we also believe that the rating of "serious" indirectness is not justified for two reasons. The first is that a comparison with TAU, with all its strengths and weaknesses, is of relevance in the real world. It is a more relevant comparison than a theoretical one of face to fact therapy, given that this is often not available. Secondly, we did sensitivity analyses using only those who received therapy in the TAU arm, and confirmed the findings.	Thank you for raising these important issues. We have amended the heading for figure 4.7 as suggested. With regard to the GRADE, please note that under the approach, randomised trials (e.g., Merry 2012) start as high quality. Therefore, considerable credit is given for design strengths associated with randomised trials. We then considered whether any of the other factors lowered our confidence in the estimate of the effect. We think we were justified to downgrade for imprecision as it is likely that additional research could alter the effect size (even if a single study was powered adequately). With regard to indirectness, we think the ideal comparator (for the NHS) is a face-to-face evidence-based intervention. Even taking into account your sensitivity analysis, we think it appropriate to downgrade because we are not confident that the comparator is directly relevant (there was considerable heterogeneity in the TAU group – a point made in the BMJ paper).

24.	University of Auckland		The GRADE system you have used appears not to discriminate well between studies. While I know that this is a standard system, it seems that you have used a subset of criteria to assess quality – although I may be wrong. We were surprised to find our large study (Merry 2012), which adheres pretty closely to the CONSORT criteria, and which would rate well on most of the detailed quality ratings we have used in some of our meta-analyses, rating as low quality in your system whereas the much smaller pilot study (Stasiak 2012) was rated moderate quality. We would rank these differently and it appears that the low quality rating is on the grounds of sample size and the TAU comparison, both of which can be argued, and that the many strengths of the study are not given much weight.	Thank you for your comment. The Stasiak trial should have been downgraded to low quality evidence. Although this grade will still not discriminate between studies, we think this is appropriate when you consider that 'low quality' means that 'further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.' We think this is true for outcomes from either study.
25.	University of Auckland		The Merry 2012 study is a non-inferiority study, not a superiority study. It therefore doesn't sit well in the tables alongside the other studies, which are mostly superiority studies. The interpretation of our findings is likely to be lost on readers, and is not clearly brought out in the review.	Thank you for raising this issue. For the purposes of this review, we are not convinced that making this distinction would help the reader as we have interpreted the effect sizes and CIs taking into consideration the comparator. For example, when the comparator was an evidence-based face-to-face intervention, we examined the CI for evidence of equivalence. Where the comparator was no treatment or waitlist, we looked for evidence of superiority.

4 ANXIETY AND DEPRESSION

4.1 COMPUTERISED COGNITIVE BEHAVIOURAL THERAPY

4.1.1 Introduction

Cognitive behaviour therapy (CBT) for children and young people is a therapeutic approach based on social learning theory which has developed a range of cognitive and behavioural methods adapted for children and young people (Stallard et al, 2002). CBT is based on the premise that the way that individuals think about a situation affects the way that they act and that, in turn, these actions affect how they think and feel. CBT thus aims to help individuals to change their thinking patterns, behaviours or both.

At the core of the CBT model is a method of clinical formulation which explores the relationship between thoughts, feelings and behaviours, recognising the important role of external environmental factors in exacerbating and maintaining psychological distress and disorder (e.g. bullying). The approach adopts both behavioural and cognitive methods and the balance between these components varies according to the specific problem. For conduct type problems, there is more emphasis on behavioural methods whereas, for emotional difficulties such as anxiety and depression, there is greater emphasis on combined cognitive and behavioural methods.

Considering the general structure of CBT and that outcomes and their evaluation are built into the framework, it might be predicted to translate well to a computerised medium. This chapter and section investigates data available to support or refute this notion.

Anxiety

CBT has been established as an effective treatment for anxiety disorders in children and young people (James et al, 2013) (Reynolds et al 2012), with 50-60% of children and young people typically being free of their primary anxiety diagnosis following treatment (Cartwright-Hatton et al, 2004).

In recent years, computerised CBT (cCBT) packages have been developed in order to promote accessible and efficient means of treatment delivery (Spence et al, 2006). CCBT interventions for anxiety disorders in young people have varied in the extent of therapeutic input required. cCBT treatments typically include the core components of standard CBT treatments, that is, psychoeducation about the nature of anxiety and the CBT model, cognitive restructuring, graded exposure to feared situations or stimuli, problem solving and relaxation strategies. As in non-computerised, standard, CBT, homework would generally be considered a key part of the program, to ensure that participants are applying the principles in their day to day life. As is the case with

standard (non-computerised) CBT, most treatment packages are aimed at a broad range of anxiety disorders (most commonly social anxiety disorder, separation anxiety disorder, specific phobias and generalised anxiety disorders).

Depression

There is evidence that CBT may be effective for depression in children and young people (Weisz et al 2006) and CBT in its usual face to face format is a NICE recommended treatment approach for depression in children and young people (NICE, 2005). Perhaps because it is a relatively new approach, or more likely because of its structured, knowledge and learning rich structure, CBT and its practitioners have been quicker to embrace and develop computerised delivery methods than many other psychological therapies. The need to improve access and reach more children and young people more easily is compelling (CEP Mental Health Policy group, 2012), perhaps no more than 15-20% of those requiring help with depression are accessing it. For some youth, the notion of speaking with another person about their mood and feelings is aversive or worrying, and for others it is hard to get seen or be seen in a place and at a time that they find convenient. Computerised approaches have the potential to help.

Included studies

14 studies investigated the efficacy of ten computerised cognitive behavioural therapy (cCBT) programs for anxiety and/or depression. Four programs were aimed at mixed anxiety disorders, three programs were aimed at depression, two programs were aimed at both anxiety disorders and depression and one was aimed specifically at social anxiety. Two programs were designed for use in children and the remaining eight were used by young people or students. Study characteristics are shown in Appendix 10 (Table 17) and a summary of included cCBT programs is shown in Table 3.

Table 3: Included cCBT programs

Program	Study	Aim	N	Population	Mental health status
Young people/young adult cCBT programs					
SPARX	Merry 2012	Depression symptoms	187	Young people	Mild to moderate depression
	Fleming 2012	Depression symptoms	32	Young people	At risk of depression
The Journey	Stasiak 2012	Depression	34	Young people	Mild to moderate depression
MoodHelper	Clarke 2009	Depression	160	Young adults	At risk of depression
MoodGym	Sethi 2010	Symptoms of anxiety and depression	38	Students	Mild to moderate anxiety or depression
	Ellis 2011	Anxiety and depression	39	Students	Mild to moderate anxiety or depression
	Sethi 2013	Anxiety and depression	67	Students	Depression or general anxiety
	Calear 2009	Anxiety and depression	1477	Young people	General population
Think Feel Do	Stallard 2011	Anxiety and depression	20	Children and Young people	Anxiety disorder diagnosis or mild to moderate depression
Cool Teens	Wuthrich 2012	Anxiety Disorder	43	Young people	Anxiety disorder diagnosis
BRAVE for Teenagers-ONLINE	Spence 2011	Anxiety Disorder	115	Young people	Anxiety disorder diagnosis
Tillfors 2011 (unnamed program)	Tillfors 2011	Social anxiety	19	Young people	Social anxiety disorder diagnosis
Child cCBT programs					
Camp Cope-A-Lot	Khanna 2010	Anxiety	49	Children	Anxiety disorder diagnosis
BRAVE for Children-ONLINE	March 2009	Anxiety	73	Children	Anxiety disorder diagnosis

Study characteristics

SPARX is an interactive fantasy game cCBT program for depression delivered via CD-ROM, where participants choose a character with which they undertake challenges. Before each module, a 'guide' introduces it, provides education and gauges mood and at the end, sets and monitors life challenges. SPARX has been assessed by two studies in Young people. In one study (Merry et al, 2012) 187 young people aged 12-19 years with mild to moderate depression (10-19 on depression scale of PHQ-9 or presence of depressive symptoms as judged by a clinician) were randomised to SPARX or treatment as usual (commonly face-to-face counselling). The study was designed as a non-inferiority trial, where the aim was to assess whether SPARX performed as well as treatment as usual. For the SPARX group, the seven modules were completed over 4-7 weeks. Participants not improving were told to seek help from their referring clinicians. Post-treatment assessment was approximately at two months after intervention onset and follow-up assessment at 3 months after baseline. In the other study (Fleming et al, 2012) 32 Young people from alternative education programmes (i.e. Young people excluded from mainstream education), aged 12-16 years, at risk of depression (CDRS-R score of over the 70th percentile) were randomised to SPARX or wait-list control. SPARX consisted of seven intervention modules, which were completed over 5 weeks at education sites with minimal supervision (sites were visited or phoned weekly by one of the study researchers). Post-treatment assessment was conducted at 5 weeks (follow-up was at 10 weeks but included only the group initially randomised to SPARX).

The Journey is an interactive fantasy adventure game cCBT program for depression and was used to inform the development of SPARX (see below). It has been assessed in one study (Stasiak et al, 2012). Thirty four Young people aged 13-18 years with a diagnosis of depression were randomised to The Journey or control (placebo program with psycho educational content). There was no therapist input except in cases where the participant requested counselling. The seven modules of the intervention were conducted over 4 to 10 weeks and assessments made at 10 (post-treatment) and 14 (follow-up) weeks after baseline.

MoodHelper is a cCBT program for depression delivered via the internet, with information pages, an auto-scale, where participants measured and monitored their depression levels, an online journal/ diary, a counter-thought generator for negative thoughts and behaviour therapy tutorials with automated feedback (Clark et al, 2009). 160 young adults aged 18-24 years diagnosed or at risk of depression (30 or more on CDRS-R or 76 or more on RADS-2) were randomised to cCBT or treatment as usual (TAU) (participants in both study arms were allowed to continue with TAU). There was minimal input from therapists or researchers during the intervention period. Participants in the intervention group could use the cCBT as frequently as they wished within the week intervention period and post-treatment assessment was conducted at 5, 10, 16 and 32 weeks.

MoodGym is a five-module cCBT program for anxiety and depression delivered via the internet, consisting of reading materials, demonstrations, quizzes and homework. Six characters, introduced at the beginning of the program, are used as the basis for examples and discussion. In research studies, it is usually completed in three 60 minute sessions or five 45 minute sessions. MoodGym has been assessed by five studies.

Three MoodGym studies were with students. In one student study (Sethi et al, 2010) 38 students aged 18-23 years with low to moderate levels of anxiety or depression (Dass-21 score: 10-20 for depression, 8-14 for anxiety) were randomised to receive MoodGym, face-to face CBT, combined MoodGym and face-to-face CBT or to a no treatment control. For the MoodGym group, the first session was guided by a therapist who was available to help if needed in subsequent sessions. In the second student study (Ellis et al, 2011), 39 students aged 18-25 years with low to moderate psychological distress (identified with K10) were randomised to MoodGym, an online per support group (MoodGarden) or a no treatment control. For MoodGym, a researcher was present at each session to answer questions. For both student studies, post-treatment assessment was conducted at 3 weeks. In the third study (Sethi et al. 2013) 89 students aged 18-25 years with mild to moderate anxiety/and or depression (defined as score between 10-12 on depression subscale and 8-14 on anxiety subscale of DASS-21) were randomised to MoodGym, face to face therapy, a combination of MoodGym and face to face therapy or to control. A psychologist was available in the room at the time of the MoodGym intervention to introduce the program and answer any questions.

One MoodGym study was in a general school population of Young people. In this study (Calear et al, 2009), 1,477 Young people aged 12-17 years were randomised to MoodGym or a wait-list control group. The intervention was conducted with minimal input from a therapist (only teachers were present to help with technical difficulties). Post-treatment assessment was conducted at 5 weeks with follow-up assessment at 6 months after baseline.

Think Feel Do is a cCBT program for anxiety and depression delivered via CD-ROM, consisting of quizzes, exercises, cartoons and video clips, with narrators guiding participants through the sessions. It has been assessed by one study (Stallard et al, 2011) where 20 children and Young people aged 11-16 years referred to Tier 3 CAMHS with an anxiety disorder or mild to moderate depression (scale cut-off for inclusion not specified) were randomised to Think Feel Do or wait-list control. For Think Feel Do, six 30-45 minute sessions were delivered over 6 weeks, commonly in participant's homes, and each session was facilitated by a psychology assistant, teacher or nurse. The wait-list control was for 4 weeks. Post-treatment assessment was at 6 weeks.

Cool Teens is a cCBT program for anxiety delivered via CD-ROM, consisting of reading materials, cartoons and video case studies and has been assessed by one study (Wuthrich et al, 2012). 43 Young people aged 14-17 years with a diagnosis of any anxiety disorder were randomised to Cool Teens or a wait-list control. Young people receiving Cool Teens were given a CD-ROM containing eight 30 minute sessions to be completed over a 12 week period. Parents received an information booklet. Young people and parents received phone calls throughout the intervention period (eight calls to young people and three calls to parents) from a dedicated therapist. Post-treatment assessment was conducted at 12 weeks.

BRAVE for Teenagers-ONLINE is a cCBT program for anxiety delivered via the internet, consisting of reading materials, exercises, games and quizzes. Adolescent characters, introduced in the first session, are used throughout to demonstrate therapeutic skills. BRAVE for teenagers-ONLINE was assessed by one study (Spence et al, 2011) where 115 young people aged 12-18 years with a diagnosis of any anxiety disorder were randomised to Brave for teenagers-ONLINE, face-to-face CBT in a clinic or to a wait-list control. For those receiving BRAVE, separate 60 minute sessions were delivered to young people (10 weekly sessions) and parents (five sessions) over 12 weeks. Designated therapists provided email feedback in response to homework tasks and, after session five, gave a 15 minute phone call to young people to help them construct their 'exposure hierarchy'. One month and 3 months after treatment, young people received online booster sessions. Post-treatment assessment was conducted at 12 weeks and follow-up assessment was conducted 6 and 12 months after baseline.

Tillfors et al. assessed an unnamed cCBT program for social anxiety delivered via the internet, consisting of information pages and homework of essay questions and quizzes (Tillfors et al, 2011). 19 young people and young adults aged 15-21 years with a diagnosis of social anxiety disorder were randomised to cCBT or a wait-list control. cCBT was conducted in nine weekly sessions. After each session, therapists reviewed homework and gave email feedback before the next session could proceed. Post-treatment assessment was conducted at 9 weeks.

BRAVE for Children-ONLINE is a cCBT program for anxiety delivered via the internet, with consecutive web pages with reading materials, exercises, games, quizzes and homework and has been assessed by one study (March et al, 2009). 73 children aged 7-12 years with an anxiety diagnosis or at risk of anxiety (ADIS-C/P ≥4) were randomised to BRAVE for children-ONLINE or to a wait-list control. For those receiving BRAVE for children-ONLINE, separate 60 minute sessions were delivered to children (once a week for 10 weeks) and to parents (once a week for 6 weeks). Therapists provided email feedback in response to homework tasks and gave two phone calls to parents and children during treatment: one to introduce the program and one halfway through treatment, to provide assistance with therapy. Post-treatment assessment was conducted at 10 weeks and follow-up assessment was conducted 6 months after baseline.

Camp Cope-A-Lot is a cCBT program for anxiety in children delivered via CD-ROM, that uses text, animation with cartoon characters, photographs, videos and rewards. It has been assessed by 1 study (Khanna et al, 2010). 49 children aged 7-13 years with a diagnosed anxiety disorder were randomised to Camp Cope-A-Lot, face-to-face CBT or control (computer-assisted education, support and attention). Intervention was conducted in 12 weekly 35 minute sessions. The first six sessions were completed independently by children (with parents help). The final six sessions were completed by children with the help of a therapist and parents received two sessions with the therapist. Post-treatment assessment was at 12 weeks and follow-up at 24 weeks after baseline.

4.1.2 Outcomes

Consistently reported outcomes for anxiety and depression were severity of symptoms, rates of remission and global functioning and these are reported in this review for both self and clinician-rated outcomes. Some studies presented results for intervention-related outcomes such as knowledge and beliefs about anxiety and depression that were not considered to be mental health outcomes and are not presented in this review.

Since there appeared to be differences in the approach and efficacy of programs, they are sub-grouped in the analysis but the overall meta-analysis across programs is also presented. Programs in young people and young adults were considered separately to child populations and studies of general populations were considered separately to at risk or diagnosed populations. The program aimed at social anxiety was not combined with other programs due to the specific nature of the intervention.

A feature of cCBT program studies considered to be important was the amount of therapist input given. To investigate this source of heterogeneity, for the most commonly reported outcomes (self-reported anxiety and depression), a subgroup analysis was conducted where studies were divided by the degree of therapist input (pooled across programs).

4.1.3 Quality of the evidence

GRADE quality assessments are shown in Appendix 12 (Tables 4.1-4.17). The design/ conduct of studies was reasonable and some outcomes were not downgraded for risk of bias. In some cases outcomes were downgraded, commonly where it was unclear whether outcome assessors were blinded to intervention allocation. The majority of studies were conducted with a degree of therapist input that was in addition to the cCBT program. There was therefore large uncertainty around the independent effects of these programs and many studies were downgraded for indirectness. Where programs were combined in the meta-analysis, there was often some statistical heterogeneity but this was rarely high and few outcomes were therefore downgraded for inconsistency. Precision was low, even where programs were combined in the

meta-analysis, and the quality of the evidence was often downgraded for imprecision. The largest meta-analyses were tested for publication bias (with a funnel plot) and did not show evidence of bias. No formal downgrading was made, however, due to the small number of studies, testing was considered to be unreliable and the presence of publication bias in this area is a possibility.

4.1.4 Findings

Programs for anxiety and/or depression in young people or young adults

SPARX

When compared with a wait-list control, at post-treatment, SPARX had a small to medium effect on self rated symptoms of depression, but the estimate of effect was imprecise (SMD -0.47, 95% CI -1.2 to 0.25; k=1, N=32) (Figure 4.1) (confidence in the evidence was low). For clinician rated symptoms of depression, there was a large effect favouring SPARX (SMD -2.13, 95% CI -3.08 to -1.19; k=1, N=30) (Figure 4.2) (confidence in the evidence was very low). For rates of remission, there was a small effect favouring SPARX (RR 1.80, 95% CI 0.88 to 3.68; k=1 N=32), but the estimate of effect was imprecise (Figure 4.3) (confidence in the evidence was very low). There was a possible reduction in the risk of self-harm for SPARX (RR 0.29, 95% CI 0.06 to 1.33; k=1, N=30), but the estimate of effect was imprecise (confidence in the evidence was low).

When compared with treatment as usual (commonly face-to-face counselling), at post-treatment, SPARX produced a similar effect on self-rated depression (SMD -0.23, 95% CI -0.51 to 0.06; k=1, N=187) (Figure 4.4), clinician-rated depression (SMD -0.11, 95% CI -0.40 to 0.18, k=1, N=187) (Figure 4.5), remission (RR 1.26, 95% CI 0.88 to 1.80; k=1, N=187) (Figure 4.6) and global functioning (SMD -0.23, 95% CI -0.56 to 0.10; k=1, N=187) (Figure 4.7). There were similar rates of side effects (RR 1.32, 95% CI 0.81 to 2.15, k=1, N=187) (confidence in the evidence was low). At 3 month follow-up, there were similar effects on self-rated depression (SMD -0.06, 95% CI -0.34 to 0.23; k=1, N=187) (Figure 4.8), clinician-rated depression (SMD-0.04, 95% CI -0.33 to 0.24; k=1, N=187) (Figure 4.9) and remission (RR 1.11, 95% CI 0.86 to 1.44; k=1, N=187) (Figure 4.10) (confidence in the evidence was low).

The Journey

When compared with a computer administered attention program control (psycho-educational content), at post-treatment, The Journey had a similar effect on self-rated depression (SMD 0.00, 95% CI -0.67 to 0.67; k=1, N=34) (Figure 4.1). The Journey had a medium effect on clinician-rated depression (SMD -0.52, 95% CI -1.20 to 0.17; k=1, N=34) (Figure 4.2) and a small effect on rates of remission (RR 1.33, 95% CI 0.59

to 3.02; k=1, N=34) (Figure 4.3), but the estimates of effect were imprecise (confidence in the evidence was low).

At 3 month follow-up, The Journey had a similar effect on self-rated depression (SMD 0.30, 95% CI -0.38 to 0.97; k=1, N=34) (Figure 4.11), clinician-rated depression (SMD -0.18, 95% CI -0.85 to 0.50; k=1, N=34) (Figure 4.12) and clinician-rated remission (RR 1.14, 95% CI 0.53 to 2.44, k=1, N=34) (Figure 4.13)compared with the attention control (confidence in the evidence was low).

MoodHelper

When compared with a treatment as usual control (a website with information on depression) at post-treatment, MoodHelper had a small effect on self-rated symptoms of depression, but the estimate of effect was imprecise (SMD -0.31, 95% CI -0.69 to 0.06; k=1, N=109) (Figure 4.1) (confidence in the evidence was low).

MoodGym population with MH problems

When compared with a no treatment control, MoodGym had a large effect on self-rated symptoms of anxiety at post-treatment (SMD -1.42, 95% CI -2.04 to -0.81; k=3, N=91, I^2 39%) (Figure 4.14) (confidence in the evidence was low). MoodGym had a large effect on self-rated symptoms of depression, but there was significant heterogeneity (SMD -0.92, 95% CI -1.38 to -0.47; k=3, N=91, I^2 86%) (Figure 4.1) (confidence in the evidence was very low).

When compared with face-to-face CBT, at post-treatment, there was a large effect favouring face-to-face therapy for self-rated anxiety (SMD 0.81, 95% CI -0.39 to 2.01; k=2, N=63, I^2 78%) (Figure 4.15) and self-rated depression (SMD 1.16, 95% CI -0.78 to 3.09; k=2, N=63, I^2 88%) (Figure 4.4), but there was a large amount of heterogeneity and the estimates of effect were imprecise (confidence in the evidence was very low).

MoodGym general population

When compared with a waitlist control group, at post-treatment, MoodGym had very small effects on self-rated symptoms of depression (SMD -0.15, 95% CI -0.27 to -0.03; k=1, N=1,280) (Figure 4.16) and anxiety (SMD -0.15, 95% CI -0.26 to -0.03; k=1, N=1,273) (Figure 4.17) (confidence in the evidence was moderate).

At 6 month follow-up, compared with the control, MoodGym had very small/ small effects on self-rated depression (SMD -0.13, 95% CI -0.24 to -0.01; k=1, N=1,189) (Figure 4.18) and anxiety (SMD -0.25, 95% CI -0.37 to -0.13; k=1, N=1,189) (Figure 4.19) (confidence in the evidence was moderate).

Think Feel Do

When compared with a waitlist control, Think Feel Do had a medium effect on self-rated depression (SMD -0.71, 95% CI -1.79 to 0.36; k=1, N=15), but the estimate of effect was imprecise (Figure 4.1) and Think Feel Do had a similar effect on self-rated anxiety (SMD 0.15, 95% CI -0.88 to 1.19; k=1, N=15) (Figure 4.14) (confidence in the evidence was low).

Cool Teens

When compared with a wait-list control, at post-treatment, Cool Teens had a medium effect on self-rated anxiety (SMD -0.73, 95% CI -1.35 to -0.11; k=1, N=43) (Figure 4.14) and clinician-rated global functioning (SMD -0.64, 95% CI -1.26 to -0.02; k=1, N=43) (Figure 4.20) and a large effect on clinician-rated anxiety (SMD -1.35, 95% CI -2.02 to -0.68; k=1, N=43) (Figure 4.21) (confidence in the evidence was low).

Brave for teenagers-ONLINE

When compared with a wait-list control group, at post-treatment, BRAVE had a similar effect on self-rated anxiety (SMD 0.08, 95% CI -0.40 to 0.56; k=1, N=71) (Figure 4.14) but, there were medium to large effects favouring BRAVE for clinician-rated anxiety severity (SMD -0.94, 95% CI -1.44 to -0.43; k=1, N=71) (Figure 4.21), remission (RR 4.91, 95% CI 0.65 to 37.11; k=1, N=71) (Figure 4.22) and global functioning (SMD-0.77, 95% CI -1.27 to -0.28; k=1, N=71) (Figure 4.20) (confidence in the evidence was low).

When compared with face-to-face therapy, at post-treatment, BRAVE had a similar effect on self-rated anxiety severity (SMD -0.22, 95% CI -0.64 to 0.20; k=1, N=88) (Figure 4.15), clinician-rated anxiety (SMD -0.13, 95% CI -0.55 to 0.29; k=1, N=88) (Figure 4.23), remission (RR 0.89, 95% CI 0.38 to 2.09; k=1, N=88) (Figure 4.24) and global functioning (SMD -0.16, 95% CI -0.25 to 0.58; k=1, N=88) (Figure 4.25) (confidence in the evidence was low). At 12 month follow-up, BRAVE had a similar effect on self-rated anxiety (SMD 0.14, 95% CI -0.28 to 0.56; k=1, N=88) (Figure 4.26), clinician-rated anxiety (SMD 0.07, 95% CI -0.35 to 0.49; k=1, N=88) (Figure 4.27), remission (RR 0.92, 95% CI 0.64 to 1.33; k=1, N=88) (Figure 4.28) and global functioning (SMD 0.04, 95% CI -0.46 to 0.38; k=1, N=88) (Figure 4.29) (confidence in the evidence was low).

Meta-analysis of programs in young people or young adults

Where there was more than one study providing data for an outcome, data were combined and the results are presented below. GRADE assessments for combined results are shown in Appendix 12 (Tables 4.13-4.17). Outcomes for programs aimed at treating anxiety were combined with outcomes for programs aimed at treating anxiety and depression. Outcomes for programs aimed at treating depression were combined with outcomes for programs treating anxiety and depression.

Programs aimed at depression or anxiety and depression

Compared with a non-therapeutic control, cCBT had a medium effect on self-rated depression but there was significant heterogeneity (SMD -0.49, 95% CI -0.73 to -0.24; k=7, N=281, I^2 71%) (Figure 4.1) and a large effect on clinician-rated depression severity (SMD -1.08, 95% CI -1.63 to -0.52; k=2, N=64) (Figure 4.2) (confidence in the evidence was low). For remission, cCBT had a small effect, but the estimate of effect was imprecise (RR 1.58, 95% CI 0.92 to 2.71; k=2, N=34) (confidence in the evidence was low) (Figure 4.3). For one program with follow-up (3 months, The Journey), there was a small effect in favour of the control for self-rated depression and a small effect in favour of cCBT for clinician-rated depression and rates of remission, but the estimate of effect was imprecise (confidence in the evidence was low).

Compared with face-to-face therapy (CBT or counselling), levels of self-rated depression favoured face-to-face therapy but the estimate of effect was imprecise (SMD 0.56, 95% CI -0.44 to 1.56; k=3, N=250) and there was large heterogeneity (I^2 88%) (Figure 4.4) (confidence in the evidence was low). In the one program reporting other outcomes (SPARX), compared to face-to-face counselling, cCBT had a similar effect on clinician-rated depression, remission and global functioning (Figure 4.5, Figure 4.6, Figure 4.7) (confidence in the evidence was low). In this study, at 3 month follow-up, cCBT had a similar effect on self and clinician-rated depression and remission (Figure 4.8, Figure 4.9, Figure 4.10) (confidence in the evidence was low).

Programs aimed at anxiety or anxiety and depression

Compared with a non-therapeutic control, cCBT had a medium effect on self-rated anxiety, but there was significant heterogeneity (SMD -0.77, 95% CI -1.45 to -0.09, k=6, N=220, I^2 80%) (Figure 4.14). cCBT had a large effect on clinician-rated anxiety severity (SMD -1.09, 95% CI -1.49 to -0.68; k=2, N=114) (Figure 4.21) and global functioning (SMD -0.72, 95% CI -1.11 to -0.33; k=2, N=114) (Figure 4.20). cCBT had a large effect on remission, but the estimate of effect was imprecise (RR 4.91, 95% CI 0.65 to 37.11, k=1, N=71) (Figure 4.22) (confidence in the evidence was low).

Compared with face-to-face CBT, cCBT had a similar effect on self-rated anxiety (SMD 0.43, 95% CI -0.62 to 1.48; k=3, N=151, I^2 88%) (Figure 4.15) (confidence in the evidence was very low), clinician-rated anxiety (SMD -0.13, 95% CI -0.55 to 0.29; k=1, N=88) (Figure 4.23), remission (RR 0.89, 95% CI 0.38 to 2.09; k=1, N=88) (Figure 4.24) and global functioning (SMD 0.16, 95% CI -0.25 to 0.58; k=1, N=88) (Figure 4.25) (confidence in the evidence was low). For one study where there was follow-up (BRAVE for Teenagers-ONLINE), cCBT produced a similar effect on self and clinician-rated anxiety, remission and global functioning at 12 month follow-up (Figure 4.26, Figure 4.27, Figure 4.28, Figure 4.29) (confidence in the evidence was low).

Programs for social anxiety disorder in young adults

Tilfors 2011

When compared with a waitlist control, social anxiety cCBT had a large effect on self-rated social anxiety (SMD -1.22, 95% CI -2.25 to -0.19; k=1, N=18) (Figure 4.30) and depression (SMD -1.33, 95% CI -2.37 to -0.28, k=1, N=18) (Figure 4.31). Social anxiety cCBT had a small effect on quality of life but the estimate of effect was imprecise (SMD -0.46, 95% CI -1.40 to 0.48; k=1, N=18) (Figure 4.32) (confidence in the evidence was low).

Programs for anxiety in children

Camp Cope-A-Lot

Compared with a control of non-therapeutic computer use Camp Cope-A-Lot had a small effect on self-rated anxiety at post-treatment, but the estimate of effect was imprecise (SMD -0.26, 95% CI -0.95 to 0.44; k=1, N=32) (Figure 4.33). Camp Cope-A-Lot had a large effect on clinician-rated anxiety (SMD -1.09, 95% CI -1.84 to -0.34; k=1, N=32) (Figure 4.34) and remission (RR 4.33, 95% CI 1.52 to 12.34; k=1, N=32) (Figure 4.35). It had a medium effect on global functioning, but the estimate of effect was imprecise (SMD -0.48, 95% CI -1.18 to 0.22; k=1, N=32) (Figure 4.36) (confidence in the evidence was low).

Compared with face-to-face CBT Camp Cope-A-Lot had a similar effect on self-rated anxiety at post-treatment (SMD -0.05, 95% CI -0.73 to 0.64; k=1, N=33) (Figure 4.37), clinician-rated anxiety (SMD -0.15, 95% CI -0.83 to -0.54; k=1, N=33) (Figure 4.38), remission (RR 1.15, 95% CI 0.78 to 1.69; k=1, N=33) (Figure 4.39) and global functioning (SMD 0.23, 95% CI -0.46 to 0.91; k=1, N=33) (Figure 4.40) (confidence in the evidence was low).

At 6 month follow-up, compared with face-to-face CBT, Camp Cope-A-Lot had a similar effect on self-rated anxiety (SMD -0.07, 95% CI -0.84 to 0.70; k=1, N=26) (Figure 4.41). Camp Cope-A-Lot had a large effect on clinician-rated anxiety (SMD -0.87, 95% CI -1.68 to -0.06; k=1, N=26) (Figure 4.42) but a similar effect to face to face CBT on clinician-rated global functioning (SMD 0.19, 95% CI -0.58 to 0.97; k=1, N=26) (Figure 4.43) (confidence in the evidence was low).

BRAVE for Children-ONLINE

When compared with a waitlist control BRAVE for Children-ONLINE had a similar effect on self-rated anxiety at post-treatment (SMD -0.17, 95% CI -0.69 to 0.34, k=1, N=59) (Figure 4.33) (confidence in the evidence was moderate). For clinician-rated outcomes, Brave for Children-Online had a medium effect on anxiety (SMD -0.55, 95% CI -1.07 to -0.03; k=1, N=59) (Figure 4.34) and global functioning (SMD -0.76, 95% CI -1.29 to -0.23; k=1, N=59) (Figure 4.36) (confidence in the evidence was low). It had a large

effect on remission, but the estimate of effect was imprecise (RR 4.83, 95% CI 0.60 to 38.90; k=1, N=26) (Figure 4.35) (confidence in the evidence was low).

Meta-analysis of child programs aimed at anxiety

When compared with a non-therapeutic control, cCBT had a small effect on self-rated anxiety, but the estimate of effect was imprecise (SMD -0.20, 95% -0.62 to 0.21; k=2, N=91) (Figure 4.33) (confidence in the evidence was low). cCBT had a medium/ large effect on clinician-rated anxiety severity (SMD -0.75, 95% CI -1.27 to -0.24; k=2, N=91) (Figure 4.34), remission (RR 4.43, 95% CI 1.74 to 11.29, k=2, N=91) (Figure 4.35) and global functioning (SMD -0.66, 95% CI -1.08 to -0.24, k=2, N=91) (Figure 4.36) (confidence in the evidence was very low).

For the one program that compared cCBT to face to face CBT (Camp Cope-A-Lot), cCBT had a similar effect on self-rated anxiety, clinician-rated anxiety, remission and global functioning compared with face-to-face CBT (Figure 4.37, Figure 4.38, Figure 4.39, Figure 4.40). At 6 month follow-up, cCBT had a similar effect on self-rated anxiety and remission (Figure 4.41, Figure 4.43) but had a large effect compared to face to face CBT on clinician-rated anxiety (Figure 4.42) (confidence in the evidence was low).

Investigation into heterogeneity

Since there appeared to be variation in the degree of therapist input in studies of cCBT, for the main outcome measures, studies were sub-grouped by the degree of therapist input.

For programs aimed at anxiety disorders in young people and young adults, all studies were considered to have a moderate level of therapist input (Figure 4.44). For programs aimed at depression in young people and young adults, half of the studies were considered to have had minimal therapist input and half were considered to have had moderate therapist input (Figure 4.45). There were larger effects for studies with moderate compared to minimal therapist input and 82% of the difference between subgroups could not be explained by random variation (I^2 for sub-group differences 82%).

For programs aimed at anxiety disorders in children, one study had moderate therapist input and one was considered to have high (major) therapist input (Figure 4.46). There were similar effects for moderate and major therapist input studies and all of the difference between subgroups could be explained by random variation (I^2 for sub-group differences 0%).

4.1.5 Evidence summary

Programs for young people or young adults

Programs aimed at depression or anxiety and depression

There was low quality evidence that, in populations with a diagnosis of depression or assessed as high risk on a depression scale, cCBT programs improved self and clinician-rated depression compared with waitlist control There was low quality evidence of improved rates of remission, but the evidence for this outcome was inconclusive. There was low quality evidence that was inconclusive as to the benefit of cCBT at 3 month follow-up.

Compared with face-to-face therapy (CBT or counseling)), there was low quality evidence that suggested that cCBT had similar effects on clinician-rated depression, remission and global functioning, but the evidence was inconclusive. There was low quality evidence that suggested that face-to-face therapy was better than cCBT for self-rated depression, but the evidence was inconclusive.

There was moderate quality evidence that, in general populations, cCBT improved self-rated depression at post-treatment and 6 month follow-up.

Programs aimed at anxiety or anxiety and depression

There was low quality evidence that, in populations with a diagnosis of an anxiety disorder or assessed as high risk on an anxiety scale, cCBT programs improved self and clinician-rated anxiety severity and global functioning compared with waitlist control. There was low quality evidence of an improvement in rates of remission, but the evidence of efficacy for these outcomes was inconclusive.

Compared with face-to-face CBT, there was very low quality evidence suggesting that cCBT and face-to-face CBT had similar effects on self-rated anxiety and low quality evidence of similar effects on clinician-rated anxiety, remission and global functioning, but the estimates of effect were imprecise. At 12 month follow-up, there was also low quality evidence suggesting that these outcomes were similar, but the estimates of effect were imprecise.

There was moderate quality evidence that, in general populations, cCBT improved self-rated anxiety at post-treatment and 6 month follow-up.

Programs aimed at social anxiety

There was low quality evidence that, in a population diagnosed with social anxiety disorder, cCBT improved self-rated social anxiety and depression compared with waitlist control. There was low quality evidence that was inconclusive as to whether cCBT improved quality of life.

Programs for children

Programs aimed at anxiety

In populations with a diagnosis of an anxiety disorder or assessed as high risk on an anxiety scale, there was low quality evidence that was inconclusive as to the benefit of cCBT for self-rated anxiety compared with computer-assisted education or waitlist control. There was very low quality evidence that cCBT improved clinician-rated anxiety severity, remission and global functioning.

Compared with face-to-face CBT, there was low quality evidence suggesting that cCBT and face-to-face CBT had similar effects on self and clinician-rated anxiety, remission and global functioning at post-treatment and 6 month follow-up, but the estimates of effect were imprecise.

4.2 VIDEO CONFERENCING INDIVIDUAL CBT

4.2.1 Introduction

As CBT is an effective approach to some childhood mental health issues, it is clearly important to assess whether similar effectiveness can be maintained using video conferencing methods. Although the specific methods of CBT vary according to the specific disorder being treated, the model shares a number of common features (Fuggle et al, 2012). CBT is nevertheless a theory-driven form of psychotherapy that has a distinctive overarching treatment strategy and employs certain specific treatment procedures. The strategy and procedures differ from disorder to disorder and their implementation is tailored to the particular needs of the individual patient.Although carrying out CBT by video link may impact on some aspects of the practice (e.g. the young person showing the therapist a completed paper diary) there is no theoretical reason why this highly structured approach could not be delivered using a video conferencing link. It is recognised that working through a video link is likely to reduce therapist sensitivity to more subtle social behaviours and cues which may be more obvious in the presence of the young person.

For young people, the approach has more similarities with adult forms of CBT in that the majority of the sessions are likely to be with the identified individual client. For children, particularly those under eight years of age, the more common approach is to include parents in the treatment. This can be done in a number of different ways such as by having sessions with the parent and child together for all or most of the appointments or with some approaches working almost entirely with the parent (e.g. Creswell and Cartwright Hatton 2007). Even for young people, the inclusion of parents in some of the sessions is often appropriate especially where this is consistent with the clinical formulation. In considering video conferencing CBT, the use of video conferencing of sessions will include both the parent and the child according to the intervention being offered.

4.2.2 Included studies

One study investigated the use of video conference CBT for depression (Nelson et al, 2006). 38 children aged 8-14 years with depression (met DSM-IV criteria) were randomised to receive CBT delivered via video conference or face-to-face therapy. Sessions were given to children with their parents present once a week for 8 weeks and post-treatment assessment was conducted at 8 weeks. Study characteristics are shown in Appendix 10 (Table 17).

4.2.3 Outcomes

All reported outcomes are presented in this review.

4.2.4 Quality of the evidence

The study was associated with some risk of bias due to unclear presence of provider and outcome assessor blinding and attrition. The number of participants was small and, overall, the evidence was graded as low quality for all outcomes (Appendix 12, Table 4.18).

4.2.5 Findings

Compared with face-to-face CBT, video conference CBT had a medium effect on self-rated depression (SMD -0.54, 95% CI -1.29 to 0.22; k=1, N=28), but the estimate of effect was imprecise (Figure 4.47). For clinician-assessed rates of remission, a greater number of patients were assessed as being free of depression at post-treatment for video conference CBT (RR 1.30, 95% CI 0.91 to 1.87; k=1, N=28), but the estimate of effect was imprecise (Figure 4.48).

4.2.6 Evidence summary

In children diagnosed with depression, there was low quality evidence from one study that was inconclusive but suggested that CBT delivered via video conference was as good as face-to-face CBT for symptoms of depression and rates of remission.

4.3 ONLINE GROUP CBT

4.3.1 Introduction

Group CBT for depression uses the same CBT principles as individual CBT for depression. The evidence for individual CBT for depression has produced mixed results with earlier studies being more positive than those conducted more recently (Weisz et al, 2006) and one recent study (Weisz et al, 2009) showing that CBT was no better than routine clinical care although it was briefer. As with individual CBT for depression, group CBT focuses on the role of reduced physical and social activity and internal negative cognitions on maintaining negative mood states. In CBT, even when effective, the precise mechanisms that promote change are not well understood

(DeRubeis et al, 1990) and there are few studies of change mechanisms with respect to young people. Publications from the Treatment for Adolescents with Depression Study (TADS) suggest that increased problem solving skills (Becker-Weidman 2010), increased physical activity (Jerstad et al, 2010) and readiness to change (Lewis et al, 2009) were related to improved outcome.

Group CBT has been developed primarily in the United States as a way of delivering an effective intervention at reduced cost compared with individual therapy. The most comprehensively researched of these programs (Coping with Depression; CWD) is the approach developed by Clarke, Lewisohn and colleagues (Cuipers et al 2009). This approach includes an initial focus on psycho-education about depression and then identifies skills to cope more effectively with depressive symptoms and vulnerability. Group CBT for depression may be more easily adapted to online delivery than individual CBT for depression as, for individuals participating in group CBT, the individual treatment is more organised around setting goals and practising skills relevant to those goals than being organised around an individual formulation. Goal setting may be easier to do using online materials than developing individual situational or onset formulations which may be more dependent of specific therapist input. Similarly, the Group CBT material around psycho-education for depression and for improved coping skills can be readily adapted for online presentation.

Studies of the effectiveness of group based CBT treatment of young people suggest that the intervention is effective both for preventing depression (Garber et al 2009) and for treatment of the disorder. However a recent universal prevention trial of a classroom based approach of CBT showed no benefit compared with matched attention controls (Stallard et al 2012). The mechanisms of change are likely to have some similarities with individual CBT (e.g. improved problem solving) but it is likely that the process of being part of a peer group with similar experiences and problems also plays an important role. Such processes may be particularly prominent in adolescence where peer groups are often seen as a source of authentic knowledge and experience about the world more readily than adults or parents. What is less clear is the degree to which such group processes can be replicable using an online medium of interaction. However, the almost universal popularity of virtual social networking for this age group would suggest that some social needs are being effectively addressed in this way.

4.3.2 Included studies

One study assessed the use of online group CBT for depression (Vanderzanden et al, 2012). 244 young adults aged 16-25 years with depressive symptoms (CES-D score between 10 and 45) were randomised to receive guided online group CBT (Master Your Mood) or to a wait-list control. In Master Your Mood, one or two therapists facilitated online forums where groups of fewer than six participants (minimum group number NR) were shown course materials and given opportunities to respond with comments or questions and set homework between sessions. There were 6 weekly 90 minute sessions. Post-treatment assessment was conducted after 12 weeks (follow-up

assessment was at 24 weeks but only in the Master Your Mood group). Study characteristics are shown in Appendix 10 (Table 17).

4.3.3 Outcomes

The study reports outcomes of self-rated anxiety and depression and findings are presented here. Mastery of use was reported but this was not considered to be a mental health outcome and is not reported in this review.

4.3.4 Quality of the evidence

The study was not downgraded for risk of bias but, due to the use of a waitlist control group, outcomes were downgraded for indirectness. Sample sizes were small and overall all outcomes were graded as low quality evidence (Appendix 12, Table 4.19).

4.3.5 Findings

Compared with the waitlist control, Master your Mood had a large effect on self-rated depression (SMD -0.84, 95% CI -1.1 to -0.58, k=1, N=244) (Figure 4.49) and a medium effect on self-rated anxiety (SMD -0.66, 95% CI -0.92 to -0.40, k=1, N=244) (Figure 4.50). A greater proportion of participants had a clinically significant change in symptoms of depression for Master Your Mood (RR 2.88, 95% CI 1.95 to 4.26; k=1, N=244) (Figure 4.51).

4.3.6 Evidence summary

In young adults with symptoms of depression, there was low quality evidence from one study that online group CBT (Master your Mood) improved self-rated depression and anxiety.

4.4 ONLINE SUPPORT GROUP FORUM

4.4.1 Introduction

The common use of virtual social networking by children and young people may provide further potential for benefit through the use of online peer support groups.

4.4.2 Included studies

One study assessed the used of an unmoderated online peer support group for anxiety and depression (Ellis et al, 2011). Thirty nine students aged 18-25 years with low to moderate psychological distress were randomised to MoodGarden, cCBT (MoodGYM) or a no treatment control. MoodGarden is a website with information and tools for self-management of anxiety and depression. There is an online support group forum where participants post messages for discussion. The support group element was the primary intervention promoted in this study and participants were encouraged to make at least two postings each time they logged on (instructed to use it for 60 minutes in three

weekly sessions). Post-treatment assessment was conducted at 3 weeks. Study characteristics are shown in Appendix 10 (Table 17).

4.4.3 Outcomes

The study reports outcomes of self-rated anxiety, depression and negative thoughts and findings are presented here. Knowledge and perceived support were also reported but these were not considered to be mental health outcomes and are not reported in this review.

4.4.4 Quality of the evidence

The study was not downgraded for risk of bias but, due to the presence of a therapist with the student whilst they went on the online forum during this study, outcomes were downgraded for indirectness. The sample size was small and overall all outcomes were graded as low quality evidence (Appendix 12, Table 4.20).

4.4.5 Findings

Compared with the no treatment control, MoodGarden had a medium effect on self-rated depression (SMD -0.60, 95% CI -1.39 to 0.19; k=1, N=26) (Figure 4.52) and automatic negative thoughts (SMD -0.61, 95% CI -1.40 to 0.18; k=1, N=26) (Figure 4.53), but the estimates of effect were imprecise. MoodGarden had a large effect on self-rated anxiety (SMD -0.92, 95% CI -1.74 to -0.11, k=1; N=26) (Figure 4.54).

4.4.6 Evidence summary

In young adults with low to moderate psychological distress, there was low quality evidence from one study that an online support group forum and information website (MoodGarden) improved self-rated anxiety but was inconclusive as to its benefit for depression and negative thoughts.

4.5 COMPUTER-BASED PROBLEM SOLVING THERAPY

4.5.1 Introduction

Problem solving therapy, the identification of fundamental life aims, construction of strategies to achieve those aims and adaption to accept life factors that cannot be changed, has been used for the treatment of anxiety and depression (Cuijpers et al, 2007; Malouff et al, 2007). Internet-based problem solving therapy may provide a helpful form of therapy that can be easily accessed by children and young people.

4.5.2 Included studies

One study investigated the use of computer-based problem solving therapy (cPST) for anxiety and depression (Hoek et al, 2012). 45 young people and young adults aged 12-21 years with mild/moderate anxiety and/or depression (CES-D score <40, HADS-A

score <14, no lower limit applied) were randomised to receive cPST or to a wait-list control. cPST involved participants reading online content about problem solving therapy and completing exercises in relation to this content, such as devising problem-solving strategies and developing plans for solutions. Feedback on completed exercises was given by mental health professionals and the authors. Sessions were provided once a week for 5 weeks. Post-treatment assessment was conducted at 5 weeks and follow-up assessment was conducted 4 months after baseline. Study characteristics are shown in Appendix 10 (Table 17).

4.5.3 Outcomes

Outcomes of depression and anxiety were reported in the study and these outcomes are presented here.

4.5.4 Quality of the evidence

The study was associated with some risk of bias due to the high rate of participant attrition. Although intention-to-treat analysis was used, this may have introduced bias. A waitlist control group was used and this, together with risk of bias, contributed to down grading the quality of the evidence. The number of participants was small and overall the evidence was graded as low quality for all outcomes (Appendix 12, Table 4.21).

4.5.5 Findings

Compared with the waitlist control, at post-treatment, cPST had a similar effect on self-rated depression (SMD -0.04, 95% CI -0.63 to 0.54; k=1, N=45) (Figure 4.55) and anxiety (SMD 0.12, 95% CI -0.46 to 0.71; k=1, N=45) (Figure 4.56) and, at follow-up, cPST had a similar effect on self-rated depression (SMD 0.04, 95% CI -0.55 to 0.62; k=1, N=45) (Figure 4.57) and anxiety (SMD -0.16, 95% CI -0.74 to 0.43; k=1, N=45) (Figure 4.58).

4.5.6 Evidence summary

In young people and young adults with mild to moderate anxiety or depression, at post-treatment and follow-up, there was low quality evidence that suggested that cPST and the waitlist control had similar effects on depression and anxiety.

4.6 ATTENTION BIAS MODIFICATION AND COGNITIVE BIAS MODIFICATION OF INTERPRETATION

4.6.1 Introduction

Cognitive behavioural models of anxiety disorders and depression emphasise the role of information processing biases in the maintenance of these disorders, and particular research attention has focussed on attention and interpretation biases.

With regards to attention biases, a tendency to preferentially attend to disorder relevant stimuli in the environment is hypothesised to exacerbate symptoms in response to stress (Beck & Clark, 1997; Teasdale, 1988). In support of this theory, highly anxious, compared with low anxious, adults show vigilance to angry faces (threat stimuli) relative to neutral faces (Bar Haim et al, 2007), and depressed adults show a similar vigilance towards sad faces (Gotlib et al, 2004). Attentional biases have also been examined among children and young people,however, findings to date have been somewhat inconsistent. Some studies have found that highly anxious young people attend preferentially to threat (Roy et al., 2008), and others have found that they attend away from threat (Monk et al., 2006). Recent findings have suggested that whether children attend to or away from threat stimuli may vary between specific anxiety and mood disorders (Salum et al, 2013).

On the basis of the findings with adult populations, Attention Bias Modification (ABM) procedures were developed to train individuals to develop an attentional bias away from negative stimuli or towards positive stimuli, and hence reduce symptoms of anxiety or depression (MacLeod et al, 2002). ABM was initially developed in a single session to test the causal relationship between attentional biases and anxiety. It has more recently been translated in to multisession procedures with clinical populations with some promising results (Hakamata et al, 2010). More recently, ABM has also been applied with populations of children and young people (Bar Haim et al, 2011).

ABM procedures have commonly been based on dot-probe methods (MacLeod, Mathews, & Tata, 1986; Mogg & Bradley, 1999). This involves participants having to respond (e.g. press a button) whenever a 'probe' symbol appears on the screen. The probe appears after two stimuli (e.g. an angry face and a neutral face) have been presented. Participants are trained to attend away from threat by repeated presentation of the probe in the same location that the neutral stimuli were presented, thus drawing their attention to the non-threat stimuli over a series of trials (Bar Haim et al. 2011). Alternative methods include presenting a matrix of picture stimuli, and asking participants to identify particular type of stimuli (e.g. happy faces) as quickly as possible over a number of trials (Waters et al, 2013).

Interpretation biases also play a central role in theories of the maintenance of anxiety disorders and depression. Experimental studies with adult populations have suggested that negative interpretation of ambiguous situations is associated with and may be causally linked to anxiety symptoms (Mathews & MacLeod, 2005). There is also support for cross-sectional associations between negative interpretations and anxiety among children and young people, although a causal role has not yet been established (e.g. Muris, 2010)

On the basis of the findings with adult populations, procedures to modify interpretation biases (Cognitive Bias Modification: Interpretation; CBM-I) were developed to train benign interpretations of ambiguous scenarios. As for ABM, CBM-I was originally

developed as a single session training paradigm, however multisession interventions have also been developed and administered with clinical populations (e.g. Amir & Taylor, 2005). More recently CBM-I has been applied with children and young people. Training programs for children and young people typically involve presenting a series of sentences describing ambiguous situations followed by a word fragment that resolves the scenario in a positive way. Participants have to identify the word fragment by typing a missing letter (e.g. Fu et al., 2013).

4.6.2 Included studies

Nine studies of ABM and/or CBM-I were eligible for inclusion in the review. For two studies, results were presented in a form that could not be utilised for meta-analysis (Britton et al, 2013 & Eldar et al, 2012). In these cases, authors were contacted but no response was obtained, therefore these studies were excluded from the review. For the seven included studies, two were of ABM in children with mixed anxiety disorders (Bar-Haim et al, 2011 and Waters et al, 2013), one of ABM in young people and young adults with diagnosed depression (Micco 2013), one of CBM-I in young people with generalised or social anxiety disorders (Fu et al, 2013), one of ABM in young adults with symptoms of social anxiety disorder (Li et al, 2008), one of CBM-I in a general population of young people(with the aim of reducing symptoms of social anxiety) (Salemink et al, 2011) and one of combined ABM and CBM-I in young people with low level social anxiety disorder or high test anxiety (Sportel et al, 2013) .

Study characteristics

In ABM studies, the dot probe task was used and individuals were trained to select non-threatening faces from amongst threatening faces. In the CBM-I study, a sentence completion task was used where participants had to complete sentences in a way that made them positive in order to proceed. Study characteristics for individual studies are shown in Appendix 10 (Table 17).

4.6.3 Outcomes

Studies report outcomes such as anxiety, depression and social anxiety and these are reported here. Some studies report training outcomes i.e. measures of improvement on tests that are being used to reduce participants attention bias. Since these were not considered to be mental health outcomes, they are not reported in this review.

4.6.4 Quality of the evidence

Some outcomes were downgraded for risk of bias, commonly due to a lack of assessor blinding for clinician-rated outcomes in some studies. Most studies used neutral training (similar training to ABM/CBM-I without bias modifying element) as the control group and were completed independently by participants and most outcomes were not downgraded for indirectness. Sample sizes were small and all outcomes were downgraded for imprecision. Some outcomes were downgraded for indirectness, where

studies assessed outcomes directly after a single session of treatment. Outcomes were graded as moderate or low quality evidence (Appendix 12, Table 4.22).

4.6.5 Findings

In children with mixed anxiety disorders, compared with neutral training, ABM had a similar effect on self-rated anxiety symptoms (SMD -0.19, 95% CI -0.69 to 0.32, k=2, N=68) (I^2 9%) (Figure 4.59) (confidence in the evidence was moderate) and parent-rated anxiety symptoms (SMD 0.19, 95% CI -0.49 to 0.86, k=1, N=34) (Figure 4.60) (confidence in the evidence was low). ABM had a large effect on clinician-rated anxiety severity (SMD -0.95, 95% CI -1.66 to -0.23, k=1, N=34) (Figure 4.61) and, for clinician-rated mean number of anxiety disorders, ABM had a medium effect (SMD -0.67, 95% CI -1.36 to 0.03, k=1, N=34) (Figure 4.62), but the estimate of effect was imprecise (confidence in the evidence was low). For depression symptoms, ABM had a small negative effect, but the estimate of effect was imprecise (SMD 0.42, 95% CI -0.06 to 0.91, k=2, N=68) (Figure 4.63) (confidence in the evidence was moderate).

In young adults with social anxiety disorder, compared with neutral training, ABM had a large effect on social anxiety symptoms at post-treatment (SMD -0.89, 95% CI -1.74 to -0.04, k=1, N=24) (Figure 4.64) (confidence in the evidence was low).

In young people with low level social anxiety disorder or high test anxiety, ABM/CBM-I had a similar effect on social anxiety compared to neutral training at post-treatment (SMD -0.05, 95% CI -0.36 to 0.27, k=1, N=156) (Figure 4.64) 12 month follow-up (SMD -0.15, 95% CI -0.47 to 0.17, k=1, N=156) (Figure 4.65). ABM/CBM-I had a small effect on test anxiety at post-treatment (SMD -0.25, 95% CI -0.56 to 0.07, k=1, N=156) (Figure 4.66) and 12 month follow-up (SMD -0.22, 95% CI -0.53 to 0.1, k=1, N=156) (Figure 4.67), but the estimates of effect were imprecise (all moderate quality evidence).

In young people with generalised or social anxiety disorders, compared to neutral training, CBM-I had a similar effect on self-rated anxiety (SMD 0.39, 95% CI -0.37 to 1.15, k=1, N=28) (Figure 4.59) (confidence in the evidence was low).

In a general population of young people, compared to neutral training, CBM-I had a similar effect on self-rated anxiety (SMD 0.12, 95% CI -0.20 to 0.45, k=1, N=148) (Figure 4.59) (confidence in the evidence was low).

In young people with diagnosed depression, compared with neutral training, CBM-I had a similar effect on self-rated anxiety (SMD -0.18, 95% CI -0.76 to 0.41, k=1, N=45) (Figure 4.59) and depression (SMD -0.10, 95% CI -0.69 to 0.48, k=1, N=45) (Figure 4.63) (confidence in the evidence was low).

4.6.6 Evidence summary

In children and young people with risk of/diagnosed anxiety, there was moderate quality evidence that was inconclusive as to the benefit of ABM on self-rated symptoms of anxiety. There was low quality evidence that was inconclusive as to the benefit of ABM on parent-rated symptoms of anxiety. There was low quality evidence that ABM improved clinician-rated anxiety. There was moderate quality evidence that was inconclusive but tended towards a negative effect of ABM on symptoms of depression. In young adults with social anxiety, there was low quality evidence that ABM improved social anxiety symptoms.

In young people with social or test anxiety, there was moderate quality evidence that was inconclusive as to the benefit of ABM/CBM-I on social or test anxiety symptoms at post-treament and 12 month follow-up.

In young people with generalised or social anxiety disorders, there was low quality evidence that was inconclusive as to the benefit of CBM-I on self-rated symptoms of anxiety.

In a general population of young people, there was low quality evidence that was inconclusive as to the benefit of CBM-I on self-rated symptons of anxiety.

In young people with diagnosed depression, there was low quality evidence that was inconclusive as to the benefit of CBM-I on self-rated symptoms of anxiety and depression.

4.7 SELF-MONITORING VIA MOBILE PHONES

4.7.1 Introduction

The common use of mobile phones by young people, and increasing use by children, provides opportunity for the use of mobile phone technology to treat issues of mental health. Monitoring has been shown to improve depression in children and young people (Stice et al, 2009) and the conversion to a mobile phone application may provide an accessible form of treatment.

4.7.2 Included studies

One study investigated the use of self-monitoring via mobile phones for depression (Mobiletype program – Mobile Tracking of Young People's Experiences) (Kauer et al, 2012). 118 young people and young adults aged 14-24 years with mild or moderate mental health difficulties (Kessler psychological distress scale score <16, or met criteria by GP assessment) were randomised to receive the Mobiletype program or to a non-therapeutic mobile phone use control. The program involved participants being prompted by the mobile phone at regular intervals throughout the day (auditory signal in the form of a beep) to enter information relating to eight areas of functioning,

including mood, recent stressful events and alcohol/cannabis use. The control group involved a similar data collection process; however entries into the mobile phone were assumed to have no therapeutic advantage e.g. current location, activities and diet. Mobile phone entries in both groups were then summarised into a report at the end of the self-monitoring period and reviewed with their GP. The authors suggest that regular self-monitoring of mental health symptoms is useful as a first step in tackling early signs of depression, as it allows individuals to increase their emotional self-awareness and in turn better understand their symptoms (Kauer et al, 2012). The authors also state that the GP review at the end of the monitoring period assists GPs in assessing whether a referral should be made for further interventions. Participants in both groups were prompted to complete at least two mobile entries per day for between 2 and 4 weeks (dependent on when their upcoming GP review was scheduled). Post-treatment assessment was conducted between 2 and 4 weeks after baseline and follow-up assessment was conducted between 8 and 10 weeks after baseline. Study characteristics are shown in Appendix 10 (Table 17).

4.7.3 Outcomes

The study reports outcomes of depression, anxiety and stress and results are presented here. Outcomes of rumination and emotional self-awareness were also reported in the study but were not considered to be mental health outcomes and are not reported in this review.

4.7.4 Quality of the evidence

The study was associated with some risk of bias due to unclear attrition bias and unclear presence of provider and outcome assessor blinding. The number of participants was small and, overall, the evidence was graded as low quality for all outcomes (Appendix 12, Table 4.23).

4.7.5 Findings

Compared with non-therapeutic mobile use, at post-treatment, Mobiletype had a similar effect on self-rated depression (SMD 0.11, 95% CI -0.33 to 0.55; k=1, N=83) (Figure 4.68), anxiety (SMD 0.08, 95% CI -0.36 to 0.52; k=1, N=83) (Figure 4.69) and stress (SMD 0.13, 95% CI -0.31 to 0.57; k=1, N=83) (Figure 4.70) (confidence in the evidence was low).

At 6 week follow-up, compared with non-therapeutic mobile use, Mobiletype had a similar effect on self-rated depression (SMD 0.09, 95% CI -0.34 to 0.52; k=1, N=85) (Figure 4.71), anxiety (SMD -0.06, 95% CI -0.50 to 0.37; k=1, N=85) (Figure 4.72) and stress (SMD 0.22, 95% CI -0.21 to 0.66, k=1, N=85) (Figure 4.73) (confidence in the evidence was low).

4.7.6 Evidence summary

In young people and young adults with mild to moderate anxiety or depression, at post-treatment and follow-up, there was low quality evidence that suggested that Mobiletype and non-therapeutic mobile phone use had similar effects on depression, anxiety and stress but findings were inconclusive.

4.8 CONCLUSIONS

There appears to be reasonable evidence to support the use of cCBT programs for mild to moderate depression in populations of young people with mental health problems and non-clinical/general populations and this may be a good candidate for further research and development. Evidence was mostly of low quality. In populations with mild to moderate mental health problems, there were improvements in symptoms of depression and studies comparing the use of cCBT for depression with face-to-face CBT or counselling provided evidence of plausible equivalence. In around half of the studies, participants received additional input from therapists and some uncertainty remains around the efficacy of programs in settings where there is no therapist input. However, a general population study was conducted with no additional therapist input and showed moderate quality evidence of improvements in depression. The size of improvements is likely to be small, but may be clinically significant.

There is some support for cCBT programs for anxiety in general populations of young people and in young people with mental health problems and this may be a good candidate for further research and development. There was evidence from one general population study with no therapist input that provided moderate quality evidence of reduced rates of anxiety although the size of the improvement was small.There was low quality evidence of efficacy in populations with mental health problems but all of these studies were conducted with some degree of therapist input and the efficacy of programs for anxiety in MH populations without therapist input is less clear.

There is currently insufficient evidence to support the use of cCBT for children with anxiety. Although there was low quality evidence of plausible equivalence from one study comparing cCBT with face-to-face therapy, the the quality of the evidence for all other outcomes showing efficacy was very low. In studies, programs were used with some or a high degree of therapist input and their independent effect is unclear.

There is currently insufficient evidence to support the use of online group CBT for depression. The evidence for came from a single study and was of low quality. However, this intervention shows promise and this may be a good candidate for further research.

There is currently insufficient evidence to support the use of cCBT for social anxiety, online support group for anxiety and depression and video conference CBT for depression. All these interventions showed efficacy but the evidence came from single

small studies and was of low quality. Further research would be needed to confirm their efficacy.

The evidence does not currently support the use of cPST for anxiety and depression and a mobile phone application for depression. For these interventions findings came from single small studies and were inconclusive.

The evidence does not currently support the use of computerised ABM or CBM-I for anxiety, depression or social or test anxiety. The evidence did not show consistent benefits of intervention and, where benefits were observed, the evidence was of low quality.

5 PHOBIA

5.1 COMPUTER-BASED EXPOSURE

5.1.1 Introduction

Exposure-based treatments are effective for children and young people with specific phobias (Ollendick & Thompson, 2012). While treatment packages commonly include other treatment components (such as cognitive restructuring and modelling), a central component is typically the gradual introduction of increasingly fearful stimuli following a fear hierarchy developed between the young person and the therapist. The aims of exposure are generally considered to be: (i) to elicit fear so that negative expectations can be activated and modified; (ii) to create an opportunity for fear to habituate; and (iii) to prevent avoidance of feared stimuli in a controlled environment (Zlomke & Davis, 2008).

Computerised exposure-based treatments have been developed for spider phobias in children and young people. Typically, these involve young people being provided with instruction on the principles of exposure to overcome fears, and then being presented with pictorial stimuli to represent increasingly fear inducing situations (for example, a person having contact with a plastic spider, a dead spider and a live spider) (Dewis et al, 2001).

5.1.2 Included studies

One study investigated the use of computer-based exposure for children and young people with spider phobia (Muris et al, 1998). 26 children and young people aged 8-17 with spider phobia (met diagnostic criteria for simple phobia on the Diagnostic Interview Schedule for Children-Revised (DISC-R)) were randomised to receive computer-based exposure, exposure in vivo or eye movement desensitization and reprocessing (EMDR) treatment. The computer-based exposure involved presenting participants with a hierarchy of spiders ranging from low-fear potential (small, stationary cartoon spider) to high-fear potential (large free-moving tarantula) on a computer screen. A similar procedure was used in the in-vivo condition, but delivered by a live therapist. The EMDR condition involved an attempt to desensitise participant's fears of spiders by asking them to imagine a spider, and any negative cognitions and anxieties associated with that image, whilst simultaneously instructing participants to complete a series of horizontal rapid eye movements. The aim was that after several repetitions of this process, the negative cognitions would become weakened. All conditions involved single session treatments, lasting for 2.5 hours. Post-treatment assessment was conducted immediately after treatment.

5.1.3 Outcomes

The study reports outcomes of self-rated fear of spiders, researcher-rated avoidance of spiders and researcher-rated anxiety these are reported here. Non-verbal fear of spiders and state anxiety were also reported. Since these outcomes are similar to outcomes that are already included in the review, they are not reported here.

5.1.4 Quality of the evidence

Outcomes were downgraded for some risk of bias. Bias included: unclear provider and assessor blinding and unclear randomisation/allocation concealment. Outcomes were downgraded for indirectness as participants completed assessments immediately after the intervention. With relation to imprecision, all outcomes did not reach the optimum information size (N >400), hence the quality of the evidence was downgraded for this reason. Inconsistency was not applicable in this assessment as only one study was considered.

5.1.5 Findings

Computer-based exposure vs. In vivo exposure

Compared with computerised exposure, in vivo exposure had a large effect on self-rated fear of spiders (SMD 1.14, 95% CI 0.09 to 2.18, k=1, N=17) (Figure 5.1) and researcher-rated avoidance of spiders (SMD -1.05, 95% CI -2.08 to -0.02 k=1, N=17) (Figure 5.2) (confidence in the evidence was very low). In vivo exposure had a large effect on researcher-rated anxiety (SMD 0.91, 95% CI -0.10 to 1.93, k=1, N=17), but the estimate of effect was imprecise (Figure 5.3) (confidence in the evidence was very low).

Computer-based exposure vs. EMDR

Compared with the EMDR control, computer exposure had a similar effect on self-rated fear of spiders (SMD -0.01, 95% CI -0.96 to 0.94, k=1, N=17) (Figure 5.4) and researcher-rated avoidance of spiders (SMD 0.06, 95% CI -0.90 to 1.01, k=1, N=17) (Figure 5.5) (confidence in the evidence was very low). There was a medium effect in favour of EMDR for researcher-rated anxiety (SMD 0.47, 95% CI -0.50 to 1.44, k=1, N=17), but the estimate of effect was imprecise (Figure 5.6) (confidence in the evidence was very low).

5.1.6 Evidence summary

Computer-based exposure vs. In vivo exposure

There was very low quality evidence that in vivo exposure reduced fear of spiders and avoidance of spiders, compared with computer-based exposure. There was

very low quality evidence that in vivo exposure reduced anxiety, compared with computer-based exposure, but the evidence was inconclusive.

Computer-based exposure vs. EMDR

There was very low quality evidence that was inconclusive as to the benefit of computer-based exposure compared with EMDR on fear of spiders, avoidance of spiders and anxiety.

5.2 COGNITIVE BIAS MODIFICATION OF INTERPRETATION

5.2.1 Introduction

Cognitive Bias Modification has been used for the treatment of mixed anxiety disorders and depression (see section 4.6.1) and has also been applied for the treatment of phobia.

5.2.2 Included studies

One study investigated the use of CBM-I on symptoms of phobia in young adults with elevated fear of spider scores on the Fear Survey Schedule-III (Teachman et al, 2008). 61participants were randomised to a single 40 minute session of CBM-I, a single 40 minute session of neutral training or to no training. Post-treatment assessment was conducted immediately after treatment.

5.2.3 Outcomes

Data was obtained from authors for self and clinician-rated fear or avoidance of spiders and these are reported here.

5.2.4 Quality of the evidence

Outcomes were downgraded for imprecision. Although blinding was not achieved in this study, the control group (neutral training) was similar to the intervention in most respects and provided some protection against performance bias. However, outcomes were downgraded for indirectness as participants completed assessments immediately after the intervention. All outcomes were graded as low quality evidence.

5.2.5 Findings

Compared to neutral training, CBM-I had a similar effect on self-rated fear of spiders (SMD -0.14, 95% CI -0.76 to 0.48, k=1, N=40) (Figure 5.7) and clinician-rated avoidance of spiders (SMD -0.05, 95% CI -0.69 to 0.58, k=1, N=40) (Figure 5.8) (confidence in the evidence was low).

5.2.6 Evidence summary

There was low quality evidence that was inconclusive as to the benefit of CBM-I on self-rated fear and clinician-rated avoidance of spiders.

5.3 CONCLUSION

The evidence does not currently support the use of computerised exposure for spider phobia in children and **young people**. Evidence was inconclusive and of very low quality.

The evidence does not currently support the use of CBM-I for spider phobia in young adults. Evidence was of low quality and inconclusive.

6 OBSESSIVE COMPULSIVE DISORDER

6.1 VIDEO CONFERENCING

6.1.1 Introduction

Obsessive compulsive disorder (OCD) involves repetitive, disabling, intrusive thoughts or behavioural rituals associated with anxiety. It is relatively rare, with a population prevalence of probably less than 0.25% (Heyman et al, 2001). Prevalence, however, increases rapidly with age, but probably less than 15% of affected young people find their way to specialist children's services. To some degree, this may reflect the secretiveness and lack of desire to change associated with this sometimes crippling condition. It also reflects insufficient awareness of effective treatments which now exist. Without treatment, long-term outcomes are poor and the disorder is likely to persist into adulthood in about half of cases.

Cognitive behavioural therapy (CBT) for childhood OCD was initially an extension of treatments developed for adults. Parents or other family members may be involved, for example, where parents help children or young people to resist rituals or avoidance or by engaging as a 'co-therapist'. In meta-analyses, CBT has been shown to be superior to both active treatments and placebo, and most professional and statutory guidance now indicates CBT as the treatment of choice (NICE, 2006). However, a substantial proportion of patients do not respond to treatment or remain symptomatic despite some gains. A combination of selective serotonin reuptake inhibitor antidepressants (SSRIs) and CBT has been shown to be the treatment of choice in two large studies in the US (The Paediatric Obsessive-Compulsive Disorder Treatment Study I and II) (POTS and POTS-II) (The POTS team 2004; Franklin et al, 2011).

The participation of clinicians via video conferencing may be a useful alternative to face-to-face sessions. As the treatment frequently involves persuasion on the part of the therapist for the young person to engage in activity that they find profoundly anxiety-provoking, it is an open question as to whether the physical presence of the clinician is an essential element of treatment.

6.1.2 Included studies

One study investigated the use of video conference CBT for treating patients with OCD (Storch et al, 2011) (Appendix 10, Table 17). Thirty-one children and young people aged 7-16 years with OCD (met DSM-IV criteria) were randomised to receive family-based CBT delivered via video conference or to a waitlist control. 14 sessions (of 60-90 minutes) were given over 12 weeks. Post-treatment assessment was

conducted at 12 weeks in the intervention group and at 4 weeks in the control group. Follow-up was conducted at 24 weeks but only in the intervention group and no comparative data is available.

6.1.3 Outcomes

Outcomes reported were symptoms of OCD, anxiety and depression as well as rates of remission, global functioning and families' involvement in OCD management. Results for child behavioural outcomes (all outcomes except family involvement) are presented here.

6.1.4 Quality of the evidence

Due to some risk of bias and a sample size that did not reach the optimal information size, outcomes from the study were graded as low quality evidence (Appendix 12, Table 6.1).

6.1.5 Findings

Compared with the waitlist control, video conference CBT had a similar effect on self-rated anxiety (SMD 0.18, 95% CI -0.53 to 0.88, k=1, N=31) (Figure 6.5). There was a small effect in favour of the control for self-rated depression (SMD 0.29, 95% CI -0.42 to 1.00, k=1, N=31) (Figure 6.2), but the estimate of effect was imprecise. For clinician-rated outcomes, video conference CBT had a medium/large effect on symptoms of OCD (SMD -0.76, 95% CI -1.5 to -0.03, k=1, N=31) (Figure 6.3) and rates of remission (ADIS-IV-C/P ≤3 and CY-BOCS ≤10) (RR 4.22, 95% CI 1.08 to 16.45, k=1, N=31) (Figure 6.4). Video conference CBT had a medium effect on clinician-rated global functioning (SMD -0.57, 95% CI -1.29 to 0.15, k=1, N=31) (Figure 6.5), but the estimate of effect was imprecise.

6.1.6 Evidence summary

There is low quality evidence that CBT delivered by video conference improved symptoms of OCD and rates of remission when assessed by clinicians. There was low quality evidence of an improvement in clinician-rated global functioning but the finding was inconclusive. When assessed by participants, there was low quality evidence that was inconclusive as to the benefit of video conference CBT for symptoms of anxiety or depression.

6.2 COGNITIVE BIAS MODIFICATION OF INTERPRETATION

6.2.1 Introduction

Cognitive Bias Modification has been used for the treatment of mixed anxiety disorders and depression (see section 4.6.1) and has also been applied for the treatment of OCD.

6.2.2 Included studies

One study investigated the use of CBM-I for symptoms of OCD in young adults with elevated OCD symptoms on the Obsessive compulsive inventory - revised (Clerkin et al, 2011). 100 participants were randomised to a single session of CBM-I or a single session of neutral training. Post-treatment assessment was conducted immediately after treatment.

6.2.3 Outcomes

Outcomes of the Positive and Negative Affect scale (PANAS) - negative affect subscale and the Obsessional beliefs questionnaire - short form were reported and are presented here.

6.2.4 Quality of the evidence

Outcomes were downgraded for imprecision. Although blinding was not achieved in this study, the control group (neutral training) was similar to the intervention in most respects and provided some protection against performance bias. However, outcomes were downgraded for indirectness as participants completed assessments immediately after the intervention. All outcomes were graded as low quality evidence.

6.2.5 Findings

Compared to neutral training, CBM-I improved self-rated obsessional beliefs (SMD -0.51, 95% CI -0.91 to -0.12, k=1, N=100) (Figure 6.6) but had a similar effect on self-rated negative symptoms of OCD (SMD -0.23, 95% CI -0.63 to 0.16, k=1, N=100) (Figure 6.7) (confidence in the evidence was low).

6.2.6 Evidence summary

There was low quality evidence that CBM-I improved obsessional beliefs but was inconclusive as to its benefit on self-rated negative symptoms of OCD.

6.3 CONCLUSION

The evidence does not currently support the use of video conference CBT for children and young people with OCD. Clinician-rated outcomes show efficacy but the evidence was of low quality and findings for self-reported outcomes were inconclusive.

The evidence does not currently support the use of CBM-I for young people with OCD. Findings for obsessional beliefs were favourable but findings were inconclusive for negative effect on the PANAS scale and the evidence was of low quality.

7 POST-TRAUMATIC STRESS DISORDER

7.1 COGNITIVE AND RESILIENCY THEORY WEBSITE

7.1.1 Introduction

Post-traumatic stress disorder (PTSD) is rare (incidence of 0.5% by the age of 16 years), although traumatic events for children are quite common (incidence in excess of 66% by the same age) (Copeland et al, 2007). Although children frequently develop some anxiety symptoms related to the event, these are rarely of a severity to meet diagnostic criteria. Maltreatment, including exposure to physical violence or sexual abuse, is the most common cause of PTSD (McLeer et al, 1992; Famularo et al, 1996). Symptoms include intense fear, helplessness, intrusive recollections, avoidance and numbing and hyperarousal. If an acute response does not resolve within 4 weeks of the traumatic event, PTSD is diagnosed and, if symptoms persist for 3 months or more, chronic PTSD is diagnosed.

A range of cognitive behavioural interventions have been developed to address the sequelae of trauma in children, of which the best established is trauma-focused CBT. This CBT model is also known as cognitive and resiliency theory. The model recognises the value of family and parental involvement in creating an environment for the young person that feels safe in order for them to expose and confront private thoughts and feelings associated with traumatic experiences. Trials show a moderate effect size for trauma-focused-CBT (see Cary and McMillen, 2012 for a review). The adaption of CBT for PTSD for use on the internet provides an accessible form of treatment that may or may not be effective.

7.1.2 Included studies

One study investigated the use of a website for treating participants with post-traumatic stress disorder (PTSD) (Cox et al, 2010) (Appendix 10, Table 20). 85 children and young people aged 7-16 years who had been hospitalised overnight following an unintentional injury were randomised to a cognitive and resiliency theory-based website or to a no treatment control. The website contained information and exercises to normalise and promote recovery using relaxation, coping statements, problem solving and by identifying personal strengths and reflecting on the event. Participants could access the website as often as they wished. Parents were sent a booklet with information on common child reactions and the time course and strategies for assisting the child's recovery and coping with their own distress. Assessments were conducted at 2-4 weeks and at 6 months (6 month outcome used for this review).

7.1.3 Outcomes

Results are reported for symptoms of anxiety, depression and post-traumatic stress and are presented here.

7.1.4 Quality of the evidence

Due to some risk of bias and a sample size that did not reach the optimal information size, outcomes from the study were graded as low quality evidence (Appendix 12, Table 7.1).

7.1.5 Findings

Compared with no treatment, the information website had a similar effect on anxiety (SMD -0.21, 95% CI -0.73 to 0.32; k=1, N=56), depression (SMD -0.14, 95% CI -0.67 to 0.38; k=1, N=56), posttraumatic stress (SMD -0.13, 95% CI -0.65 to 0.40; k=1, N=56) and overall trauma symptoms (SMD -0.23, 95% CI -0.76 to 0.29; k=1, N=56) (Figure 7.1).

7.1.6 Evidence summary

There was low quality evidence that was inconclusive as to the benefit of a cognitive resiliency theory-based website and parent information booklet for participants with PTSD for symptoms of anxiety, depression, post-traumatic stress and overall trauma.

7.2 CONCLUSION

The evidence does not currently support the use of a cognitive resiliency theory-based website for children and young people with PTSD. The evidence was from a single study and was inconclusive and of low quality.

8 EATING DISORDERS

8.1 INTRODUCTION

The eating disorders include anorexia nervosa, bulimia nervosa, binge eating disorder as well as variants of these states. With the exception of binge eating disorder, people with eating disorders have extreme concerns about body shape and weight that lead them to diet excessively and engage in other forms of extreme weight control behaviour (such as self-induced vomiting, laxative misuse and over-exercising). Some people also have recurrent episodes of loss of control over eating in which large amounts of food may be consumed (known as binges). In contrast, in binge eating disorder the problem is largely confined to recurrent binge eating, with extreme weight-control behaviour not being a feature.

Large studies carried out in the 1980s concluded that sociocultural influences, including the media, are playing an increasing role in defining body shape (Johnson et al., 1989). Since the time of these studies, the influence of the media, and particularly electronic media, has broadened – anti-dieting literature in magazines and on the internet has increased, and information and support for young people to overcome eating disorders has become more prominent (for example, http://www.b-eat.co.uk). However, less desirable are web-based media (including social networking sites frequented by young people) promoting eating disorder behaviour.

According to NICE (2004), the prevalence of anorexia is estimated to be between 0.5 and 1 per cent, while for bulimia nervosa estimated prevalences range from 1 to 3 per cent, with 90% of those diagnosed being female. Internationally, studies in the adolescent age group have reported prevalences ranging from 0 (Suzuki et al., 1990) to approaching 3% (Fairburn and Beglin 1990), depending on the sample and method of data collection.

There is conflicting evidence about the value of cognitive behaviour therapy relative to family therapy for anorexia (see Fonagy et al., in press, for a review). There is stronger evidence for CBT as a treatment for bulimia nervosa, where at least in some trials it has been found to be superior to family therapy immediately post-treatment, but on long-term follow-up the two interventions shows equivalent effectiveness (Schmidt et al., 2007).

8.2 COMPUTERISED COGNITIVE BEHAVIOURAL THERAPY WITH ONLINE DISCUSSION GROUP

8.2.1 Included studies

Four studies investigated the efficacy of a computerised cognitive behavioural therapy (cCBT) program combined with an online discussion group for Eating disorders (the Student Bodies program) (Winzelberg et al, 1998; Zabinski et al, 2001; Doyle et al, 2008 & Jones et al, 2008). The Student Bodies intervention consists of two key components: a computer-based interactive program and an online moderated group discussion board. The program is informed by cognitive-behavioural theory and predominantly aims to improve body image; it incorporates a variety of tasks including, self-assessment and personalised feedback, online journal-writing and homework assignments. The discussion board aspect of the intervention intends to provide participants with a forum in which they can discuss the contents of the computer program and offer support to one another. The board is moderated by a clinical psychologist or graduate psychology student, whose main role is to reflect on salient points of the discussion.

Study characteristics

All studies were aimed at preventing the development of an eating disorder. Winzelberg et al (1998) included young adults from the general population. One study included participants who were at risk of developing an eating disorder (Zabinski et al, 2001) and two studies included participants who were at risk of developing binge-eating disorder (BED) (Jones et al, 2008; Doyle et al, 2008). Participants were identified as at risk by screening with diagnostic tools or by self-reported symptoms of an eating disorder. The studies aimed at preventing BED used a modified Student Bodies program entitled SB2-BED, where the content of the program had a greater emphasis on symptoms related to BED, as opposed to general eating disorder symptoms. All studies compared Student Bodies to a waitlist control. See appendix 10, Table 21 for further study characteristics.

8.2.2 Outcomes

Restrictions were applied on outcome extraction so as to limit the number of outcomes reported in the review to key outcomes only.

Studies reported several subscales from the Eating Disorder Examination Questionnaire (EDE-Q) and the Eating Disorder Inventory (EDI). An expert in eating disorders from the EAG was consulted in order to decide which outcomes derived from the subscales were most valuable for the review. As a result, the subscales of: weight concerns, shape concerns and restraint from the EDE-Q, and the subscale of bulimia and drive for thinness from the EDI are reported. In addition, where EDE-Q and EDI subscales were available they were used over and above other measures,

for example, where a study may have reported the outcome of weight concerns using both the EDE-Q subscale and also the Weight Concerns Scale (WCS), only the EDE-Q data was analysed.

Some studies reported more specific outcomes in relation to their aims such as binge episodes for BED; therefore these outcomes are also reported. Some studies presented results for intervention-related outcomes e.g. knowledge of eating disorders that were not considered to be mental health outcomes and are not presented in the review.

8.2.3 Quality of the evidence

GRADE quality assessments are shown in Appendix 12, Tables 8.1-8.7.

For all outcomes, some risk of bias, together with some indirectness contributed to downgrading. Bias included: lack of participant blinding with only self-rated outcomes, no method used to account for participant attrition and unclear randomisation method/allocation concealment. Self-reported outcomes were considered at risk of bias because of their subjective nature and clear link with the objectives of the study. All studies used a waitlist control and this was considered to be a source of indirectness. With relation to imprecision, all outcomes did not reach the optimum information size (N >400), hence the quality of evidence was downgraded for imprecision. For some outcomes where study data was combined, there was some significant heterogeneity; therefore the quality of evidence was downgraded for inconsistency in these cases. Due to the small number of studies publication bias could not be formally explored (with a funnel plot) was not possible.

Student Bodies vs. Waitlist Control

Two studies investigated Student Bodies as an intervention to prevent the development of eating disorders. One study used a general population sample and the other used an at risk population. Findings are presented graphically in appendix 11 (Figures 8.1 to 8.9) and are subgrouped by population type (general population/at risk population). However, in the text below, findings for the population types combined are presented.

At post-treatment, there was a small effect in favour of the waitlist control compared to Student Bodies on self-rated global eating disorder symptomatology (SMD 0.20, 95% CI -0.31 to 0.70, k=1, N=61) (Figure 8.1) (confidence in the evidence was low), and self-rated restraint (SMD 0.20, 95% CI -0.31 to 0.70, k=1, N=61) Figure 8.2) (confidence in the evidence was low), but for both outcomes the the estimates of effect were imprecise. There was a similar effect for Student Bodies and the control for self-rated weight concerns (SMD 0.04, 95% CI -0.32 to 0.40, k=2, N=118), with no heterogeneity (I^2=0%, chi^2=0.05, df=1, p=0.83) (Figure 8.3) (confidence in the

evidence was low). There was a similar effect for Student Bodies and the control for self-rated shape concerns (SMD 0.16, 95% CI -0.20 to 0.52, k=2, N=118), with no heterogeneity (I^2=0%, chi^2=0.18, df=1, p=0.67) (Figure 8.4) (confidence in the evidence was low) and self-rated drive for thinness (SMD -0.05, 95% CI -0.41 to 0.31, k=2, N=118), with no heterogeneity (I^2=0%, chi^2=0.79, df=1, p=0.37) (Figure 8.5) (confidence in the evidence was low). There was a similar effect for Student Bodies and the control for self-rated bulimia (SMD 0.06, 95% CI -0.53 to 0.65, k=2, N=118), with substantial heterogeneity (I^2=62%, chi^2=2.65, df=1, p=0.10) (Figure 8.6) (confidence in the evidence was very low).

At 5-6 month follow-up, there was a similar effect for Student Bodies and the control for self-rated global eating disorder symptomatology (SMD 0.09, 95% CI -0.44 to 0.61, k=1, N=56) (Figure 8.7) (confidence in the evidence was low) and self-rated restraint (SMD 0.00, 95% CI -0.52 to 0.52, k=1, N=56) (Figure 8.8) (confidence in the evidence was low)**.** There was a similar effect for Student Bodies and the control for self-rated weight concerns (SMD 0.12, 95% CI -0.25 to 0.49, k=2, N=113), with no significant heterogeneity (I^2=0%, chi^2=0.06, df=1, p=0.80) (Figure 8.9) (confidence in the evidence was low), shape concerns (SMD 0.12, 95% CI -0.25 to 0.49, k=2, N=113), with no significant heterogeneity (I^2=0%, chi^2=0.07, df=1, p=0.79) (Figure 8.10) (confidence in the evidence was low) and drive for thinness (SMD -0.03, 95% CI -0.40 to 0.34, k=2, N=113), with no significant heterogeneity (I^2=0%, chi^2=0.23, df=1, p=0.63) (Figure 8.11) (confidence in the evidence was low). There was a similar effect for Student Bodies and the control for self-rated bulimia (SMD 0.16, 95% CI -0.66 to 0.98, k=2, N=113), with considerable heterogeneity (I^2=79%, chi^2=4.81, df=1, p=0.03) (Figure 8.12) (confidence in the evidence was very low).

Investigation into heterogeneity

To investigate the observed heterogeneity, findings were sub-grouped by population type (general population/at risk population) to determine whether this affected the efficacy of the Student Bodies program.

For bulimia at post-treatment (Figure 8.6), the size of the effect did not differ for general population and at risk population subgroups, and for both subgroups the estimates of effect were imprecise. However, the direction of the effect differed with the general population subgroup favouring the intervention (SMD -0.25, 95% CI -0.77 to 0.28, k=1, N=57), and the at risk population subgroup favouring the control (SMD 0.36, 95% CI -0.15 to 0.86, k=1, N=61). 62% of the differences could not be explained random variation (I^2 test for subgroup differences = 62.3%).

For bulimia at follow-up (Figure 8.12), the size of the effect was larger for the at risk population subgroup and in favour of the control (SMD 0.58, 95% CI 0.05 to 1.12, k=1, N=56), compared to the general population subgroup, where a small effect was observed in favour of the intervention, but the estimate of effect was imprecise (SMD

-0.26, 95% CI -0.78 to 0.27, k=1, N=57). 79% of the differences could not be explained random variation (I^2 test for subgroup differences = 79.2%).

Student Bodies for Binge-Eating Disorder (BED) vs. Waitlist Control

Two studies investigated the used of an adapted version of Studies Bodies (SB2-BED) for young people who were at risk of developing binge-eating disorder (BED) (Jones et al, 2008 and Doyle et al, 2008). At post-treatment, Student Bodies for binge-eating disorder had a similar effect to the waitlist control on assessor-rated weight and shape concerns combined (SMD -0.19, 95% CI -0.57 to 0.20, k=1, N=105) (Figure 8.13) (confidence in the evidence was low). Student Bodies had a small effect onself-rated weight concerns (SMD -0.28, 95% CI -0.77 to 0.20, k=1, N=66) (Figure 8.14) (confidence in the evidence was low), but the estimates of effect were imprecise. Student Bodies had a similar effect to the control on self-rated shape concerns (SMD -0.17, 95% CI -0.65 to 0.32, k=1, N=66) (Figure 8.15) (confidence in the evidence was low), assessor-rated binge episodes (SMD 0.07, 95% CI -0.31 to 0.46, k=1, N=105) (Figure 8.16) (confidence in the evidence was low), and assessor-rated BMI (SMD -0.13, 95% CI -0.43 to 0.17, k=2, N=171), with no heterogeneity (I^2=0%; chi^2=0.37, df=1, p=0.54) (Figure 8.17) (confidence in the evidence was low). There was a small effect in favour of the control group on self-rated restraint compared with Student Bodies (SMD 0.45, 95% CI -0.04 to 0.94, k=1, N=66), but the estimate of effect was imprecise (Figure 8.18) (confidence in the evidence was low). Student Bodies had a similar effect to the control on self-rated depression (SMD -0.19, 95% CI -0.57 to 0.20, k=1, N=105) (Figure 8.19) (confidence in the evidence was low) Student Bodies had a large effect on participants no longer meeting assessor-rated criteria for being at risk of binge-eating disorder (BMI <85th percentile) (RR 2.35, 95% CI 0.90 to 6.09, k=1, N=87), but the estimate of effect was imprecise (Figure 8.20) (confidence in the evidence was low).

At 8-9 month follow-up, Student Bodies had a similar effect to the control on assessor-rated weight and shape concerns combined (SMD -0.04, 95% CI -0.43 to 0.34, k=1, N=105) (Figure 8.21) (confidence in the evidence was low),self-rated weight concerns (SMD 0.01, 95% CI -0.48 to 0.49, k=1, N=66) (Figure 8.22) (confidence in the evidence was low), self-rated shape concerns (SMD 0.13, 95% CI -0.35 to 0.61, k=1, N=66) (Figure 8.23) (confidence in the evidence was low), self-rated depression (SMD 0.10, 95% CI -0.28 to 0.49, k=1, N=105) (Figure 8.24) (confidence in the evidence was low), and assessor-rated BMI (SMD -0.17, 95% CI -0.47 to 0.14, k=2, N=171), with no heterogeneity (I^2=0%; chi^2=0.77, df=1, p=0.38) (Figure 8.25) (confidence in the evidence was low).There was a small effect in favour of the control group on self-rated restraint compared with Student Bodies (SMD 0.26, 95% CI -0.23 to 0.74, k=1, N=66), but the estimate of effect was imprecise (Figure 8.26) (confidence in the evidence was low). The control had a small effect on assessor-rated reduction of binge episodes (SMD 0.38, 95% CI -0.00 to 0.77, k=1, N=105), compared to Student Bodies, but the estimate of effect was imprecise (Figure 8.27) (confidence in the evidence was low).

8.2.4 Evidence summary

Student Bodies vs. Waitlist Control

In the studies investigating the Student Bodies program in general and at risk populations, at post-treatment, there was low quality evidence that was inconclusive as to whether control improved global eating disorder symptomatology and restraint compared to Student Bodies. There was low quality evidence that suggested that Students Bodies and the control had similar effects on weight concerns, shape concerns, drive for thinness and bulimia, but the evidence was inconclusive.

At 5-6 months follow-up, there was low quality evidence that Student Bodies and the control had similar effects on global eating disorder symptomatology, weight concerns, shape concerns, restraint, drive for thinness and bulimia, but the evidence was inconclusive.

In the investigation of heterogeneity, studies using participants from the general population showed some evidence of efficacy in bulimia that was inconclusive, but studies using an at risk population did not show favourable results.

Student Bodies for binge-eating disorder vs. Waitlist Control

For Student Bodies, adapted for use in participants at risk of BED (SB2-BED), at post-treatment, there was low quality evidence that was inconclusive as to whether Student Bodies improved, self-rated weight concerns, , and risk of developing binge-eating disorder. There was low quality evidence that was inconclusive as to whether the control improved restraint. There was low quality evidence that Student Bodies and the control had similar effects on weight and shape concerns combined, binge episodes and depression, but the evidence was inconclusive.

At 8-9 month follow-up, there was low quality evidence that was inconclusive as to whether the control improved restraint and reduced binge episodes. There was low quality evidence that Student Bodies and the control had similar effects on clinician-rated weight and shape concerns, self-rated weight concerns, self-rated shape concerns and depression, but the evidence was inconclusive.

8.3 ONLINE GROUP CBT

8.3.1 Included studies

One study investigated the efficacy of online group-based cognitive behavioural therapy (CBT), aimed at preventing the development of eating disorders in adolescents (Heinicke et al, 2007). The intervention, entitled ‘My body, My life,’ consisted of therapist-led group CBT delivered via online synchronous communication (chat rooms), accompanied by a guided self-help manual. The study

included 83 young people aged 12-18 years, who self-identified as having body image/eating problems and were therefore deemed as at risk of developing an eating disorder. Sessions were delivered for 90 minutes, once a week, for a period of 6 weeks. Post-treatment assessment was conducted 6 weeks after baseline, and there was no follow-up assessment. For further details on study characteristics, see appendix 10, Table 21.

8.3.2 Outcomes

The study reports self-rated outcomes of weight loss behaviour, shape concerns, dietary restraint, bulimia and depression, and these are reported here. Outcomes not regarded as mental health problems such as internalisation of societal ideal are not reported here.

8.3.3 Quality of the evidence

GRADE quality assessments are shown in Appendix 12, Table 8.7.

All outcomes were graded as low quality evidence. Outcomes were downgraded for some risk of bias and some indirectness contributed to downgrading. Bias included unclear method for allocation concealment and lack of participant blinding with only self-rated outcomes. Self-reported outcomes were considered at risk of bias because of their subjective nature and clear link with the objectives of the study. The intervention was compared to a waitlist control and this was considered to be a source of indirectness. With relation to imprecision, no outcome reached the optimum information size (N >400), hence quality of evidence was downgraded for this reason. As only one trial was considered, inconsistency was not applicable and formal exploration of publication bias (with a funnel plot) was not possible.

8.3.4 Findings

Online group CBT vs. Waitlist control

At post-treatment, there was a similar effect for online group CBT and the waitlist control on self-rated weight loss behaviour (SMD -0.10, 95% CI -0.55 to 0.36, k=1, N=73) (Figure 8.28) and self-rated restraint (SMD -0.18, 95% CI -0.64 to 0.28, k=1, N=73) (Figure 8.30). Online group CBT had a medium effect on self-rated shape concerns (SMD -0.70, 95% CI -1.17 to -0.22, k=1, N=73) (Figure 8.29) and self-rated depression (SMD -0.51, 95% -0.98 to -0.04, k=1, N=73 (Figure 8.32). Online group CBT had a medium effect on bulimia (SMD -0.45, 95% CI -0.91 to 0.02, k=1, N=73), but the estimate of effect was imprecise (Figure 8.31).

8.3.5 Evidence summary

Online group CBT vs. Waitlist control

In participants who were at risk of developing an eating disorder, there was low quality evidence that online group CBT improved shape concerns and depression compared with the waitlist control. There was low quality evidence that was inconclusive as to whether online group CBT improved bulimia. There was low quality evidence that online group CBT and the control had similar effects on weight loss behaviour and restraint, but the evidence was inconclusive.

8.4 COMPUTER-BASED PSYCHOEDUCATION

8.4.1 Included studies

One study investigated the use of a computer-based psychoeducation program (Food, Mood and Attitude, FMA) aimed at preventing the development of eating disorders (Franko, et al 2005). The study was made up of 240 young adults, of which 120 participants were categorised as low risk of developing an eating disorder (rated as 'asymptomatic' on the Q-EDD) and 120 were categorised as high risk (rated as 'symptomatic' on the Q-EDD). 60 low risk and 60 high risk participants were randomised to receive FMA and 60 low risk and 60 high risk participants were randomised to receive the non-therapeutic control (general videos about women's/gender issues). FMA focuses on addressing the 5 risk factors (pressure to be thin, thin ideal idealisation, body dissatisfaction, dieting and negative affect) of Stice et al.'s (1996) dual-pathway model of eating disorder development (Franko et al, 2005). The program involves participants completing interactive tasks based on the psychoeducational material presented. The intervention consisted of two 1-2 hours sessions delivered across a 2-3 week period. Post-treatment assessment was conducted between 2 and 3 weeks after baseline, and follow-up assessment was conducted 3 months after baseline.

8.4.2 Outcomes

Outcomes reported are the self-rated EDE-Q subscales of weight concerns, shape concerns and restraint and their respective total eating disorder symptomatology score. As the EDE-Q is based on an assessment of symptoms in the past 28 days, the study only reported EDE-Q at 3 month follow-up, not 2-3 week post-treatment.

Outcomes not regarded as mental health related such as treatment knowledge and sociocultural attitudes e.g. awareness of societal influence on appearance or internalisation of societal ideal are not reported.

8.4.3 Quality of the evidence

GRADE quality assessments are shown in Appendix 12 (Tables 8.6-8.7).

Most outcomes were downgraded for some risk of bias. Bias included: lack of participant blinding with only self-rated outcomes, no method used to account for participant attrition and unclear allocation concealment. Self-reported outcomes were considered at risk of bias because of their subjective nature and clear link with the objectives of the study. Studies were considered applicable to the review and were therefore not downgraded for indirectness. With relation to imprecision, no outcomes reached the optimum information size (N >400), hence quality of evidence was downgraded for this reason. Inconsistency was not applicable in this assessment as only one study was considered.

8.4.4 Findings

At 3 months follow-up, for all participants (high and low risk of developing an eating disorder), FMA compared with the control had a small effect on self-rated global eating disorder symptomatology (SMD -0.23, 95% CI -0.49 to 0.03, k=1, N=231) (Figure 8.33) and self-rated shape concerns (SMD -0.20, 95% CI -0.46 to 0.06, k=1, N=231) (Figure 8.34) but for both outcomes the estimates of effect were imprecise (confidence in the evidence was low). FMA and the control had a similar effect on self-rated weight concerns (SMD -0.07, 95% CI -0.33 to 0.19, k=1, N=231) (Figure 8.35) and self-rated restraint (SMD -0.07, 95% CI -0.33 to 0.19, k=1, N=231) (Figure 8.36) (confidence in the evidence was low).

At 3 months follow-up, for participants at high risk of developing an eating disorder, FMA had a small effect on self-rated global eating disorder symptomatology (SMD -0.28, 95% CI -0.66 to 0.09, k=1, N=112) (Figure 8.37), weight concerns (SMD -0.28, 95% CI -0.66 to 0.09, k=1, N=112) (Figure 8.38), shape concerns (SMD -0.34, 95% CI -0.71 to 0.03, k=1, N=112) (Figure 8.39) and restraint (SMD -0.26, 95% CI -0.64 to 0.11, k=1, N=112) (Figure 8.40), but the estimates of effect were imprecise (confidence in the evidence was low).

8.4.5 Evidence summary

For all participants (high and low risk), at follow-up, there was low quality evidence that was inconclusive as to whether FMA improved global eating disorder symptomatology and shape concerns compared with the control. There was low quality evidence that FMA and the control had similar effects on weight concerns and restraint, but the evidence was inconclusive.

For participants at high risk of developing an eating disorder, at follow-up, there was low quality evidence that was inconclusive as to whether FMA improved global eating disorder symptomatology, weight concerns, shape concerns and restraint.

8.5 CONCLUSION

There is currently insufficient evidence to support the use of cCBT or computer-based psychoeducation for general eating disorders or for binge eating disorder in adolescents. Findings were inconclusive. However, the number of studies is small and further research is needed to confirm this finding. For group CBT for eating disorders, there were some favourable effects and, although this single study does not provide sufficient evidence alone for its support, it is promising for further research.

9 ATTENTION DEFICIT HYPERACTIVITY DISORDER

9.1 COGNITIVE TRAINING (ATTENTION AND WORKING MEMORY TRAINING)

9.1.1 Introduction

ADHD is characterised by impaired concentration, impulsivity, and overactivity or restlessness. DSM-IV differentiates three types: predominantly inattentive, predominantly hyperactive/impulsive, and combined. The prevalence is highly controversial because it varies according to the diagnostic system and criteria used, and methods of data collection in studies (Polanczyk et al., 2007). Reports of prevalence vary widely between countries; in the UK the prevalence has been reported to be 3.62% among boys and 0.85% among girls (Ford et al., 2003, NICE, 2008).

The pharmacological agent methylphenidate is the most commonly used treatment, and behaviour therapy and parent training are the psychosocial treatment alternatives. Cognitive behaviour therapy interventions for children and young people with ADHD delivered in a traditional face-to-face setting, combining techniques of behavioural management with problem-solving and self-management training, have been studied since the 1980s. These programs have shown little success, however, and CBT alone does not appear to be as effective a treatment as methylphenidate (Pliszka & AACAP, 2007).

Cognitive training packages using electronic means of delivery are an obvious alternative to face-to-face individual or group interventions. These have been designed to address issues such as deficits in attention and working memory. Many of these developments are very recent and they have not been adequately tested outside of electronic settings.

9.1.2 Included studies

14 studies investigated the efficacy of computerised cognitive training for improving attention and/or working memory. Seven studies investigated computerised attention training (cAT). Five of these were in children or young people with attention difficulties or diagnosed ADHD (Rabiner et al, 2010; Steiner et al, 2011; Shalev et al, 2007; Tucha et al, 2013; Galbiati et al, 2009) and two were in populations without specific attention difficulties (Cho et al, 2002; Rueda et al, 2012). Eight studies investigated computerised working memory training (cWMT). Six of these were in children primarily with ADHD (Green et al, 2012; Johnstone et al, 2010 & 2012; Klingberg 2002 & 2005; Prins et al, 2011) and one of these studies also assessed working

memory training in a general child population (Johnstone et al, 2012). Two studies assessed cWMT in populations with learning disabilities (Gray et al, 2012; Van der Molen et al, 2010) (in Gray et al. participants also had ADHD). For five studies, data was only presented for training test outcomes (Galbiati et al, 2009; Tucha et al, 2013; Cho et al, 2002; Klingberg et al, 2002; Prins et al, 2011) and did not contribute to the meta-analysis (see below). Data from ten studies contributed to the meta-analysis and study characteristics are shown in Appendix (10 Table 22).

Study characteristics

In studies of cAT and cWMT, training commonly aimed to increase attention, memory, alertness, vigilance and response inhibition. The studies of cAT often had more emphasis on attention, whereas the studies of cWMT often had more emphasis on memory, but many of the training tasks used were similar for both types of training (e.g. Stroop, Flanker and Go NoGo tasks) and many of the same types of outcomes were reported (measures of attention, response inhibition and academic ability).

Most studies conducted training in 20-60 minute sessions on 2-5 days per week and Intervention length varied from 2 to 14 weeks. Outcome was commonly assessed by measuring participants' improvement in the training tasks they were undertaking and, in most studies, it was also assessed with independent measures of behaviour (e.g. attention or hyperactivity rating scales).

9.1.3 Outcomes

Since there appeared to be large overlap between the types of training used in studies of cAT and cWMT, results for these studies were combined in the meta-analysis (but results for cAT and cWMT are also displayed separately in figures). Populations with ADHD, general populations and populations with learning disabilities were not combined in the meta-analysis.

Behavioural outcomes, measured with tests independent of training tasks were included in the review. Academic outcomes, assessed by independent tests, were also included. Outcomes that were assessed with training tasks were not included in the review since they were considered to be a poor reflection of real change in mental health status (five studies only reported test outcomes and their data does not contribute to the meta-analysis).

9.1.4 Quality of the evidence

Some behavioural outcomes were downgraded for risk of bias, commonly due to a lack of blinding in assessor-rated outcomes. For academic outcomes, assessment was more objective and the risk of bias from assessment was considered to be low. In most studies, the control group was an active intervention, such as non-adaptive training, and sessions were completed independently. Most outcomes were therefore not downgraded for indirectness. Sample sizes were small and all outcomes were

downgraded for imprecision. Overall, most mental health outcomes were graded as low quality evidence and most academic outcomes were graded as moderate quality evidence.

9.1.5 Findings

Populations with ADHD

In populations with ADHD or inattentiveness, compared with the control, cognitive training had a medium or small effect on attention (SMD -0.57, 95% CI -0.89 to -0.26, k=5, N=174) (Figure 9.1), hyperactivity/impulse control (SMD -0.47, 95% CI -0.83 to -0.11, k=4, N= 156) (Figure 9.2) and symptoms of ADHD (SMD -0.39, 95% CI -0.74 to -0.04, k=4, N=130) (Figure 9.3) (confidence in the evidence was low). There was no heterogeneity between studies or between cAT and cWMT subgroups for any outcome.

At 4 month follow-up in one trial, compared with the control, cognitive training had a similar effect on attention (SMD -0.13, 95% CI -0.78 to 0.52, k=1, N=37) (Figure 9.4). It had a medium effect on hyperactivity (SMD -0.56, 95% CI -1.22 to 0.1, k=1, N=37) (Figure 9.5), but the estimate of effect was imprecise (all moderate quality evidence).

For academic outcomes, in populations with inattentiveness, cognitive training had a similar effect on academic productivity (SMD 0.10, 95% CI -0.56 to 0.77, k=1, N=50) (Figure 9.6) compared with the control. Cognitive training had a small effect on academic success (SMD -0.39, 95% CI -1.16 to 0.37, k=1, N=50) (Figure 9.7) and reading skills (SMD -0.25, 95% CI -1.29 to 0.79, k=1, N=50) (Figure 9.10), but the estimates of effect were imprecise. Cognitive training had a similar effect on maths skills (SMD -0.12, 95% CI -0.86 to 0.61, k=2, N=86), but there was heterogeneity between studies (I^2 52%) (Figure 9.11). Cognitive training had a medium effect on comprehension (SMD -0.75, 95% CI -1.43 to -0.07, k=1, N=36) (Figure 9.10) and passage copying (SMD -0.78, 95% CI -1.46 to -0.1, k=1, N=36) (Figure 9.13) skills (all moderate quality evidence).

General populations

In general populations, compared with the control, cognitive training had a similar effect on symptoms of ADHD (SMD 0.09, 95% CI -0.48 to 0.65, k=1, N=48) (Figure 9.12) (confidence in the evidence was low) and on intelligence at post-treatment (SMD -0.17, 95% CI -0.82 to 0.48, k=1, N=37) (Figure 9.13) and 3 month follow-up (SMD 0.17, 95% CI -0.47 to 0.82, k=1, N=37) (confidence in the evidence was moderate) (Figure 9.16).

Populations with learning disabilities

In participants with learning disabilities, compared with control, cognitive training had a similar effect on symptoms of ADHD (SMD 0.05, 95% CI -0.51 to 0.60, k=1, N=52)

(Figure 9.17). For academic outcomes, cognitive training had a similar effect on maths (SMD 0.22, 95% CI -0.15 to 0.59, k=2, N=119) (Figure 9.18), reading (SMD 0.10, 95% CI -0.27 to 0.47, k=2, N=119) (Figure 9.19), comprehension (SMD 0.02, 95% CI -0.35 to 0.38, k=2, N=119) (Figure 9.20Figure 9.18) and spelling (SMD 0.25, 95% CI -0.32 to 0.81, k=1, N=52) (Figure 9.21) ability. There was no heterogeneity between studies for any of the outcomes. At 10 week follow-up, cognitive training had a similar effect on maths (SMD -0.00, 95% CI -0.50 to 0.50, k=1, N=64) (Figure 9.22) and reading (SMD -0.02, 95% CI -0.52 to 0.48, k=1, N=64) (Figure 9.21) ability. Cognitive training had a small effect on comprehension (SMD -0.47, 95% CI -0.98 to 0.04, k=1, N=64), but the estimate of effect was imprecise (Figure 9.22) (all moderate quality evidence).

9.1.6 Evidence summary

Populations with ADHD

In populations with ADHD or inattentiveness, there was low quality evidence that cognitive training improved levels of attention, hyperactivity and overall ADHD symptoms. At 4 month follow-up, there was moderate quality evidence that was inconclusive due to the wide confidence intervals, although the effect size suggested a possible benefit in hyperactivity but little or no benefit in attention. There was moderate quality evidence that cognitive training improved comprehension and passage copying ability, but findings were inconclusive for academic productivity and success and maths and reading skills.

General populations

In general populations, there was low to moderate quality evidence that cognitive training had a similar effect to the comparator on symptoms of ADHD and intelligence at post-treatment and 3 month follow-up, but findings were inconclusive.

Populations with learning disability

In populations with learning disability, there was moderate quality evidence that cognitive training had a similar effect to the comparator on symptoms of ADHD, but findings were inconclusive. There was moderate quality evidence that cognitive training had a similar effect on maths, reading, comprehension and spelling ability at post-treatment and at 10 week follow-up, but findings were inconclusive.

9.2 CONCLUSION

The evidence provides some support for the use of cognitive training in young people with inattentiveness or ADHD. There was moderate quality evidence of improvement in some academic outcomes but not others. There was evidence for improvements in symptoms of ADHD in the short-term. However, this evidence was of low quality and the benefit on behavioural symptoms is more uncertain. These types of programs are

good candidates for further research, where longer-term follow-up, and the spectrum of ADHD participants benefitting most, should be investigated.

The evidence does not currently support the use of cognitive training in general populations and populations with learning disability. Low and moderate quality evidence was inconclusive but suggested that cognitive training may not improve academic or behavioural outcomes in these populations.

10 CONDUCT DISORDER

10.1 PARENT TRAINING

10.1.1 Introduction

Conduct problems are the most common mental health disorders in childhood and adolescence (NICE, 2013) and there are some indications that the prevalence has increased over recent decades. The natural history of conduct disorder follows a developmental course of increasing severity, increasing resistance to treatment, and consequent increasing costs. Family-based interventions, particularly parent training in those under 11 years of age, have been shown to be effective, with effect sizes ranging from 0.67 to 0.88 for parenting groups. Parent training is usually delivered in 10–12 sessions with teaching material support such as videotapes. There are a number of well-researched programs, including the Triple P – Positive Parenting Program (Sanders et al, 2000), the Incredible Years Program (Webster-Stratton and Reid 2010) and the Oregon Social Learning Center programs (Forgatch and Patterson, 2010). NICE guidance recommends parenting programs as a first-line treatment for oppositional defiant disorder and conduct disorder (NICE, 2013).

In recent years, attempts have been made to translate the principles of parent training drawn from social learning theory to computerised and web-based formats with programs such as Triple P. Triple P was designed as a multilevel prevention program that has been used to treat severe behavioural, emotional and developmental problems in children up to 16 years of age. It is a program that was developed to be media-friendly and has been used in a number of delivery formats including individual, group and self-directed implementations.

10.1.2 Included studies

Two studies investigated the use of online parent training programs for conduct disorder. Programs aimed to teach positive parenting skills using worksheets, exercises, video-modelling and personalised goal setting and feedback. Study characteristics are shown in Appendix 10 (Table 23).

One study investigated the use of the Triple P – Positive parenting program, adapted for use on the internet (Triple P Online) (Sanders et al, 2012). 116 parents of 2-9 year old children were randomised to Triple P Online or internet-as-usual control (on completion of study, parents in the control group were offered the intervention). The intervention consisted of eight modules and each new module was accessed on completion of the previous module. Automated text and email prompts were used to encourage adherence. Intervention modules were completed over 3 months with post-treatment and follow-up assessments at 3 and 6 months respectively.

The other study investigated the use of an internet-based parenting program theoretically based on social learning theory/ cognitive-behaviour therapy, and developed from a Swedish parent-training program called Comet (Enebrink et al, 2012). 104 parents of children aged 2-9 years were randomised to online parent training or a waitlist control. Intervention modules were conducted in seven sessions over 10 weeks with post-treatment assessment at 10 weeks.

10.1.3 Outcomes

Studies reported outcomes of parent and clinician-rated child behaviours and of parenting efficacy and parent psychological health. Because this review is focussed on child mental health, outcomes of child behaviour are reported but not outcomes of parenting efficacy or parent mental health.

10.1.4 Quality of the evidence

The majority of outcomes in both studies were parent-reported and there was considered to be a high risk of bias associated with these outcomes due to the lack of blinding. For clinician-rated outcomes, blinding was unclear and there was considered to be some risk of bias. There was some indirectness associated with a waitlist control group and therapist input in one study and this contributed to downgrading. There was no heterogeneity associated with any outcomes. All outcomes were graded as low quality evidence (Appendix 12, Tables 10.1 and 10.2).

10.1.5 Findings

Compared with control, online parent training had a large effect on parent-rated number of problematic behaviours (SMD -0.86, 95% CI -1.22 to -0.50, k=2, N=202) (Figure 10.1), a medium effect on parent-rated frequency of problem behaviours (SMD -0.78, 95% CI -1.07 to -0.49, k=2, N=202) (Figure 10.2) and rates of remission (RR 2.34, 95% CI 1.60 to 3.43, k=2, N=202) (Figure 10.3) and a small effect on parent-rated emotional symptoms (SMD -0.42, 95% CI -0.70 to -0.14, k=2, N=202) (Figure 10.4) (confidence in the evidence was low). Online parent training had a similar effect to the control group on clinician-rated family observation scores (SMD 0.01, 95% CI -0.57 to 0.60, k=1, N=45) (Figure 10.5), but the estimate of effect was imprecise (confidence in the evidence was low

At 6 month follow-up, compared with control, online parent training had a medium effect on parent-rated number of problem behaviours (SMD -0.60, 95% CI -0.97 to -0.23, k=1, N=116) (Figure 10.6) and frequency of disruptive behaviours (SMD -0.73, 95% CI -1.11 to -0.36, k=1, N=116) (Figure 10.7) (confidence in the evidence was low). It had a small effect on parent-rated emotional symptoms (-0.22, 95% CI -0.58 to 0.15, k=1, N=116) (Figure 10.8), but the estimate of effect was imprecise (confidence in the evidence was low). Online parent training had a similar effect to the control group on clinician-rated family observation scores for (SMD -0.14, 95% CI -

0.79 to 0.51, k=1, N=37) (Figure 10.9), but the estimates of effect were imprecise (confidence in the evidence was low).

10.1.6 Evidence summary

There was low quality evidence that was inconclusive as to the benefit of online parent training as measured by clinicians during family observation at post-treatment and follow-up. There was low quality evidence that, when rated by parents, online parent training improved the number, frequency and remission from problematic behaviours at post-treatment and follow-up. There was low quality evidence that parent training improved emotional symptoms at post-treatment but was inconclusive at follow-up.

10.2 CONCLUSION

There is some support for the use of online parent training for conduct disorder. There is evidence from parent-reported outcomes for its effectiveness but confidence in these effects is low and not supported clearly by independent observation. However, this is a promising intervention for further research.

11 SUBSTANCE MISUSE

11.1 THE USE OF SYSTEMATIC REVIEWS

This review includes studies of children and young people and also of young adult populations (inclusion criteria mean age of sample <18 years or all population ≤25 years). For substance misuse, the evidence base was large and a full review of all child, adolescent and young adult studies was unfeasible. A more efficient approach was taken, where studies in children and young people were reviewed directly but, for studies in young adults, another relevant systematic review was used to inform the current review. The most recent systematic reviews of computerised interventions for substance misuse were considered and, out of these, the most relevant review was selected. This gave overall effect sizes in young adult populations (majority of studies in the review) and these results are used as supporting evidence for the outcome data in children and young people.

One systematic review was used to inform this review (Rooke et al, 2010). From the most recent systematic reviews, this review was selected for two reasons. All reviews that included computer programs (and were not restricted to brief alcohol screening interventions) presented findings for different types of interventions combined i.e. data for multiple-session information/ activity type computer programs were meta-analysed with screening and brief normative feedback type programs. Rooke and colleagues (2010) included a sub-group analysis comparing programs with and without normative feedback making it helpful to inform the individual efficacy of these types of interventions. The second reason for selection of this review was that it was the only review to estimate effect sizes for both alcohol and cigarette use.

11.2 COMPUTER PROGRAMS

11.2.1 Introduction

Significant substance misuse in young people is frequently a marker, or proxy indicator, for complex, interacting difficulties in multiple domains, as well as great vulnerability to exploitation. Many young people experiment with substances; a small proportion of these go on to develop entrenched and more severe, entrenched and risky substance use. 23% of 11–15 year-olds have smoked tobacco, of whom, 4% smoked regularly, 43% have used alcohol and 17% have used illicit drugs (Henderson et al, 2012).

Treating significant substance use in young people is complex insofar as the aetiology of adolescent substance use is complex and multifactorial; care must address broad themes of *education* (about the specific risks related to specific

substances, or routes of administration, or harm minimisation advice – designed, if not to cease substance use, at least to minimise its most serious harms), *physical health* (risks associated with dependency, withdrawal, overdose, or infection) as well as *psychological* factors (motivation, comorbid mental illness, relationships) and *social-ecological* factors (access to pro-social peers, education, employment or training). Some therapeutic packages for more serious substance use disorders have been shown to be effective under randomised conditions and use a combination of intervention modalities.

Another major problem in the treatment of substance use disorders (at all ages) is the stigma associated with the condition, as well as its illegality; computer-aided or -mediated treatment options offer much promise in this respect. Stigma, in concert with the powerfully reinforcing hedonic effects of substance use, may explain the tendency for young people, especially in the earliest stages of a developing disorder, to be, if not actively *avoidant* of help, at least "*hard to reach*". At the heaviest end of substance use disorders in young people, computer programs are unlikely to supplant face to face treatment, but they may support it. Though the range of formally-tested programs remains small to date, computer programs that *augment* face to face interventions, or are designed to be used as privately-accessible self-help tools for the dissemination of reliable health information, the promotion of changes in the motivational state of the user, and signposting to local therapeutic services, may have much to add to the arsenal of therapeutic resources.

11.2.2 Included studies

Nine studies in young people investigated the use of computerised programs designed to reduce levels of adolescent substance misuse and were included in the review. Other studies had data in a form that could not be extracted; the authors were contacted but, in all cases, no additional data was received. In six studies, programs were designed for use by young people alone (Fritz et al, 2008; Buller et al, 2008; Koning et al, 2009; Schwinn et al, 2010a; Schinke et al. 2004a, 2004b) and, in three studies the programs were designed for joint mother-daughter participation (Fang et al, 2010; Schinke et al, 2009a, 2009b). An additional four publications presented follow-up data to the included studies (Fang 2012; Koning et al, 2011; Schwinn et al, 2010b; Schinke et al, 2010). (Appendix 10, Table 24).

11.2.3 Outcomes

Studies present outcomes of self-reported intended and actual behaviours. Since substance misuse behaviour, and not intention, was considered to be a mental health outcome, only outcomes of behaviour are reported in this review. Mood disorders are commonly associated with substance use disorder and the outcome of depression, reported in a number of studies, is included in this review. Findings for programs designed for use by mothers and children and programs designed for use

by children alone were combined in the meta-analysis but were sub-grouped to examine any differences.

11.2.4 Quality of the evidence

Most outcomes were self-reported substance use and there was potentially high perceived social pressure to report improvement. The risk of bias associated was therefore considered to be high. The sample sizes for studies were relatively large and, in most cases, outcomes were not downgraded for imprecision. Overall, all outcomes were graded as low or very low quality evidence (Appendix 12, Tables 11.1-11.8).

11.2.5 Findings

Alcohol

Compared with the control, computer programs had a very small effect on self-reported alcohol consumption at post-treatment (SMD -0.15, 95% CI -0.32 to 0.03, k=2, N=933) (Figure 11.1), but the estimate of effect was imprecise (confidence in the evidence was low). Computer programs had a very small effect at follow-up: 1 year (SMD -0.18, 95% CI -0.29 to -0.07, k=6, N=3,584) (Figure 11.2), 2 years (SMD -0.17, 95% CI -0.29 to -0.05, k=4, N=2,795) (Figure 11.3) and 3 years (SMD -0.12, 95% CI -0.22 to -0.02, k=2, N=1,669) (Figure 11.4) (confidence in the evidence was low). They had a small effect at longer-term follow-up: 6 years (SMD -0.21, 95% CI -0.44 to 0.02, k=1, N=283) (Figure 11.5) and 7 years (SMD -0.21, 95% CI -0.44 to 0.03, k=1, N=282) (Figure 11.6), but the estimates of effect were imprecise (confidence in the evidence was very low).

Compared with the control, computer programs had a similar effect on self-reported heavy alcohol use (drinks per week: 3-4 for boys, 2-3 for girls) at follow-up: 1 year (RR 1.05, 95% CI 0.61 to 1.80, k=1, N=1,550) (Figure 11.7) and 2 years (RR 0.83, 95% CI 0.60 to 1.14, k=1, N=1,550) (Figure 11.8) (confidence in the evidence was low). Computer programs had a small effect on self-reported heavy alcohol use at 3 year follow-up (RR 0.79, 95% CI 0.65 to 0.95, k=1, N=1,348) (Figure 11.9) (confidence in the evidence was low) but a similar effect at 6 (SMD -0.11, 95% CI -0.35 to 0.12, k=1, N=283) (Figure 11.10) and 7 (SMD -0.18, 95% CI -0.42 to 0.05, k=1, N=282) (Figure 11.11) year follow-up (confidence in the evidence was very low).

Cigarettes

Compared with control, computer programs had a similar effect on self-reported cigarette use at post-treatment (SMD -0.08, 95% CI -0.23 to 0.07, k=4, N=1,178) (Figure 11.12) (confidence in the evidence was low). Computer programs had a small effect at 1 year (SMD -0.21, 95% CI -0.42 to 0.01, k=6, N=3,580) (Figure

11.13), but there was heterogeneity (I^2 = 85%) and the estimate of effect was imprecise (confidence in the evidence was very low). They had a very small effect at 2 year follow-up (SMD -0.13, 95% CI -0.24 to -0.02, k=3, N=1,245) (Figure 11.14) (confidence in the evidence was low) but a similar effect at 3 year (SMD -0.08, 95% CI -0.30 to 0.14, k=1, N=321) (Figure 11.15) and 6 year (SMD -0.06, 95% CI -0.29 to 0.17, k=1, N=283) (Figure 11.16) follow-up (confidence in the evidence was very low). At 7 year follow-up, they had a small effect (SMD -0.27, 95% CI -0.50 to -0.03, k=1, N=282) (Figure 11.17) (confidence in the evidence was very low).

Marijuana

Compared with control, computer programs had a very small effect on self-reported marijuana use at post-treatment (SMD -0.15, 95% CI -0.28 to -0.02, k=2, N=933) (Figure 11.18) and at 1 year (SMD -0.18, 95% CI -0.27 to -0.10, k=5, N=2,070) (Figure 11.19) and 2 year (SMD -0.26, 95% CI -0.48 to -0.05, k=3, N=1,245) (Figure 11.20) follow-up (confidence in the evidence was low). At 3 year follow-up, computer programs had a very small effect (SMD -0.16, 95% CI -0.38 to 0.06, k=1, N=321) (Figure 11.21), but there was heterogeneity (I^2 = 50%) and the estimate of effect was imprecise (confidence in the evidence was very low). At 6 (SMD -0.01, 95% CI -0.25 to 0.22, k=1, N=283) (Figure 11.22) and 7 (SMD -0.02, 95% CI -0.25 to 0.21, k=1, N=282) (Figure 11.23) year follow-up, they had a similar effect to the control group (confidence in the evidence was very low).

Illicit prescriptions

Compared with the control, computer programs had a similar effect on self-reported illicit prescription use at post-treatment (SMD -0.07, 95% CI -0.23 to 0.10, k=1, N=582) (Figure 11.24) (confidence in the evidence was low). They had a very small effect at 1 year follow-up (SMD -0.11, 95% CI -0.21 to -0.00, k=3, N=1,500) (Figure 11.25) and a small effect at 2 year follow-up (SMD -0.20, 95% CI -0.44 to 0.04, k=2, N=936) with some heterogeneity (I^2 = 42%), but the estimate of effect was imprecise (Figure 11.26) (confidence in the evidence was low).

Inhalants

Compared with control, computer programs had a similar effect on self-reported inhalant use at 1 year (SMD -0.08, 95% CI -0.21 to 0.05, k=1, N=864) (Figure 11.27) and 2 year (SMD -0.06, 95% CI -0.20 to 0.07, k=1, N=828) (Figure 11.28) follow-up (confidence in the evidence was low).

Depression

Compared with control, computer programs had a small effect on depression at post-treatment (SMD -0.18, 95% CI -0.35, -0.02, k=1, N=582) (Figure 11.29) (confidence in the evidence was moderate) but findings were inconclusive and there was significant heterogeneity at both 1 (SMD -0.07, 95% CI -0.45, 0.31, k=3,

N=1,500, I^2 = 91%) (Figure 11.30) and 2 years (SMD 0.17, 95% CI -0.20, 0.54, k=2, N=921, $I^2$68%) (Figure 11.31) of follow-up (confidence in the evidence was low).

Systematic review in young adults

In the systematic review of computerised alcohol and tobacco interventions (Rooke et al, 2010), for the subgroup of studies without normative feedback (type of programs reviewed in this section), compared with control, computer programs had a small effect on all types of self-reported substance use (SMD -0.19, 95% CI -0.28 to -0.10, k=18). Separate effects on alcohol and tobacco use were reported for all types of intervention combined (those without normative feedback, as described in this section and those with normative feedback, as described in the next section). Computer program/ normative feedback interventions had a small effect on self-reported alcohol use (SMD -0.22, 95% CI -0.29 to -0.14, k=28) and a very small effect on tobacco use (SMD -0.14, 95% CI -0.23 to -0.06, k=13).

11.2.6 Evidence summary

Alcohol

There was low to very low quality evidence suggesting that computer programs can produce small effects in terms of alcohol consumption and heavy alcohol use over 1 to 7 year follow-up, but these effects were not always conclusive.

Cigarettes

There was low to very low quality evidence that was generally inconclusive as to whether computer programs can reduce cigarette use.

Marijuana

There was low quality evidence suggesting that computer programs may have a small benefit in terms of reducing marijuana use compared with control at up to 2 years follow-up. There was very low quality evidence that was inconclusive as to the benefit of computer programs at 3, 6 and 7 year follow-up.

Illicit prescription use

There was low quality evidence that was generally inconclusive as to the benefit of computer programs on illicit prescription use.

Inhalant use

There was low quality evidence that that was inconclusive as to the benefit of computer programs on inhalant use at up to 2 years follow-up.

Depression

There was moderate quality evidence that computer programs improved depression at post-treatment. There was low quality evidence that was inconclusive as to their benefit at 1 and 2 year follow-up.

Systematic review

The systematic review of computerised interventions (primarily in young adults) showed improvements of similar magnitude for alcohol and tobacco use at post-treatment/ 1 year follow-up compared with the current review, with a small beneficial effect on alcohol use and a very small beneficial effect on tobacco use.

11.3 COMPUTERISED SCREENING AND NORMATIVE FEEDBACK

11.3.1 Introduction

In keeping with comments about the stigma related to substance use (made in section 10.21 above) it is not surprising that the identification of substance-using youth is difficult; the majority of such individuals are not only *not* actively help-seeking but, conversely, are frequently proactive in their efforts to remain "under the radar" when it comes to sharing information about their activity.

Studies have investigated the impact of screening followed by more detailed assessment where the results of screening are fed directly back to the young person in an individualised form. Substance use screening, may act as a powerful *intervention in itself*, in which (in face to face interventions, at least) an identified "authority" (the screener) is demonstrably interested in/concerned about the details of the young person's substance use, and can correlate actual answers with the concrete risks related to these. The authority of *data* in computer-based screening tools (for instance percentages of a particular age/gender group within in the general population using substances at the level reported in a screening questionnaire) may serve the same purpose as the authority of an assessor. The promise of computer assisted or computer-mediated screening tools, whilst not yet proven, is significant in terms of its capacity to augment efforts to reach hard to reach youth, and, potentially, to deliver low level screening and motivational interventions/signposting to local services at significantly reduced costs.

11.3.2 Included studies

Two studies in young people investigated the use of computerised normative feedback programs for substance misuse. One study was of a screening and brief intervention program (Walton et al, 2010), where 726 participants with past year alcohol use and aggression were randomised to receive a brief computer

intervention independently, the same intervention with a counsellor present or to a control (brochure with information and contact numbers). The computer intervention was SafERteens, a 15 minute survey followed by a brief motivational interview on alcohol refusal and conflict resolution skills with personalised feedback. Follow-up assessments were made at 3 and 6 months (Walton et al, 2010) and 1 year (Cunningham et al, 2012) after intervention.

The other study (Evers et al, 2012) was of a computerised normative feedback program, where 1,590 young people were randomised to a computer program with personalised feedback (Your decision counts) or to a no treatment control. The program contained assessment and feedback and was delivered in three 30 minute sessions, one month apart. Assessments were made at post-treatment and 14 months after the intervention.

11.3.3 Outcomes

Studies report outcomes of alcohol disorder, binge drinking and rates of remission from any substance use and all outcomes are presented here.

11.3.4 Quality of the evidence

There was considered to be a high risk of bias associated with the self-reported substance use outcomes. The sample size for both studies was relatively large and no outcomes were downgraded for imprecision. Overall, all outcomes were graded as low quality evidence.

11.3.5 Findings

Screening and brief intervention

Compared with the control, screening and brief intervention had a similar effect on rates of alcohol use disorder (≥ 3 on the Alcohol use disorders identification test) at 3 month- (RR 0.85, 95% CI 0.66 to 1.11, k=1, N=411) (Figure 11.32), 6 month (RR 0.91, 95% CI 0.70 to 1.20, k=1, N=417) and 1 year (RR 0.83, 95% CI 0.62 to 1.11, k=1, N=403) (Figure 11.33) follow-up and a similar effect on rates of binge drinking (>5 drinks on one occasion) at 3 month (RR 0.84, 95% CI 0.63 to 1.11, k=1, N=411) (Figure 11.34), 6 month (RR 0.97, 95% CI 0.74 to 1.27, k=1, N=417) and 1 year (RR 0.84, 95% CI 0.64 to 1.11, k=1, N=403) (Figure 11.35) follow-up (confidence in the evidence was low).

Computerised normative feedback

Compared with control, computerised normative feedback had a small effect on rates of remission from any substance use at post-treatment (RR 0.81, 95% CI 0.74

to 0.89, k=1, N=597) (Figure 11.36) (confidence in the evidence was low). It had a small effect at 14 month follow-up (RR 0.92, 95% CI 0.84 to 1.01, k=1, N=597) (Figure 11.37), but the estimate of effect was imprecise (confidence in the evidence was low).

Systematic review in young adults

In the systematic review of computerised alcohol and tobacco interventions (Rooke et al, 2010), for the subgroup of studies with normative feedback (type of programs reviewed in this section), compared with control, computerised normative feedback had a small effect on all types of substance use (SMD -0.21, 95% CI -0.30 to -0.11, k=24). The separate effects on alcohol and tobacco use were reported for all types of intervention combined (those without normative feedback, as described in the previous section and those with normative feedback, as described in this section). Computer program/ normative feedback interventions had a small effect on self-reported alcohol use (SMD -0.22, 95% CI -0.29 to -0.14, k=28) and a very small effect on tobacco use (SMD -0.14, 95% CI -0.23 to -0.06, k=13).

11.3.6 Evidence summary

There was low quality evidence that was inconclusive as to the benefit of screening and brief intervention on rates of alcohol use disorder and binge drinking. There was low quality evidence that a computerised normative feedback program improved rates of remission from substance use at post-treatment and at 14 month follow-up, but findings for the latter were inconclusive.

In the systematic review of computerised interventions (primarily in young adults), for the sub-group of interventions including normative feedback, intervention improved (reduced relative to the control) overall substance use. The majority of studies in the review were of normative feedback (24/42 studies). For all studies (normative and non-normative programs), intervention improved alcohol and tobacco use.

11.4 CONCLUSION

Computer programs

There is weak evidence to support the use of computerised programs (without normative feedback) for substance misuse in general adolescent populations. For young people, there was evidence of a small benefit on alcohol use. For cigarette use, the evidence of effect was less conclusive and the effect size even smaller. The use of marijuana and illicit prescriptions was slightly reduced and the benefit for inhalant use was uncertain. The systematic review in young adults supported evidence in young people for alcohol and cigarette use, showing an effect size for combined substance misuse across studies (alcohol and cigarettes) of similar

magnitude. However, all of the evidence was of low quality due to uncertainty around the reliability of self-reported outcomes. Despite the relatively large amount of data, the efficacy of computerised programs for substance misuse is uncertain and more robust research may be needed to bring reliable evidence of efficacy.

Computerised screening and normative feedback

There is weak evidence to support the use of normative feedback programs for substance misuse in general adolescent populations. For these types of programs, evidence came primarily from the systematic review in young adults which suggested that they improved alcohol use and, to a lesser extent, cigarette use. However, there is uncertainty around the reliability of self-reported outcomes in studies of this review and, despite the relatively large amount of data, the efficacy of normative feedback programs is uncertain and more robust research may be needed to bring reliable evidence of efficacy.

12 AUTISM

12.1 COMPUTER-BASED SOCIAL SKILLS TRAINING

12.1.1 Introduction

Autism is a lifelong neurodevelopmental disorder, the core features of which are a qualitative impairment in the reciprocity of social interaction and communication, combined with restricted interests or rigid and repetitive behaviour and activities. The expression of autism in individual people differs at different stages of life, in response to interventions, and with the presence of coexisting conditions such as learning disability. Children and young people with autism also commonly experience difficulty with cognitive and behavioural flexibility, altered sensory sensitivity, sensory processing difficulties, stereotypic (rigid and repetitive) mannerisms and behaviour, emotional regulation difficulties, and a narrow and highly focused range of interests and activities. These features may range from mild to severe and may fluctuate over time or in response to changes in circumstances. They occur in about 1% of children and young people but may go unrecognised in many cases, particularly in those children and young people with milder forms of the disorder. Co-existing problems are common including learning disability (present in 50% of children and young people with autism) or a mental disorder (present in 70% of children and young people with autism).

Autism can have a profound impact on a child's educational achievement and social interaction such that even in its milder manifestations it can contribute to exclusion socially and in the long-term economically. The limited recognition by healthcare, education and social care professionals can create barriers to children and young people accessing the support and services they need to live independently. This is particularly the case at points of transition, for example when children leave school or are transferred from child and adolescent to adult services.

Interventions to treat the core symptoms of autism have largely been unsuccessful with efforts concentrating on the development of adaptive technologies and supportive environments to enable people with autism to live a fuller life. The treatment of associated behavioural problems and comorbid mental disorders has also been the focus of interventions and benefits have also been reported from these interventions

12.1.2 Included studies

One study investigated the use of a computer-based social skills training program (FaceSay) for children with autism spectrum disorders (ASD) (Hopkins et al, 2011) (Appendix 10, Table 25). 49 children aged 6-9 years with high/low functioning ASD (met diagnostic criteria for ASD on the Childhood Autism Rating Scale (CARS)) were randomised to receive FaceSay or to a non-therapeutic computer use control. FaceSay involved participants interacting with avatars through games and activities aimed at

improving their social skills, particularly mastering joint attention and recognising faces/facial expressions. The intervention involved 14 sessions in total, two at the beginning which were focused on teaching the children how to use the computer and the remaining 12 sessions were part of the FaceSay program. Sessions lasted for approximately 10-25 minutes each and were provided twice a week for 6 weeks. Post-treatment assessment was conducted between 6 and 8 weeks after baseline.

12.1.3 Outcomes

The study reports findings for children's emotion and facial recognition, parent-rated social skills and researcher-rated social skills observation. All outcomes are reported in this review except, where there are composite scales, only total score is presented.

12.1.4 Quality of the evidence

The study was associated with some risk of bias due to unclear presence of provider blinding. It is stated that parents were blind to intervention allocation but the maintenance of blinding was considered unlikely and to be an additional potential source of bias. The intervention was delivered with a high degree of therapist input (one or two investigators assisted each child during sessions) and all outcomes were downgraded for indirectness. The number of participants was small and, overall, the evidence was graded as low or very low quality (Appendix 12, Table 12.1 and 12.2).

12.1.5 Findings

In the low-functioning ASD group, compared with non-therapeutic computer use, FaceSay had a medium effect on children's emotion recognition (SMD -0.57, 95% CI -1.37 to 0.24, k=1, N=25) (Figure 12.1), a small effect on facial recognition (SMD -0.43, 95% CI -1.23 to 0.37, k=1, N=25) (Figure 12.2) and a medium effect on researcher-rated social skills (SMD -0.77, 95% CI -1.60 to 0.05, k=1, N=25) (Figure 12.3), but the estimates of effect were imprecise (confidence in the evidence was low). For parent-rated social skills, FaceSay had a large effect (SMD -0.91, 95% CI -1.75 to -0.08, k=1, N=25) (Figure 12.4) (confidence in the evidence was very low).

In the high-functioning ASD group, compared with non-therapeutic computer use, FaceSay had a large effect on children's emotion recognition (SMD -1.43, 95% CI -2.35 to -0.51, k=1, N=24) (Figure 12.5) and facial recognition (SMD -1.23, 95% CI -2.12 to -0.34 , k=1, N=24) (Figure 12.6) and on researcher-rated social skills (SMD -1.34, 95% CI -2.24 to -0.43, k=1, N=24) (Figure 12.7) (confidence in the evidence was low). For parent-rated social skills, there was a small effect in favour of the control (SMD 0.28, 95% CI -0.53 to 1.09, k=1, N=24), but the estimate of effect was imprecise (Figure 12.8) (confidence in the evidence was very low).

12.1.6 Evidence summary

In the low-functioning ASD group, there was very low quality evidence that FaceSay improved social skills (as rated by parents) compared with the control. There was low quality evidence that FaceSay improved social skills (as rated by the researchers), but the evidence of efficacy was inconclusive. There was low quality evidence that was inconclusive as to whether FaceSay improved emotion recognition and facial recognition.

In the high-functioning ASD group, there was low quality evidence that FaceSay improved children's emotion recognition, facial recognition and social skills (as rated by the researchers). There was very low quality evidence that was inconclusive as to whether FaceSay improved social skills (as rated by parents).

12.2 CONCLUSION

The evidence does not currently support the use of computerised social skills training for young people with autistic spectrum disorder. Evidence showed positive effects in children with high functioning ASD but it was of low or very low quality, in part due to the high input of therapists into the treatment.

13 TOURETTE SYNDROME

13.1 VIDEO CONFERENCE BEHAVIOURAL THEAPY

13.1.1 Introduction

Tourette syndrome (TS), a condition of combined motor and vocal tics, and Chronic tic disorder (CTD), singular motor or vocal tics, most commonly occur in childhood, typically around the age of 6 or 7 and tics are at their worst between the ages of 6 and 15 years (Leckman et al, 1998) (Jin et al, 2005). The prevalence in children has been estimated as 0.4-0.7% for TS and 0.6-1.3% for CTD (Kraft et al, 2012) (Scharf et al, 2012) (Khalifa et al, 2005) (1-2% prevalence overall). The majority of children grow out of their tics (Burd et al, 2001) but children with tic disorders experience higher rates of social (Wadman et al, 2013), emotional (Robertson et al, 2002), and educational (Debes et al, 2010) impairments and these undermining factors are likely to have negative consequences in later life.

Behavioural therapy has been shown to be effective for the treatment of tic disorders in children (Piacentini et al, 2010) and may offer an attractive, non-medicated, form of treatment. However, the absence of children from school for clinic appointments, and the associated educational disruption, may dissuade parents from pursuing these types of therapies. Children living in rural locations may be further dissuaded from treatment by the time and inconvenience of travel to central treatment centres. The use of E-mediated therapy may provide an opportunity for behavioural treatments to be conducted with less disruption to school life and increased access for families in living in remote locations.

13.1.2 Included studies

One study investigated whether a behavioural intervention to reduce symptoms of Tourette syndrome: Comprehensive behavioural intervention for tics (CBIT), was as effective when delivered via video conference compared with face-to-face delivery (Himle et al, 2012) (Appendix 10, Table 26). 20 children and young people aged 8-17 years were randomised to receive eight sessions of CBIT over 10 weeks with a therapist via teleconference or with traditional face-to-face interaction. The primary components of the CBIT intervention in both modes of delivery were psychoeducation, habit reversal training, function-based assessment and intervention and relaxation training. Each week, a new tic was targeted and children were encouraged to practice therapeutic activities every day.

13.1.3 Outcomes

The study reports findings for measures of tic severity and the proportion of patients improved on a general clinical rating scale and all results are presented in this review.

13.1.4 Quality of the evidence

The study was well conducted and considered to be at low risk of bias but, due to the very small sample size, outcomes were graded as low quality evidence (Appendix 12, Table 13.1).

13.1.5 Findings

Compared with face-to-face CBIT, video conference CBIT had a similar effect on Total tic score at post-treatment (SMD -0.18, 95% CI -1.11 to 0.75, k=1 N=18) (Figure 13.1) and 4 month follow-up (SMD -0.32, 95% CI -1.32 to 0.67, k=1, N=16) (Figure 13.2) and a similar effect on the proportion of children with clinical global impression-improvement score graded as improved or very much improved at post-treatment (RR 1.07, 95% CI 0.64, 1.77, k=1, N=18) (Figure 13.3) and 4 month follow-up (risk ratio 1.30, 95% CI 0.46 to 3.65, k=1, N=16) (Figure 13.4) (confidence in the evidence was low).

13.1.6 Evidence summary

There was low quality evidence that CBIT delivered via video conference gave similar improvements in tics and overall clinical symptoms compared with face-to-face delivery but the estimates of effect were imprecise and do not provide conclusive evidence of equivalence.

13.2 CONCLUSION

There is currently insufficient evidence to support the use of video conference behavioural therapy as a replacement to face-to-face therapy for children and young people with Tourette syndrome. One study provided low quality evidence that suggested that video conference may be a useful mode of delivery but further research would be required to confirm this finding.

14 PSYCHOSIS

14.1 COMPUTER-ASSISTED COGNITIVE REMEDIATION THERAPY

14.1.1 Introduction

Cognitive remediation therapy has been used to treat a number of mental health disorders, most commonly schizophrenia (Kluwe-Schiavon et al, 2013) and ADHD (chapter 9). It has been tested in young people with psychosis (Ueland et al, 2004) and it is proposed that computerised versions of cognitive remediation may be useful.

14.1.2 Included studies

One study investigated the use of computerised cognitive remediation (CACR) therapy in young people with psychosis or at high risk of psychosis (score below 10th percentile in ≥5 domains of the Repeatable Battery for the Assessment of Neurological Status) (Urben et al, 2012 and Holzer et al, 2013). Thirty two young people (mean age 15.5 SD 1.3) were randomised to a computer game control group or to CACR, which consisted of a computerised cognitive training program (based on the Captain's Log attention training program) that aimed to train attention, concentration, memory, visuospatial and visuomotor skills and conceptualisation. Young people in both groups received two 45 minute sessions per week for 8 weeks and all sessions were facilitated by a psychologist. Outcome was assessed at 9 weeks post-treatment (reported in Holzer et al, 2013) and 6 months follow-up after the end of the intervention (reported in Urben et al, 2012).

14.1.3 Outcomes

Training test outcomes of working memory, executive function and processing speed were reported, in addition to outcomes of symptoms of schizophrenia, psychosocial functioning and general severity. For this review, the symptoms of psychosis, psychosocial functioning and general severity are included but, as for studies of cognitive training in ADHD, training test outcomes are not. Follow-up findings from Urben et al (2012) are reported as medians and SDs, as means were not adequately reported in the paper.

14.1.4 Quality of the evidence

The study was conducted with a high degree of therapist input (a psychologist was present in all sessions) and the independent effect of the program is unclear. There was blinding of outcome assessors but a high rate of attrition (31%) at follow-up time points, and a relatively small sample size (optimum information size >400), therefore the study was considered to be at some risk of bias. Overall, the quality of the

evidence was graded as low for post-treatment and follow-up measures (Appendix 12, table 14.1).

14.1.5 Findings

At post-treatment, CACR and the computer games control had a similar effect on total symptoms of schizophrenia (SMD 0.18, 95% CI -0.52 to 0.88, k=1, N=32) (Figure 14.1), negative symptoms of schizophrenia (SMD 0.14, 95% CI -0.56 to 0.84, k=1, N=32) (Figure 14.2), global psychopathology (SMD 0.10, 95% CI -0.60 to 0.80, k=1, N=32) (Figure 14.3) and psychosocial functioning (SMD -0.07, 95% CI -0.77 to 0.63, k=1, N=32) (Figure 14.4). The control had a small effect on positive symptoms of schizophrenia (SMD 0.26, 95% CI -0.45 to 0.96, k=1, N=32) (Figure 14.5), but the estimate of effect was imprecise.

For the CACR group, the median CGI score at baseline was 5.00 (SD 0.75) and, at follow-up, was 5.00 (SD 1.24). For the control group, the median CGI score at baseline was 4.00 (SD 0.84) and, at follow-up, was 3.50 (SD 1.43). There was no significant difference in post-treatment measures (Wilcoxon signed rank test, numbers not reported).

14.1.6 Evidence summary

There was low quality evidence that was inconclusive as to the benefit of computerised cognitive remediation therapy for total and negative symptoms of schizophrenia, global psychopathology, psychosocial functioning and global clinical severity. There was low quality evidence that was inconclusive as to whether the control improved positive symptoms of schizophrenia.

14.2 CONCLUSION

There is currently insufficient evidence to support the use of computerised cognitive remediation therapy for young people with psychosis or at risk of psychosis. Evidence from a single small study was inconclusive.

15 INTERVENTIONS WITH EVIDENCE OF EFFICACY

15.1 CRITERIA

Computer programs that belong to a class of intervention with low, moderate or high quality evidence of efficacy are presented below with details of their manufacturer, internet requirements and cost. Adherence in research studies is shown to give an indication of the possible acceptability of programs to users.

15.2 COMPUTERISED PROGRAMS WITH EVIDENCE OF EFFICACY

Computerised programs with evidence of efficacy are presented in tables below.

Table 4: cCBT for depression in young people and young adults

Program	Manufacturer/ Developer	Access and Internet requirement	Cost	Controlled studies	Completion of program content			Effect size (95% CI)[4]		Pooled effect size (95% CI)[4]	Evidence quality
					100%[1]	>50%[2]	Mean[3]	Self-rated	Clinician-rated		
SPARX	Metia Interactive University of Auckland	CD-ROM	Not currently available online	Merry 2012 Fleming 2012	60% 69%	86% 81%	_ _	-0.47 (-1.20, 0.25; k=1, N=32)[5]	-2.13 (-3.08, -1.19; k=1, N=30)[6]	MH population Self-rated: -0.49 (-0.73, -0.24; k=7, N=281) Clinician-rated: -1.08	Low Low
Mood Helper	Hosted by Kaiser Permanente Center for Health Research	Internet-based	Freely available online	Clarke 2009	_	_	_	-0.31 (-0.69, 0.06; k=1, N=109)	NR		
The Journey (used in development of SPARX)	Department of Psychological Medicine, University of Auckland	CD-ROM Flash software	A copy is available on request	Stasiak 2012	_	_	_	-0.00 (-0.67, 0.67; k=1, N=34)	-0.52 (-1.2, 0.17; k=1, N=34)		

Think Feel Do	Mental Health Research and Development Unit, The University of Bath[8]	CD-ROM	Unknown	Stallard 2011	–	–	–	-0.71 (-1.79, 0.36; k=1, N=15)	NR	(-1.63, -0.52; k=2, N=64)	
MoodGym	Centre for Mental Health Research at Australian National University	Internet-based Flash 4.0 plug in	Freely available online	MH population Sethi 2010 Ellis 2011 Sethi 2013	– – –	– – –	– – –	-0.92, (-1.38, -0.47; k=3, N=91)[7]	NR		
				General population Calear 2009	33%	62%	63%	-0.15 (-0.27, -0.03; k=1, N=1,280)	NR	General population Self-rated -0.15 (-0.27, -0.03; k=1, N=1,280)	Moderate

	*Information obtained from program manufacturers/developers/authors [1]Proportion of participants who completed 100% of the program [2]Proportion of participants who completed >50% of the program [3] Mean proportion of the program completed by participants [4]Effect size for all studies in class of intervention at post-treatment. Priority given to outcomes with the highest numbers of studies contributing data. [5]Effect size includes only one study (Fleming et al, 2012). Compared to TAU (commonly face to face counselling) self-rated depression SMD -0.23 (95% CI -0.51 to 0.06; k=1, N=187) (Merry et al. 2012). [6] Effect size includes only one study (Fleming et al, 2012). Compared to TAU (commonly face to face counselling) clinician-rated depression SMD -0.11 (95% CI -0.4 to 0.18, k=1, N=187) (Merry et al. 2012). [7]Compared to face to face CBT self-rated depression SMD 1.16 (95% CI -0.78 to 3.09; k=2, N=63) [8]Author hold intellectual property rights

Table 5: cCBT for anxiety in young people and young adults

Program	Manufacturer/ Developer/	Access and Internet requirement	Cost	Controlled studies	Completion of program content			Effect size (95% CI)[4]		Pooled effect size (95% CI)[4]	Evidence quality
					100%[1]	>50%[2]	Mean[3]	Self-rated	Clinician-rated		
BRAVE for Teenagers -ONLINE*	Kids coping project, University of Queensland CCBT limited, health care online Shockmedia	Internet-based Internet explorer 5+ Latest flash plugin	Licences for service users are purchased in blocks, valid for 12 months, with the initial purchase for a block of 10 service user licences costs £1,500. Further licences can be bought in blocks of 10 for £1000. Discounts after 100 licences (to £50 per service user).	Spence 2011	39%	_	75%	0.08 (-0.40, 0.56; k=1, N=71)[5]	-0.94, (-1.44, -0.43; k=1, N=71)[6]	MH population Self-rated: -0.77 (-1.45, -0.09; k=6, N=220) Clinician-rated: -1.09 (-1.49, -0.68; k=2, N=114)	Low Low
Cool Teens	Anxiety Research Unit, Macquarie University	CD-ROM	$59.09 AUD for a complete program kit containing all materials needed for a mental health professional to support a family completing the program.	Wuthrich 2012	98%7	_	_	-0.73 (-1.35, -0.11; k=1, N=43)	-1.35 (-2.02, -0.68; k=1, N=43)		

Think Feel Do	Mental Health Research and Development Unit, The University of Bath9	CD-ROM	Unknown	Stallard 2011	–	–	–	0.15 (-0.88, 1.19; k=1, N=15)	NR		
MoodGym	Centre for Mental Health Research at Australian National University	Internet-based Flash 4.0 plug in	Freely available online	MH population Sethi 2010 Ellis 2011 Sethi 2013	– – –	– – –	– – –	-1.42 (-2.04, -0.81; k=3, N=91)8	NR		
				General population Calear 2009	33%	62%	63%	-0.15 (-0.26, -0.03; k=1, N=1,273)	NR	General population: -0.15 (-0.26, -0.03; k=1, N=1,273)	Moderate

	*Information obtained from program manufacturers/developers/authors [1]Proportion of participants who completed 100% of the program [2]Proportion of participants who completed >50% of the program [3] Mean proportion of the program completed by participants [4]Effect size for all studies in class of intervention at post-treatment. Priority given to self-reported outcomes and outcomes with the highest numbers of studies contributing data. [5]Versus face to face therapy self-rated anxiety SMD -0.22 (95% CI -0.64 to 0.20; k=1, N=88) [6]Versus face to face therapy clinician-rates anxiety SMD -0.13 (95% CI -0.55 to 0.29; k=1, N=88) [7]Self-reported information obtained by telephone calls [8]Versus face to face therapy SMD 0.81 (95% CI -0.39 to 2.01; k=2, N=63) [9]Author holds intellectual property rights

Table 6: cCBT for anxiety in children

Program	Manufacturer/ Developer/	Access and Internet requirement	Cost	Controlled studies	Completion of program content			Effect size (95% CI)[4]		Pooled effect size (95% CI)[4]	Evidence quality
					100%[1]	>50%[2]	Mean[3]	Self-rated	Clinician-rated		
BRAVE for Children-ONLINE*	Kids coping project, University of Queensland CCBT limited, health care online Shockmedia	Internet-based Internet explorer 5+ Latest flash plugin	Licences for service users are purchased in blocks, valid for 12 months, with the initial purchase for a block of 10 service user licences costs £1,500. Further licences can be bought in blocks of 10 for £1000. Discounts after 100 licences (to £50 per service user).	March 2009	33%	_	75%	-0.17 (-0.69, 0.34; k=1, N=59)	-0.55 (-1.07, -0.03; k=1, N=59)	Self-rated: -0.20 (-0.62, 0.21; k=2, N=91) Clinician-rated: -0.75, (-1.27, -0.24; k=2, N=91)	Low
Camp Cope-A-Lot	Temple University and University of Pennsylvania	CD-ROM	Prices range from $200 AUD for an individual purchase package to $2000 for an institutional purchase package for 10 users.	Khanna 2010	_	_	_	-0.26 (-0.95, 0.44; k=1, N=32)[5]	-1.09 (-1.84, -0.34; k=1, N=32)[6]		Very low

	*Information obtained from program manufacturers/developers/authors [1]Proportion of participants who completed 100% of the program [2]Proportion of participants who completed >50% of the program [3] Mean proportion of the program completed by participants [4]Effect size for all studies in class of intervention at post-treatment. Priority given to self-reported outcomes and outcomes with the highest numbers of studies contributing data. [5]Compared to face to face CBT self-rated SMD -0.05 (95% CI -0.73 to 0.64; k=1, N=33) [6]Compared to face to face CBT clinician-rated SMD -0.15 (95% CI -0.83 to -0.54; k=1, N=33

Table 7: cCBT for eating disorders

Program	Manufacturer/ Developer	Access and Internet requirement	Cost	Controlled studies	Completion of program content			Effect size (95% CI)[4,5]	Pooled effect size (95% CI)[4]	Evidence quality
					100%[1]	>50%[2]	Mean[3]			
Student Bodies* (also known as Healthy Body Image)	Stanford University and Washington University in St Louis	Internet-based and smart phone	At present, it is not offered direct-to-consumer, but is sold to universities for $10,000 USD per year as part of the Healthy Body Image platform	Winzelberg 1998 Zabinski 2001	53% 81%	– –	– –	-0.0.4 (-0.32, 0.40; k=2, N=118)[6]	General eating disorders: -0.0.4 (-0.32, 0.40; k=2, N=118)[6]	Low
Student Bodies-BED				Jones 2008 Doyle 2008	27% –	– –	– 30%	BED: -0.13 (-0.43, 0.17; k=2, N=171)[7]	BED: -0.13 (-0.43, 0.17; k=2, N=171)[7]	Low
	*Information obtained from program manufacturers/developers/authors [1]Proportion of participants who completed 100% of the program [2]Proportion of participants who completed >50% of the program [3] Mean proportion of the program completed by participants [4]Effect size for all studies in class of intervention at post-treatment. Priority given to self-reported outcomes and outcomes with the highest numbers of studies contributing data [5]Only self-rated eating disorder outcomes reported in these studies [6]Weight concerns at post-treatment [7]BMI									

Table 8: Cognitive training for ADHD

Program	Manufacturer/ Developer	Access and Internet requirement	Cost	Controlled studies	Completion of program content			Effect size (95% CI)[4]	Pooled effect size (95% CI)[4,5]	Evidence quality
					100%[1]	>50%[2]	Mean[3]			
Captain's Log (attention training)	Braintrain	Downloadable computer software[6]	For home personal use prices range from $295-$695 per year	Rabiner 2010 Steiner 2011	– –	– –	– –	-0.66 (-1.20, -0.12, k=2, N=76)[7]	Population with inattentiveness /ADHD: -0.57 (-0.89, -0.26; k=5, N=174)[6]	Low
Computerised Progressive Attentional Training program (CPAT)	Developed by study authors University of Birmingham	Computer-based software program, NR	Unknown	Shalev 2007	–	–	–	-0.40 (-1.07, 0.27, k=1, N=36)[7]		
Cogmed RoboMemo (working memory training)	Cogmed Cognitive Medical systems	Internet and CD-ROM based versions, NR	Prices range from £480 to £960 per year	Green 2012 Klingberg 2005	– –	– 83%	– –	-0.65 (-1.32, 0.03, k=2, N=62)[7]		
Working memory training program	Unknown name	Unknown	Unknown	Johnstone 2010 Johnstone 2012	– –	– –	– –	-0.45 (-0.99, 0.08, k=2, N=78)[8]	Population with ADHD: -0.45 (-0.99, 0.08, k=2, N=78)[8]	Low

	*Information obtained from program manufacturers/developers/authors [1]Proportion of participants who completed 100% of the program [2]Proportion of participants who completed >50% of the program [3] Mean proportion of the program completed by participants [4]Effect size for all studies in class of intervention at post-treatment. Priority given to self-reported outcomes and outcomes with the highest numbers of studies contributing data. [5]Mixture of self, parent, teacher and researcher-rated outcomes [6]Internet requirements: Pentium 166 or higher PC compatible processor, Windows XP / Vista / 7, 2.2 GB of Hard drive space, 32 MB of RAM, VGA Colour Monitor (if laptop, requires Active Matrix), 8X CD-ROM drive (not required for download version), USB mouse (requires USB port), Soundcard, Headphones or External Speakers [7]Attention [8]Symptoms of ADHD (attention not reported in these studies)

Table 9: Parent training for conduct disorder

Program	Manufacturer/ Developer	Access and Internet requirement	Cost	Controlled studies	Completion of program content			Effect size (95% CI)[4]		Pooled effect size (95% CI)[4]	Evidence quality
					100%[1]	>50%[2]	Mean[3]	Parent-rated	Clinician-rated		
Triple P Online*	Collaboration between: Liquid Interactive University of Queensland Triple P International Pty Ltd	Internet-based Broadband connection	Available in the UK for purchase by government agencies and non-government organisations. Bulk purchase prices: 0-500 = £59.95 per access code. 501-1000 = £49.95 per access code.1001+ = £39.95 per access code. Access codes are one per family. Codes are valid for one year, but can be renewed if they have not been used within this period. Once activated, codes are valid for 4 months.	Sanders 2012	47%	67%	_	-0.88 (-1.27, -0.50; k=1, N=116)[5]	0.01 (-0.57, 0.60, k=1, N=45)[6]	Parent-rated: -0.78 (-1.07, -0.49; k=2, N=202)[5] Clinician-rated: 0.01, (-0.57, 0.60, k=1, N=45)[6]	Low Low

Internet-Comet parent training program*	Uppsala University, Department of Psychology, Stockholm; and Social Services, PLUS, Stockholm, Sweden	Internet-based No specific technocological requirements	No cost for the parents for participating[a]	Enebrink 2012	65.5 %	_	_	-0.65 (-1.08, -0.21; k=1, N=86)[5]	NR		
	*Information obtained from program manufacturers/developers/authors [a]Unclear if this relates to the program being freely available for parents in general or only for parents participating in the studies [1]Proportion of participants who completed 100% of the program [2]Proportion of participants who completed >50% of the program [3] Mean proportion of the program completed by participants [4]Effect size for all studies in class of intervention at post-treatment. Priority given to self-reported outcomes and outcomes with the highest numbers of studies contributing data [5]Parent-rated frequency of problem behaviours [6]Clinician-rated behavior on observation during clinic. Only conducted on subset of participants										

Table 10: Computer programs for substance abuse

Program	Manufacturer/ Developer	Access and Internet requirement	Cost	Controlled studies	Completion of program content			Effect size (95% CI)[4,5]	Pooled effect size (95% CI)[4]	Evidence quality
					100%[1]	>50%[2]	Mean[3]			
Programs without normative feedback										
MADtalk* (mother and daughter program)	Columbia University	CD-ROM and Internet-based versions High-speed internet connection	Cost is unknown - Available for licensing and sponsored research support	Schinke 2009a Schinke 2009b Fang 2010 Fang 2012[6]	– 97% – 96%	– – – –	– – – –	Alcohol: -0.25 (-0.35, -0.15; k=3, N=1,464)[7] Smoking: -0.45 (-0.92, 0.01; k=3, N=1,500)[7]	Alcohol: -0.18 (-0.29, -0.07; k=6, N=3,571)[7] Smoking: -0.21 (-0.42, 0.01; K=6, N=6,580)[7]	Low Low
RealTeen	Columbia University Berlin productions	Internet-based NR	Unknown	Schwinn 2010a	92%	–	–	Alcohol: -0.29 (-0.55, -0.03; k=1, N=236)[7] Smoking: 0.03 (-0.23, 0.29; k=1, N=219)[7]		

Prevention program	Unknown	CD-ROM	Unknown	Schinke 2004b Schwinn 2010b[6] Schinke 2010[6]	95% – –	– – –	– – –	Alcohol: -0.15 (-0.36, 0.06, k=1, N=321)[7] Smoking: -0.06 (-0.27, 0.15; k=1, N=351)[7]		
Computerised version of Healthy Schools and Drug Project	Unknown	Unknown	Unknown	Koning 2009 Koning 2011[6]	– –	– –	– –	Alcohol: 0.00 (-0.14, 0.14; k=1, N=1,550)[7]		
Consider This	Klein Buendel Inc	Internet-based Unknown	Unknown	Buller 2008a	26%	–	59%	Smoking: -0.07 (-0.23, 0.09; k=1, N=1,510)[7]		
Computerized Adolescent Smoking Cessation Program (CASCP)*	Self-developed by author Veterans Administration Medical Center	CD-ROM Unknown	Not currently marketed or manufactured	Fritz 2008	–	–	–	Smoking: -0.58 (-1.33, 0.17; k=1, N=121)[8]	Smoking: -0.58 (-1.33, 0.17; k=1, N=121)[8]	Low
Normative feedback programs										

SafeTeens (screening and brief intervention)	Unknown	Touch screens, audio via headphones	Unknown	Walton 2010	_	_	_	Alcohol: RR 0.91 (0.70, 1.20; k=1, N=417)[9]	Alcohol: RR 0.91 (0.70 to 1.20; k=1, N=417)[9]	Low
Your decision counts (normative feedback program)	Pro-change Behavior-systems	Internet-based (CD-Rom for multi-media components to minimized download time)	Unknown	Evers 2012	_	_	_	Alcohol: RR 0.92 (0.84, 1.01; k=1, N=597)[10]	Alcohol: RR 0.92, (0.84, 1.01; k=1, N=597)[10]	Low
	*Information obtained from program manufacturers/developers/authors [1]Proportion of participants who completed 100% of the program [2]Proportion of participants who completed >50% of the program [3] Mean proportion of the program completed by participants [4]Effect size for all studies in class of intervention at post-treatment. Priority given to self-reported outcomes and outcomes with the highest numbers of studies contributing data [5]Only self-reported outcomes presented in these studies [6]Follow-up study [7]1 year follow-up [8]Post-treatment [9]Proportion with alcohol use disorder at 6 month follow-up [9]Remission from any substance use at 14 month follow-up									

15.3 SERVICE USER VIEWS

15.3.1 Introduction

It was considered essential that the views of children and young people should inform this review. The objective was to capture their views on computer and internet delivered therapies which are designed to support young people with mental health problems.

Two focus groups were convened to gain an understanding of what aspects and features of computer delivered therapy young people would find engaging and helpful. The full report on the focus groups can be found in Appendix 14. The following is a summary of the process and findings.

15.3.2 Aim

The aim of the focus groups was to obtain feedback on features of e-therapies products in general, not on specific products. The focus groups were not intended to be primary research but to capture the views of children and young people overall, as they could not be part of the expert advisory group due to age restrictions.

15.3.3 Method

The method used for recruiting the focus groups is set out in section 3.6.

In the first part of each of the focus groups, participants had the opportunity to explore four specific therapeutic computerised programs designed to support young people with anxiety and depression, either in pairs or alone. The programs were BRAVE for teenagers, Cool Teens, MoodGym and SPARX, and were chosen because they were found to have some efficacy.

This was followed by a general discussion focusing upon the participants' views of the programs in general, particularly what features they found helpful or unhelpful. To inform this discussion, the EAG had provided the facilitator with questions for participants to consider (Table 11). All participants were given copies of the questions as well as the opportunity to discuss them with the focus group facilitators.

Table 11: Questions considered by the focus groups

1 Of the products you have tried: • Would you ever use any of them? • Why? • What did you like about them?

- What features work best?
- What did you not like about them?

2 Would you prefer to use products you can use alone or with a therapist?

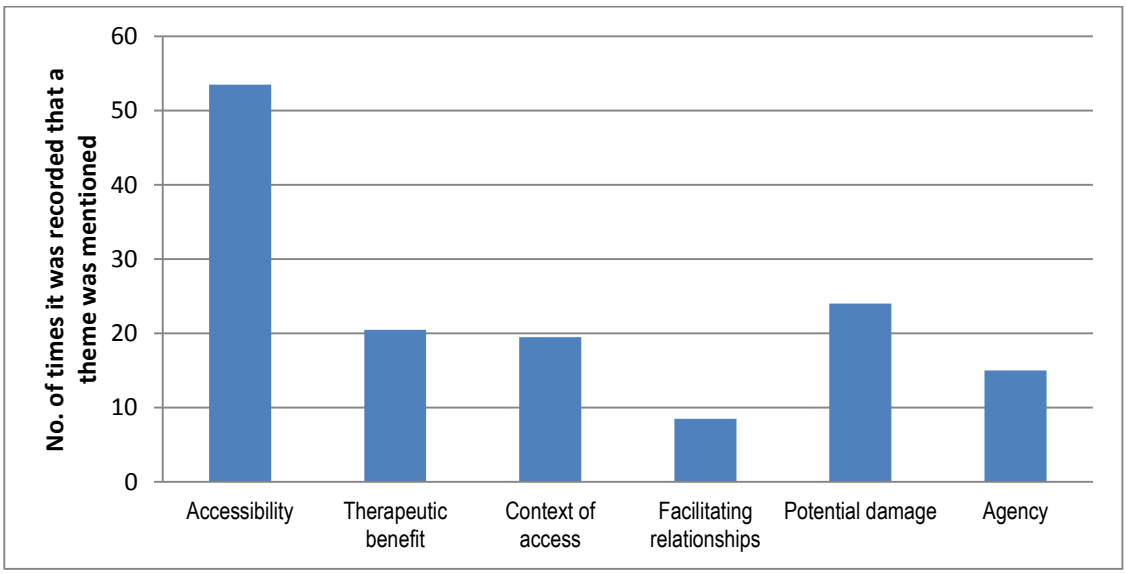
3 Have you ever used products like these?

Notes of the discussion were transcribed after the groups by YoungMinds, partly from audio recordings of the groups and partly from written notes made by participants. The information was anonymised before synthesis.

15.3.4 Summary of findings

The overall reaction to the computer programs was very positive and participants were quick to engage with the products. This age group of young people have grown up in an electronic age and appeared to instinctively appreciate the value of computerised support with mental health issues.

Figure 15.1: Themes identified in focus group discussions



Six main themes were identified by YoungMinds: audience appeal and relevance , facilitating relationships, perceived therapeutic benefit, potential damage, context and agency (being able to control your own care). Figure 15.1 shows the number of times each theme was mentioned. The following views were expressed by participants in each of the theme areas.

Audience appeal and relevance

The immediate accessibility and being 'engaging' is the main basis upon which participants established a preference for one product over another. The following points were considered important:

- the look and feel of the program, which significantly affects whether or not people engage
- programs need to:
    - feel up-to-date
    - have 'personality'
    - be designed for children and young people rather than older adults
    - be accessible to a wide variety of people
    - be user friendly and easy to navigate
- the pace of the program is important; too slow can be boring but too fast can accentuate anxiety.

Perceived therapeutic benefit

Participants commented on whether or not the programs they tried could potentially help someone to cope with anxiety or depression. It was agreed that computer programs like the ones they tried have the capacity to:

- reinforce positive thoughts
- help with social anxiety
- provide re-assurance that you are not a 'freak' or alone
- facilitate the opportunity for people to reflect on negative thoughts and experiences in a 'safe' way
- help in coping with perceived stigma
- support emotional well-being
- provide distraction from distress.

Context

The context in which the program could be used was identified as being critical to whether or not they would be effective. Contributing factors identified were:

- location and situation where the package is used is important
- to be most effective, programs need to be part of a wider package of care
- face to face contact needs to be provided alongside the use of a computer program
- therapist recommendation would make people more likely to engage with a product and less likely to disengage as quickly as they might otherwise.

Facilitating relationships

The group spoke extensively about the importance of human relationships in helping young people engage with the resources. They felt that whilst it is not possible to completely replace a person with a machine, there are ways in which a human relationship can be part of the experience of using programs, for example:

- relationship focused programs with real or simulated professional guidance
- online mentoring, which some had tried and found helpful
- contact with a 'trainer' on line
- photos or video clips of online trainers make them easier to engage with.

Potential harm

Participants identified ways in which computer programs may be potentially damaging or may dissuade them from any future use. They were concerned that programs may in some circumstances:

- leave people feeling 'pathologised'
- open up difficult emotions without professional support
- lead to someone self diagnosing more serious problems
- briefings for schools and parents could be helpful in preventing this.

Agency

The young people in the focus group discussed several points which related to the concept of agency: the importance of being able to take control of your own care. They felt that computer programs can contribute to this and help with learning about the issues that are affecting them, taking care of their own care and setting goals for the future.

15.3.5 Conclusion

The focus groups provided a valuable insight into the aspects of computer and internet delivered therapies that children and young people find engaging. It is clear from the focus groups that the development of e-therapies must take into account the views of children and young people, and that without this there is a risk that they will not be used for a sufficient period of time to have a beneficial effect. Researching efficacy of programs is critical, but the views of children and young people must also play a significant part in future research.

16 DISCUSSION

16.1 SUMMARY OF THE EVIDENCE

63 studies contributed data to this review. The evidence was predominantly of low quality, with limited data, inadequacies in study design and unreliable outcome measures being major contributors to quality downgrading. The volume of evidence for most programs or e-mediated therapies was small and, on reviewing all the evidence, the expert group came to the view that no individual product or e-mediated therapy was supported by strong enough evidence to recommend their use within the NHS. As can be seen from the review, no product demonstrated a combination of large effect sizes, high quality data and multiple evaluations. At best, some product evaluations showed moderate or low quality evidence on a small number of trials with small effects. The expert group believed the data, as such, was insufficient to support individual product recommendations. However, from the meta-analytic reviews, combining the data from different products of similar interventions, the expert group believed the evidence was more robust and demonstrated what might be termed 'proof of concept' or 'proof of principle'.

The strongest evidence was for cCBT programs for depression in young people, where there appeared to be promise that these types of interventions could reduce depression in mild to moderately depressed populations and also reduce average levels of depression in general populations. Similarly, for cCBT programs for anxiety in young people, there was promise that intervention could reduce anxiety in general populations and some evidence that anxiety could be reduced in young people with mild to moderate anxiety disorders. For cCBT programs for anxiety disorders in children, there was less data and the evidence was weaker.

Other interventions with promise were cognitive training for children primarily with diagnosed ADHD (all studies in children with ADHD except one in children with inattentiveness), computerised parent training for parents of children with behavioural problems and computerised interventions for substance misuse in general populations, where there was consistent evidence of efficacy. However, for substance misuse, evidence was predominantly from the US and its applicability was questionable and, particularly for substance misuse and parent training, the outcomes assessed had high potential for bias.

For other interventions, evidence of efficacy came only from single studies, the majority of which were small. A number of single studies suggested potential efficacy for e-mediated delivery of therapies: online group CBT for depressive symptoms, online group CBT for populations at risk of eating disorders, video conference CBT for diagnosed depression, video conference CBT for diagnosed OCD, video conference behaviour therapy for diagnosed Tourette syndrome or chronic tic disorder and online support group for low to moderate psychological distress. Other interventions with

suggestion of potential efficacy in single studies were cCBT for diagnosed social anxiety disorder and computerised social skills training for diagnosed autism.

For the remaining interventions, findings were inconclusive. This included those assessed in single studies: computerised problem solving therapy for mild to moderate anxiety or depression, mobile phone application for mild or moderate mental health difficulties, computerised exposure for diagnosed spider phobia, CBM-I for spider phobia, CBM-I for OCD, computerised psychoeducation for populations at risk of eating disorders, cCBT for possible PTSD (unintentional traumatic injury) and cognitive training for diagnosis or risk of psychosis, and those assessed in more than one study: attention bias modification and cognitive bias modification of interpretation for symptoms of anxiety or social or test anxiety, cCBT for general eating disorders and cCBT for BED in general/at risk populations. For the majority of these interventions, the evidence was of low quality and their effectiveness is still uncertain. For ABM and CBM-I, some evidence was of moderate quality, suggesting with slightly more confidence the lack of benefit of this intervention.

At the time of this review there were no randomised control trials for interactive applications for smart phone or tablet based applications.The focus groups in young people of cCBT programs for anxiety and depression identified a number of important issues such as the need for products to be engaging and up-to-date, the desire to set their own goals and be active in their therapy, the desire for continued contact with therapists and the importance of endorsement by medical professionals.

16.2 CONCLUSIONS AND PRINCIPLES FOR PRACTICE

The evidence from these meta-analyses, demonstrated that evidence based psychological therapies, CBT in particular, can be delivered in computerised formats effectively. This optimistic conclusion provides the basis for recommending investment in product development and robust evaluation (see later). Considering the evidence for e-mediated therapies, such as videoconferencing and chat rooms, the expert group concluded that there was some evidence to support the further innovation, development and evaluation of these interventions, specifically developed for different groups of children and young people. Issues raised in the focus groups were considered applicable to the use and development of cCBT programs and, also, as general principles for creating acceptable e-therapy interventions.

The implementation and development of products and interventions was discussed and, on consideration of the review and focus group findings, some general principles for the implementation of interventions were highlighted:

New medias can be exploited, for example, the use of chat rooms are likely to suit many young people who are completely at ease with the use of social media.

There is currently limited free availability. At the present time, the majority of emerging e-therapies are funded by private companies who also evaluate their own product. The resulting e-therapy packages are owned by the private company and are usually fairly costly for the end user or the NHS and, therefore, availability is usually limited.

Investment is needed. There is clearly a need for substantial investment in the development and design stage, as well as the translation of evidence-based face-to-face therapies and development of content. Equally important is the need for investment in a more comprehensive, high quality evaluation of form and content.Evaluation in routine clinical settings as well as research settings is desirable. Where e-therapy interventions are used, commissioners should promote ongoing data collection and results should be shared.

Design and presentation are important. From the two focus groups undertaken by Young Minds, we have gained some understanding of service users/potential service users' focus with regard to computerised psychological therapies. The most important issue is the design and presentation of the package, making it interactive, engaging and up to date with current new technology.

Specialist input is likely to be needed. This is a fast moving field with rapidly changing software products and hardware and new smart phone technology. This means that developing on line or computer therapies will need specialist input in designing software, as well as specialist psychological input for the content of programs and, for evaluation, both aspects need to be tested/evaluated.

Evaluation of new products should include assessment of product design, psychological content and acceptability – For the studies included in this review, the evaluation has not included an assessment of the software, its acceptability or 'customer orientation'. The focus group feedback confirms the need for the acceptability of software to be evaluated alongside the evaluation of content.

There needs to be robust, continued, evaluation of research. E-therapies are a rapidly expanding field in that the development and evaluation of simple on line therapies are manageable within a PhD or even a masters. There are, therefore, a rapidly growing number of products and a torrent of papers on e-therapies. High volume but low quality publications leads to a high noise to signal ratio and, from this analysis, it is clear that many studies are of low and very low quality.

Evaluation needs to take cost into account. It is essential for products to be subject to health economic evaluations.

E-therapies need to be integrated with other services. From focus group discussions, it was evident that young people want e-therapies to be a part of the help they are offered, not a replacement for face-to-face therapies, and to foster a young person's autonomy and agency.

17 APPENDICES

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APPENDIX 1: SCOPE FOR THE DEVELOPMENT OF THE REVIEW

1 Review title

MindEd e-therapies package: analysis of research evidence and directory of e-therapies

1.1 Short title

E-therapies research evidence and directory

2 The remit

The MindEd Consortium is developing an e-portal to provide interactive e-learning programmes for staff working with children and young people with mental health problems. The project is funded by the Department of Health and will include the following:

- universal e-learning packages for non-NHS staff, for example, social workers, policy officers, prison staff and faith groups
- universal and specialist e-learning packages for a range of NHS staff
- an e-therapies package featuring computer-based applications and e-mediated therapies
- learning modules for the CYP IAPT curriculum
- development and updating of the Healthy Child Programme.

The National Collaborating Centre for Mental Health has been asked to develop the e-therapies package, which includes an evidence review of e-therapies with additional information on the range of e-therapies currently available.

3 Need for the review

3.1 Epidemiology

According to the Office for National Statistics (ONS)[1], 9.6% of children and young people between the ages of 5 and 16 have a mental health problem. Around half (5.8%) have conduct disorder; 4.2% have an emotional disorder (anxiety or depression); 1.5% have severe attention deficit hyperactivity disorder (ADHD); and 0.4% a psychotic disorder. In the UK, the prevalence of self-harm in young people age 15 to 16 years is high: 11.1% among girls and 3.2% in boys, with a life-time prevalence of 16.7% and 4.8%, respectively, according to an international survey. Autism, once thought to be an uncommon developmental disorder, has a prevalence rate of at least 1% of the child population; this is often accompanied by at least one other disorder that impairs psychosocial functioning, such as intellectual disability (IQ below 70), which coexists in approximately half of all children and young people with autism.

Promoting good mental health and intervening early, particularly in the crucial childhood and teenage years, can help mental health problems from developing and can help lessen their effects.

3.2 Current practice[1]

While many children and young people experience mental health problems, and some are apparently minor, if these problems are unrecognised or neglected this may lead to a range of further problems, potentially undesirable behaviours and mental-health morbidity in adolescent and adult life. Early recognition and response can avert these problems and improve outcomes. More serious mental health problems may go unrecognised until a late stage in their development, leading to unnecessary morbidity, occasionally mortality and, frequently, undesirable outcomes for the individual and society. Prompt recognition and easy access to the appropriate professional help can avoid unnecessary harm to the individual, their families, peers and society. It is also important to recognise our communal responsibility to positively address the psychological development and emotional wellbeing of otherwise normal children and young people. It is noted that children and young people with mental health needs (and those with other issues) may receive interventions from a range of services across mental health, social care, education, youth justice, health and the voluntary sector. Knowledge, skills gaps and inconsistencies have been identified across sectors. It is essential that all the stakeholders involved in the care of children and young people deliver similarly consistent advice about emotional wellbeing to parents, carers and families. These issues can and should be addressed by the provision of effective, accessible training materials. There have been a number of initiatives and reviews relating to children's and young people's health (referred to as children throughout document) and emotional wellbeing in recent years that have highlighted the need to provide services and support that will promote the long term emotional health of children and their families.

4 The review

This scope defines what the review will (and will not) examine, and what the reviewers will consider.

4.1 Technology

Reviews of the evidence will focus on computer-based applications and e-mediated therapies.

[1] This section is an extract from the MindE*d* E-portal Proposal 2012.

4.1.1 Computer-based applications

a) Evidence will be collected on computer-based applications that can be used by children and young people independently or with the support of a carer or practitioner. This will include applications relevant to all mental health problems.
b) Standards will be produced to enable people to judge the quality of applications, in areas where the evidence allows.
c) A review of published evidence on the effectiveness of computer-based applications will support the above.

4.1.2 E-mediated therapies

a) A review of published evidence will be carried out on the effectiveness of e-mediated therapies.

4.1.3 These two areas of technology may be:

a) Computer, internet or e-mail based (such as computer-assisted instruction, software, online therapy, social media, computerised CBT or other low-intensity e-enabled interventions)
b) Telephone based (such as text messages, apps, tele-health, telemedicine or telepsychiatry).

4.2 Population

4.2.1 Inclusions

a) Children and young people (aged 5 to 18) with mental health problems.
b) Consideration should be given to the particular needs of black and minority ethnic groups (with possible poor access and uptake of interventions).

4.2.2 Exclusions

The review will not specifically search for literature or e-therapies where the primary problem being addressed is:

a) a speech or language difficulty
b) a physical health problem.

4.3 Audience

The review will focus on providing information on e-therapies that is relevant to the following audiences:

a) NHS staff such as paediatricians, health visitors, nurses, children's counsellors, general practitioners, psychologists and nurses.

b) NHS staff with a specific focus on children and young people with mental health problems.
c) Non-NHS staff such as teachers, the police, youth workers, clergy, special education needs coordinators, young offender institution staff, social workers, early years professionals, educational psychologists and school and further education counsellors.
d) Although the e-portal is not specifically designed for children/young people and families/carers, they may use it as a source of information.

4.4 Therapeutic interventions

4.4.1 Inclusions

a) E-therapies included will be limited to ones that provide interventions specifically aimed at children and young people with mental health problems, rather than applications aimed at improving general wellbeing in all children.
b) These e-therapies will include a range of modalities, for example, psychosocial interventions, self-care, self-help, problem solving therapy and behavioural therapies.

4.4.2 Exclusions

The following interventions will not be included:

a) applications for assessment or testing the validity of a diagnosis
b) pharmacological treatments
c) standard face-to-face psychological interventions
d) interventions specifically designed for speech and language difficulties
e) applications to improve adherence to medication
f) mental health information websites.

4.5 Economic considerations

Cost effectiveness of specific interventions may be included where economic evidence is available. Further advice will be sought from the Expert Advisory Group and Health Economist when the review is underway.

APPENDIX 2: DECLARATIONS OF INTERESTS BY EXPERT ADVISORY GROUP MEMBERS

With a range of practical experience relevant to the e-therapies systematic review in the EAG, members were appointed because of their understanding and expertise in healthcare for children and young people with mental health conditions and support for their families/carers, including: scientific issues; health research; the delivery and receipt of healthcare, along with the work of the healthcare industry; and the role of professional organisations and organisations for children and young people with mental health conditions and their families/carers.

To minimise and manage any potential conflicts of interest, and to avoid any public concern that commercial or other financial interests have affected the work of the EAG and influenced guidance, members of the EAG must declare as a matter of public record any interests held by themselves or their families which fall under specified categories (see below). These categories include any relationships they have with the healthcare industries, professional organisations and organisations for children and young people with mental health conditions and their families/carers.

Individuals invited to join the EAG were asked to declare their interests before being appointed. To allow the management of any potential conflicts of interest that might arise during the development of the guideline, EAG members were also asked to declare their interests at each EAG meeting throughout the guideline development process. The interests of all the members of the EAG are listed below, including interests declared prior to appointment and during the guideline development process.

Categories of interest to be written in third person

Paid employment

Personal pecuniary interest: financial payments or other benefits from either the manufacturer or the owner of the product or service under consideration in this guideline, or the industry or sector from which the product or service comes. This includes holding a directorship or other paid position; carrying out consultancy or fee paid work; having shareholdings or other beneficial interests; receiving expenses and hospitality over and above what would be reasonably expected to attend meetings and conferences.

Personal family interest: financial payments or other benefits from the healthcare industry that were received by a member of your family.

Non-personal pecuniary interest: financial payments or other benefits received by the EAG member's organisation or department, but where the EAG member has not personally received payment, including fellowships and other support provided by the

healthcare industry. This includes a grant or fellowship or other payment to sponsor a post, or contribute to the running costs of the department; commissioning of research or other work; contracts with, or grants from, NICE.

Personal non-pecuniary interest: these include, but are not limited to, clear opinions or public statements you have made e-therapies, holding office in a professional organisation or advocacy group with a direct interest in e-therapies, other reputational risks relevant to e-therapies.

Guideline Development Group – declarations of interest	
Prof Peter Fonagy	
Employment	Chief Executive, the Anna Freud Centre; and Freud Memorial Professor of Psychoanalysis, University College London
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Non-personal non-pecuniary interest	None
Action taken	None
Prof Tim Kendall	
Employment	Director, NCCMH Medical Director, Sheffield Health; and Social Care Trust Consultant Adult Psychiatrist
Personal pecuniary interest	Grant holder for £1.44 million per year (approx) from NICE for guidelines work. Work with NICE International. Undertake some research into mental health, and the mental health workforce for DH, Royal College of Psychiatrists and the academy of medical royal colleges.
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Non-personal non-pecuniary interest	None
Action taken	None

Dr Dickon Bevington	
Employment	NHS consultant in Child and Adolescent Psychiatry, with secondments to Anna Freud Centre charity and Cambridge and Peterborough CLARHC (Collaboration for Leadership and Applied Research in Health and Care)
Personal pecuniary interest	EX-Partner at Psychiatry-UK, a web-based chamber of psychiatrists – pro bono advisory role only, No earnings.
Personal family interest	None
Non-personal pecuniary interest	Developer of open-source wiki-based treatment manuals (http://tiddlymanuals.com) as leader of the AMBIT project at Anna Freud Centre, which charges for trainings. NHS substance use team is developing a substance use assessment signposting and motivational and planning app for youth.
Personal non-pecuniary interest	Active member of open source wiki development groups (Tiddlyspace and Tiddlywiki).
Action taken	None
Dr Cathy Creswell	
Employment	Principal research fellow, School of Psychology and Clinical Language Science, Reading University
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	Supervises a project which involves the evaluation of BRAVE-online which has been made available for the project free of charge. Member of the British Association of Behavioural and Cognitive Psychotherapies (BABCP). Member of British Psychological Society (BPS).
Action taken	None
Prof Christopher Fairburn	
Employment	Wellcome Principal Research Fellow, Centre for Research on Dissemination at Oxford (CREDO)
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	Supported by a Wellcome Principal Research Fellowship (046386). Research on dissemination supported by a Wellcome Strategic Award (094585).
Personal non-pecuniary interest	None
Action taken	None

Dr Peter Fuggle	
Employment	Clinical Director CAMHS, Islington Child and Adolescent Mental Health Service; and Consultant Clinical Psychologist, the Anna Freud Centre
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Action taken	None
Dr Daphne Keen	
Employment	Consultant Developmental Paediatrician, St Georges Hospital London
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Action taken	None
Dr Raphael Kelvin	
Employment	Consultant and Associate lecturer, Cambridgeshire and Peterborough NHS Foundation Trust and University of Cambridge. Seconded to the MindEd e portal Consortium, as Consortium Clinical Lead. Previously (2009-2012) seconded to the Department of Health, England as National Advisor for Children and Adolescent Mental Health.
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Action taken	None
Dr Stephanie Lamb	
Employment	GP Principal, Herne Hill Group Practice and the Well Centre
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None

Personal non-pecuniary interest	None
Action taken	None
Dr Linnea Larsson	
Employment	Project Manager, NCCMH
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Action taken	None
Ms Christina Loucas	
Employment	Research Assistant, NCCMH
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Action taken	None
Dr Margaret Murphy	
Employment	Consultant Child and Adolescent Psychiatrist, Cambridgeshire and Peterborough NHS Foundation Trust; Consortium member, CYP MindEd e-portal Consortium; and Chair, Child and Adolescent Faculty Executive Committee, Royal College of Psychiatrists
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Action taken	None
Ms Sabrina Naqvi	
Employment	Project Manager, NCCMH
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Action taken	None
Action Taken	None

Dr Mary Pennant	
Employment	Systematic Reviewer, NCCMH
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Action taken	None
Prof Steve Pilling	
Employment	Director, NCCMH
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	Application for a grant for an intervention in several health clinics to improve mood and sexual health
Personal non-pecuniary interest	None
Action taken	None
Ms Kathryn Pugh	
Employment	Programme Lead, Children and Young People's Improving Access to Psychological Therapies (IAPT), NHS England
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Action taken	None
Ms Susan Ringwood	
Employment	Chief Executive, BEAT
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Action taken	None
Ms Christine Sealey	
Employment	Associate Director (Operations), NCCMH
Personal pecuniary interest	None
Personal family interest	None

Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Action taken	None
Ms Sarah Stockton	
Employment	Senior Information Scientist, NCCMH
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Action taken	None
Dr Craig Whittington	
Employment	Associate Director (Clinical Effectiveness), NCCMH
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Ms Philippa Williams	
Employment	Service user and carer representative
Personal pecuniary interest	None
Personal family interest	None
Non-personal pecuniary interest	None
Personal non-pecuniary interest	None
Action Taken	None

APPENDIX 3: CONSULTEES AND EXPERTS WHO SUBMITTED COMMENTS IN RESPONSE TO THE CONSULTATION DRAFT OF THE REVIEW

Centre for Emotional Health, Macquarie University

Griffith University, Australia (Brave for Teenagers and Brave for Children Developers)

MindEd Core Content

Mood Gym, Australian National University

University of Auckland

APPENDIX 4: RESEARCHERS CONTACTED TO REQUEST INFORMATION ABOUT UNPUBLISHED OR SOON-TO-BE PUBLISHED STUDIES

Table 12: Researchers contacted to request information about unpublished or soon-to-be published studies

Registration Number	Title	Researcher Contacted	Email address	Date email sent	Response
Eating disorders					
NCT00934583	Internet-Based Intervention for Preventing Eating Disorders	Craig Barr-Taylor	b.taylor@stanford.edu	06/06/2013	06/06/2013 – Data not obtained.
NCT00877786	Online Cognitive Behavioral Therapy for Bulimia Nervosa	Cynthia Bulik	cbulik@med.unc.edu	06/06/2013	06/06/2013 – Data not obtained.
NCT00050037	Cognitive Therapy for Binge Eating Disorder	Cynthia Bulik	cbulik@med.unc.edu	06/06/2013	06/06/2013 – Data not obtained.
NCT01832792	Guided Self-help for Binge Eating	Paul Jenkins	paul.jenkins@oxfordhealth.nhs.uk	06/06/2013	06/06/2013 – Data not obtained.
Autism					
NCT01565629	Computer-Assisted Cognitive-Behavioral Treatment for Anxiety Disorders in Children With Autism Spectrum Disorders (CCAL)	Eric Storch	estorch@psychiatry.ufl.edu; estorch@health.usf.edu	06/06/2013	06/06/2013 – Data not obtained
Anxiety					
NCT01416805	Computerized Cognitive Behavioral Therapy for Childhood Anxiety in Community Health Centers	Eric Storch	estorch@psychiatry.ufl.edu; estorch@health.usf.edu	06/06/2013	None.
NCT01533402	Cognitive Behavior Therapy (CBT) for Children Age 8-12	Eva Serlachius	eva.serlachius@ki.se	06/06/2013	09/06/2013 – Data not obtained.

	Years With Anxiety Disorders				
NCT01402258	Computer Internet-administrated Treatment of Anxiety Symptoms for Young Adults (NOVA-IV)	Gerhard Andersson	gerhard.andersson@liu.se	06/06/2013	06/06/2013 – Data not obtained.
NCT01816204	Therapist Assisted Online Treatment for Anxiety	Geoffrey Lee	leega@ufl.edu	07/06/2013	07/06/2013 – Data not obtained.
NCT01181583	Treatment Study for Rural Latino Youth With Anxiety	Denise Chavira	dchavira@ucsd.edu	07/06/2013	07/06/2013 – Data not obtained.
Depression					
NCT01582581	Technology-assisted Treatment of Adolescent Depression (iTAD)	Rocio Chang	CHANG@uchc.edu	07/06/2013	None.
NCT00985686	Adolescent Depression Treatment Program (LEAP Project)	Sabine Moritz	s.moritz@cinim.org	07/06/2013	None.
NCT01783652	Adapted and Translated, Adolescent Depression, Internet Intervention	David Chim	dchim@hku.hk	07/06/2013	None.
PTSD					
NCT01653288	"Coping Coach," a Web-based Preventive Intervention for Children	Nancy Kassam-Adams Kristen Kohser	nlkaphd@mail.med.upenn.edu. kohser@email.chop.edu	07/06/2013	None.
OCD					
NCT01809990	Internet-delivered CBT for Adolescents With Obsessive-Compulsive Disorder	Eva Serlachius	eva.serlachius@ki.se	06/06/2013	09/06/2013 – Data not obtained.
Conduct problems					
NCT01822392	On-line Treatment for Conduct Problems	Sarah Rabbitt	sarah.rabbitt@yale.edu	11/06/2013	None.

Mental health problems in individuals with physical health problems					
NCT01510236	Self-help Program Via Internet for Adolescents With Cancer	Annika Lindahl-Norberg	Annika.Lindahl.Norberg@ki.se	06/06/2013	None.
NCT01543815	Well-Being Therapy by Personalized Mobile Technology Program for Psychological Distress and Promote Healthy Behaviors	Angelo Compare	angelo.compare@unibg.it	06/06/2013	None.
PTSD = Post-traumatic stress disorder; OCD = Obsessive-Compulsive Disorder					

APPENDIX 5: RESEARCHERS CONTACTED FOR INCOMPLETE DATA

Table 13: Researchers contacted for incomplete data

Dr Nader Amir

Professor Yair Bar-Haim

Professor Laura K. Bosworth

Dr Jennifer C. Britton

Dr David B. Buller

Dr Caroline Campbell

Dr Sharon Eldar

Professor Kenneth W. Griffin

Dr Alexandre Heeren

Dr Stuart J. Johnson

Professor Kenneth C. Kirkby

Dr Ronald F. Maio

Dr Cameron D. Norman

Professor Steven P. Schinke

Professor Lilach Shalev

Dr Miriam Silver

Professor Paul Stallard

Professor James W. Tanaka

Professor Bethany A. Teachman

Dr Tony T. Wells

Dr Christina Whalen

APPENDIX 6: REVIEW PROTOCOL

Table 14: E-therapies systematic review protocol

Topic	**E-therapies systematic review**	
Review questions	For children and young people (<18 years) what is the effectiveness of e-therapies (including e-mediated and computer-based therapies) for mental health outcomes?	
Objectives	To evaluate the effectiveness of mental health therapies that are: - Delivered using e-mediated strategies defined as therapies using real or delayed-time interaction between therapist and child, parent or carer, mediated by the use of a technology such as phone, email or skype/videoconferencing. Or - Computer-based programs that can be used on applications such as computers, mobile phones or tablets.	
Criteria for considering studies for the review	Inclusion criteria	Exclusion criteria
• Intervention	Interventions of any e-mediated therapy that: - Aims to treat the mental health of a child or young person And, are either: - Remote therapist contact using technologies such as phone, e-mail or skype/videoconferencing in real or delayed	- Interventions to improve adherence to medication - Interventions for improving assessment or diagnosis - Interventions aimed at improving the mental health of a parent or carer - Interventions for the treatment of speech and language difficulties - Interventions to improve educational attainment - Interventions where e-mediated or computer-based therapies are not the major constituent of the intervention

	time Or - Computer-based applications for use on computers, mobile phones, tablets etc that are potentially available for use online or by download from the internet	
• Comparator	No treatment or another active intervention	No comparator
• Types of participants	- Children and young people (<18 years) - Mixed populations with mean age <18 years - Student populations where whole population <25 years - Parents, teachers or carers of children	
• Critical outcomes	Outcomes in children or young people - MH outcome corresponding to the intervention aim e.g. depression following intervention to reduce depression	- Outcomes in parents, carers, teachers or health professions - Physical health outcomes
• Important, but not critical outcomes	Outcomes in children or young people - MH outcomes not corresponding to the intervention aim e.g. anxiety following intervention to reduce depression - Adverse events - Rates of attrition	
• Other outcomes		
• Study design	RCTs	Uncontrolled studies e.g. before-after studies, case series and case reports

• Include unpublished data?	Yes	
• Restriction by date?	No	
• Study setting	• Any	• None
Search strategy summary	Searches will first be conducted for randomised controlled trials. After screening, if there is insufficient evidence in children and young people, evidence from systematic reviews in adults will be considered. If this is needed, searches for systematic reviews of studies in adults will be conducted.	
Search strategy to date	**Databases searched** General medical • CENTRAL • Embase • Medline • PreMedline • PsycINFO Education databases • Australian Education Index (AEI) • British Education Index (BREI) • Education Resources in Curriculum (ERIC) Social care databases • Applied Social Sciences Index and Abstracts (ASSIA) • British Humanities Index • International Bibliography of Social Science (IBSS) • Pais International • Social Services Abstracts (SSA)	

	• Sociological Abstracts Misc • *Cumulative Index to Nursing and Allied Health Literature (CINAHL)*
Years searched	Database inception to June 2013
Study design filter used	RCT
Searching other resources	The following search methods will also be utilised: 1) sending lists of eligible studies to subject experts and asking them to check the lists for completeness, and to provide information of any published or unpublished research for consideration; 2) tracking key papers in the Science Citation Index (prospectively) over time for further useful references. Authors of potentially relevant studies will be contacted if further information is needed to assess their eligibility for inclusion in the review.
The review strategy	Review protocols will be used to set out the review strategy, including the eligibility criteria (PICO: population, intervention, comparison, outcome) that must be met for studies to be included as evidence, the review question(s) and the methods used for quality assessment, data abstraction and evidence synthesis. Search citations will be sifted by one reviewer with reference to a second reviewer in cases of uncertainty. Potentially eligible studies will be acquired in full and re-evaluated for eligibility by one reviewer with reference to a second reviewer in cases of uncertainty. Relevant patient characteristics and outcomes will be abstracted by one reviewer into a pre-specified template (excel spreadsheet) with a check of abstracted data at the time they are entered into Review Manager Version 5 (Cochrane Collaboration). Studies will be quality assessed using the methods outlined in the Cochrane Handbook. Assessment will be conducted by two reviewers independently and a consensus reached. Where appropriate, meta-analysis will be used to synthesise evidence using a random-effects model. Where this is not appropriate or possible, methods of narrative synthesis will be used that are based on the work of Popay and colleagues. Once the evidence is synthesised, the GRADE approach (www.gradeworkinggroup.org/) will be used to assess the quality of the evidence for each outcome.

Table 15: Computer based applications internet scoping protocol

Topic	Computer based applications internet scoping	
Review question(s)	What computer-based applications are currently available on the internet for children and young people with mental health problems?	
Objectives	To identify existing computer-based applications available on the internet for mental health problems in children and young people	
Criteria for considering studies for the review	Included	Excluded
• Intervention	Computer-based programs used to deliver interventions for mental health that are: - Available for use online or for download from the internet - Used on applications such as computers, mobile phones or tablets - Aimed at treating the mental health of children or young people	- Interventions to improve adherence to medication - Interventions for improving assessment or diagnosis - Interventions aimed at improving the mental health of a parent or carer - Interventions for the treatment of speech and language difficulties - Interventions to improve educational attainment
• Types of participants	Applications designed to be used by **:** - Children and young people (<18 years) - Student populations (<25 years) - Parents, teachers or carers of children	
Search strategy, internet	Internet searches will be conducted using Google to identify existing computer-based applications and searches of any useful identified websites will also be conducted. Search terms will be pre-specified and related to computer applications and mental health conditions. Where Google searches are conducted, search results will be examined and, for each search, this process will be terminated at the point where further sifting appears to be futile (e.g. if no relevant site had been identified for the last 5 pages).	
The review strategy	Internet searching will be conducted by one reviewer. Findings on application name, conditions/symptoms targeted, administration method, country of origin and a brief description of the application will be compiled into a table along with the relevant website address and any related references to research studies of the application that are listed on the website.	

APPENDIX 7: SEARCH STRATEGIES FOR THE IDENTIFICATION OF CLINICAL STUDIES

Scoping searches

For scoping searches, the following databases and websites were searched:

- *BMJ* Clinical Evidence
- Canadian Medical Association (CMA) Infobase (Canadian guidelines)
- Clinical Policy and Practice Program of the New South Wales Department of Health (Australia)
- Clinical Practice Guidelines (Australian Guidelines)
- Cochrane Central Register of Controlled Trials (CENTRAL)
- Cochrane Database of Abstracts of Reviews of Effects (DARE)
- Cochrane Database of Systematic Reviews (CDSR)
- Excerpta Medica Database (Embase)
- Guidelines International Network (G-I-N)
- Health Evidence Bulletin Wales
- Health Management Information Consortium [HMIC]
- HTA database (technology assessments)
- Medical Literature Analysis and Retrieval System Online (MEDLINE/MEDLINE In-Process)
- National Health and Medical Research Council (NHMRC)
- National Library for Health (NLH) Guidelines Finder
- New Zealand Guidelines Group
- NHS Centre for Reviews and Dissemination (CRD)
- Organizing Medical Networked Information (OMNI) Medical Search
- Scottish Intercollegiate Guidelines Network (SIGN)
- Turning Research Into Practice (TRIP)
- United States Agency for Healthcare Research and Quality (AHRQ)
- Websites of NICE – including NHS Evidence - and the National Institute for Health Research (NIHR) HTA Programme for guidelines and HTAs in development.

Searches to address review question number 1

Search summary

A systematic search strategy was developed to locate all the relevant evidence. The balance between sensitivity (the power to identify all studies on a particular topic) and specificity (the ability to exclude irrelevant studies from the results) was carefully considered, and a decision made to utilise a sensitive approach to minimise the risk of overlooking relevant publications, mainly due to potential weaknesses that can result from more focused search strategies. The search strategies were initially developed for MEDLINE before being translated for use in other databases/interfaces.

Study design filters

To aid retrieval of relevant and sound studies, a study design filter was used to limit the results of searches to evidence of randomized controlled trials. For standard mainstream bibliographic databases, search terms were combined with a study design filter for randomized controlled trials. For searches generated in CENTRAL, search terms were used without the appendage of a filter.

The study design filter for randomized controlled trials is an adaptation of a filter designed by the CRD and the Health Information Research Unit of McMaster University, comprising index terms relating to the study type(s) and associated text-words for the methodological description.

Date and language restrictions

Searches were generated from the inception of the databases to June 2013. No language restrictions were applied at the searching stage.

Other search methods

Other search methods involved: (a) scanning the reference lists of all eligible publications (systematic reviews and included studies) for more published reports and citations of unpublished research; (b) sending lists of studies meeting the inclusion criteria to subject experts (identified through searches and expert group members) and asking them to check the lists for completeness, and to provide information of any published or unpublished research for consideration (c) checking the tables of contents of key journals for studies that might have been missed by the database and reference list searches; (d) tracking key papers in the Science Citation Index (prospectively) over time for further useful references.

Databases searched

Australian Education Index (AEI)

Applied social sciences index and abstracts (ASSIA)

British Education Index (BREI)

British Humanities Index (BHI)

Education Resources in Curriculum (ERIC)

Cochrane Central Database of Controlled Trials (CENTRAL) [Cochrane Library]

CINAHL

Embase

International Bibliography of Social Science (IBSS)

Medline

PAIS International

PreMedline

PsycInfo

Social Services Abstracts (SSA)

Sociological Abstracts

Full details of the search strategies and study design filter used for the identification of clinical evidence follows.

Search strategies used in the major electronic databases:

1 Search strategies

Embase, Medline, PreMedline, PsycINFO – OVID SP interface

1	exp mental disease/
2	1 use emez
3	exp mental disorders/
4	3 use mesz, prem
5	exp mental disorders/
6	5 use psyh
7	((mental$ or psychologic$) adj2 (health or disorder$ or disease$ or deficien$ or illness or problem$)).ti,ab.
8	or/2,4,6-7
9	anxiety.sh. or (anxiet$ or anxious$ or ((chronic$ or excessiv$ or intens$ or (long$ adj2 last$) or neuros$ or neurotic$ or ongoing or persist$ or serious$ or sever$ or uncontrol$ or un control$ or unrelent$ or un relent$) adj2 worry)).ti,ab.
10	((attenti$ or disrupt$ or impulsiv$ or inattenti$).sh. or ((((attenti$ or disrupt$) adj3 (adolescen$ or behav$ or child$ or class or classes or classroom$ or condition$ or difficult$ or disorder$ or learn$ or people or person$ or poor or problem$ or process$ or youngster$)) or (attenti$ adj3 deficit$) or (hyper adj1 activ$) or (hyper adj1 kin$) or (minimal adj1 brain) or (over adj1 activ$) or ad hd or addh or adhd or hkd or hyperactiv$ or hyperkin$ or impulsiv$ or inattentiv$ or overactiv$).ti,ab. or disruptive$.tw,it,tm.)) not overactive bladder$.ti.
11	rett syndrome/ use mesz, prem or (asperger$ or autis$ or cerebroatrophic hyperammonemia$ or (kanner$ adj (disorder$ or syndrome$)) or (pervasive$ adj2 (development$ or neurodevelopment$)) or pddnos or pdd nos or (rett$ adj

	(disorder$ or syndrome$))).ti,ab.
12	(((bipolar or bi?polar or bi polar) adj5 (disorder$ or depress$)) or ((cyclothymi$ or rapid or ultradian) adj5 cycl$) or hypomani$ or mania$ or manic$ or mixed episode$ or rcbd).ti,ab.
13	child behavior/ use emez or exp child behavior/ use mesz, prem
14	exp behavior problems/ or conduct disorder/ or oppositional defiant disorder/
15	14 use psyh
16	((behav$ adj2 (agnostic or challeng$ or dangerous or destructive or difficult$ or disorder$ or disrupt$ or disturb$ or externali$ or problem$)) or (child$ adj3 (behav$ or conduct$)) or (conduct$ adj2 (defian$ or difficult$ or disorder$ or disturb$ or problem$)) or (oppositional adj3 (defiant$ or disorder$))).ti,ab.
17	or/13,15-16
18	(depres$ or seasonal affective disorder$ or dysthym$ or melancholi$).ti,ab.
19	(anorexi$ or bing$ or bulimi$ or (compulsive adj2 (eat$ or vomit$)) or (eating adj2 disorder$) or overeat$ or (restrict$ adj2 eat$) or (self?induc$ adj2 vomit$)).ti,ab.
20	(body dysmorphic disorder or compulsions or compulsive behavior or obsessive behavior).sh. or (clean$ response$ or compulsional or compulsions or obsession or obsessional or obsessions or (obsessive compulsive adj (disorder$ or neuros$)) or ocd or osteochondr$ compulsion or (recurr$ adj (obsession$ or thought))).ti,ab. or (body dysmorphi$ or dysmorphophobi$ or imagine$ ugl$ or obsess$ ruminat$ or scrupulosity or ((symmetr$ or count$ or arrang$ or order$ or wash$ or repeat$ or hoard$ or clean$ or check$) adj compulsi$)).mp.
21	panic.sh. or panic$.ti,ab.
22	(acrophob$ or agoraphob$ or claustrophob$ or emetophob$ or homophob$ or kinesiophob$ or lesbophob$ or neophob$ or neurophob$ or phobi$ or transphob$ or trypanophob$ or xenophob$ or ((acute$ or chronic$ or extreme$ or intense$ or irrational$ or persistent$ or serious) adj2 fear$) or (fear$ adj4 (air travel or animal$ or blood$ or buses or ((closed or public) adj2 space$) or crowd$ or dark$ or dental$ or dentist$ or dog$1 or dying or falls or falling or fly or flying or height$ or hypochondriacal or injection$ or injur$ or laughed or leaving home or lightening or movement$ or needle$ or night$ or panic$ or plane$ or reinjure$ or school$ or

	snake$ or space$ or spider$ or test$ or thunder$ or train$ or travel$ or water)) or specific fear$).ti,ab.
23	(critical incident stress or emotional trauma or psychological stress or stress, psychological or traumatic neurosis).sh. or (acute stress or asd or combat neuros$ or combat syndrome or concentration camp syndrome or desnos or extreme stress or flash back$ or flashback$ or hypervigilan$ or hypervigilen$ or post?traumatic$ or post-traumatic$ or psych$ stress or psych$ trauma$ or psycho trauma$ or psychotrauma$ or ptsd or railway spine or (rape adj2 trauma$) or re experienc$ or reexperienc$ or stress disorder$ or torture syndrome or traumatic neuros$ or traumatic stress or (trauma$ and (avoidance or death$ or emotion$ or grief or horror or nightmare$ or night mare$))).ti,ab.
24	(auditory hallucinations or delusions or hallucinations or hypnagogic hallucinations or thought disorder or thought disturbances or visual hallucinations).sh. or (delusion$ or hallucinat$ or hebephreni$ or oligophreni$ or paranoi$ or psychotic$ or psychosis or psychoses or schizo$).ti,ab.
25	self-injurious behavior/ or self mutilation/ or suicide/ or suicidal ideation/ or suicide, attempted/
26	25 use mesz, prem
27	suicide/ or attempted suicide/ or exp self injurious behavior/ or suicidal ideation/ or suicide prevention/ or suicidology/
28	27 use psyh
29	(autoaggress$ or auto aggress$ or automutilat$ or auto mutilat$ or cutt$ or overdose$ or (self adj2 cut$) or selfdestruct$ or self destruct$ or selfharm$ or self harm$ or selfimmolat$ or self immolat$ or selfinflict$ or self inflict$ or selfinjur$ or self injur$ or selfmutilat$ or self mutilat$ or selfpoison$ or self poison$ or suicid$).ti,ab.
30	or/26,28-29
31	(blushing or hyperhidrosis or mutism or shyness or sweating or timidity).sh. or (((anxiet$ or anxious$ or phobia$ or phobic$) adj2 (performance or social$)) or socioanxi$ or sociophobi$ or ((blush$ or sweat$ or trembl$) adj3 (anxiet$ or anxious$ or chronic$ or excessiv$ or fear$ or severe)) or ((interpersonal or inter personal or social$ or socio$) adj2 (aversion$ or aversiv$ or confiden$ or difficult$ or disorder$ or distress$ or fear$)) or hyperhydrosis or hyperperspirat$ or (hyper adj (hydrosis or perspirat$)) or ((mute$ or mutism) adj2 (elective$ or selective$)) or

	((negative evaluation or speak$) adj3 (anxiet$ or anxious$ or distress$ or fear$)) or paruresis or (((personalit$ or phobi$ or social$ or socio$) adj2 avoid$) or avoidant disorder) or (phobi$ adj2 neuros$) or phobic disorder$ or (school$ adj2 (anxiet$ or anxious$ or phobi$ or refuse or refusal)) or (shy or shyness) or specific phobia$).ti,ab.
32	addiction/ or exp alcohol abuse/ or exp detoxification/ or exp drug dependence/ or exp drug abuse/ or substance abuse/
33	32 use emez
34	behavior addictive/ or drug seeking behavior/ or exp substance-related disorders/
35	34 use mesz, prem
36	addiction/ or exp alcoholism/ or drug abuse prevention/ or exp drug addiction/ or exp drug abuse/ or sobriety/
37	36 use psyh
38	(alcoholi$ or ((alcohol$ or cigarette$ or drug or nicotin$ or smoking or tobacco) and (abstinence or dependen$ or detoxification or intoxicat$ or rehabilit$ or withdraw$))).hw. or (needle adj (exchange or sharing)).sh.
39	(alcoholi$ or drinker$1 or (drink$ adj2 use$1) or ((alcohol$ or drink$) adj5 (abstinen$ or abstain$ or abus$ or addict$ or attenuat$ or binge$ or crav$ or dependen$ or detox$ or disease$ or disorder$ or excessiv$ or harm$ or hazard$ or heavy or high risk or intoxicat$ or misus$ or overdos$ or (over adj dos$) or problem$ or rehab$ or reliance or reliant or relaps$ or withdraw$)) or (control$ adj2 drink$) or sobriet$).ti,ab.
40	(((acetomorphine or amphetamine$ or amphetamine$ or analeptic$ or cannabis or cocaine or crack or crank or dextroamphetamine$ or diacephine or diacetylmorphine or diacetylmorphine or diamorphin$ or diamorphine or diaphorin or drug or hashish or heroin or marihuana or marijua$ or methadone$ or methamphetamine$ or morfin$ or morphacetin or morphin$ or naltrexone or narcotic$ or opioid$ or opium or polydrug$ or psychostimulant$ or speed or stimulant$ or stimulant$ or substance or uppers or cigarette$ or nicotin$ or smoking or tobacco) adj3 (abstain$ or abstinen$ or abus$ or addict$ or (excessive adj use$) or dependen$ or (inject$ adj2 drug$) or intoxicat$ or misus$ or over dos$ or overdos$ or (use$ adj (disorder$ or illicit)) or withdraw$)) or drug user$).ti,ab.

41	or/33,35,37-40
42	(tic.sh. or tics.sh. or tourette$.hw. or (tic or tics or tourette$).ti,ab.
43	or/8-12,17-24,30-31,41-42
44	attitude to computers/ or audiovisual aid/ or audiovisual equipment/ or communication software/ or computer assisted therapy/ or computer program/ or computer system/ or computer/ or decision support system/ or e-mail/ or human computer interaction/ or information technology/ or internet/ or mobile phone/ or multimedia/ or exp optical disk/ or personal digital assistant/ or social media/ or telecommunication/ or teleconsultation/ or exp telehealth/ or telemedicine/ or telemonitoring/ or telephone/ or telepsychiatry/ or teletherapy/ or text messaging/ or video disk/ or videotape/
45	44 use emez
46	attitude to computers/ or audiovisual aids/ or exp cellular phone/ or computer-assisted instruction/ or communications media/ or computer literacy/ or computer user training/ or computing methodologies/ or exp computer systems/ or decision making, computer assisted/ or decision support systems, clinical/ or electronic mail/ or hotlines/ or multimedia/ or exp optical storage devices/ or exp programmed instruction as topic/ or social networking/ or exp software/ or telecommunications/ or exp telemedicine/ or exp telemetry/ or telephone/ or text messaging/ or therapy, computer assisted/ or exp videorecording/
47	46 use mesz, prem
48	audiotapes/ or audiovisual communications media/ or communications media/ or computer applications/ or exp computer assisted instruction/ or computer assisted therapy/ or computer attitudes/ or computer literacy/ or computer mediated communication/ or computer software/ or computer training/ or computers/ or digital video/ or educational audiovisual aids/ or electronic communication/ or exp human computer interaction/ or hot line services/ or human computer interaction/ or hypermedia/ or information technology/ or instructional media/ or internet/ or exp mobile devices/ or exp multimedia/ or online therapy/ or programmed instruction/ or exp social media/ or exp social networks/ or telecommunications media/ or telemedicine/ or telemetry/ or exp telephone systems/ or videotapes/
49	48 use psyh
50	(audio$ or cd rom or cdrom or computer$ or communication aid or cyber$ or (digital adj (assistant$ or divide)) or dvd or (e$1 adj (communicat$ or consult$ or mail$ or

	portal$ or visit$)) or email$ or ecommunicat$ or econsult$ or email$ or eportal$ or etablet$ or evisit$ or (e$1 adj (communicat$ or consult$ or mail$ or tablet$ or visit$)) or facebook$ or floppy or handheld or hand held or information technolog$ or interactiv$ or internet or iphone$ or laptop$ or multimedia or multi media or myspace$ or my space$ or online or palmtop or palm top or personal digital or portal$1 or reminder system$ or remote consultation$ or short messag$ or skype or sms or (social adj (media or network$)) or texts or texting or video$ or virtual or website).ti,ab.
51	((cd or communication or digital or electronic$ or mobile or net or pc$1 or pda or phone$ or phoning or tablet$ or technolog$ or telephon$ or web or www) adj3 (aid$ or assist$ or based or deliver$ or diary or diaries)).ti,ab.
52	((cd or communication or digital or electronic$ or mobile or net or pc$1 or pda or phone$ or phoning or tablet$ or technolog$ or telephon$ or web or www) adj7 (advocacy or application$ or approach$ or coach$ or educat$ or exchang$ or guide$1 or help$ or instruct$ or interact$ or interven$ or learn$ or manag$ or meeting$ or module$ or network$ or package$ or participat$ or prevent$ or program$ or psychoanaly$ or psychotherap$ or rehab$ or retrain$ or re train$ or self guide$ or self help or selfguide$ or selfhelp or session$ or skill$ or strateg$ or support$ or teach$ or technique$ or therap$ or train$ or treat$ or work shop$ or workshop$)).ti,ab.
53	(vr adj2 (advocacy or application$ or approach$ or coach$ or educat$ or exchang$ or exposure or feedback$ or guide$1 or help$ or instruct$ or interact$ or interven$ or learn$ or manag$ or meeting$ or module$ or network$ or package$ or participat$ or prevent$ or program$ or psychoanaly$ or psychotherap$ or rehab$ or retrain$ or re train$ or self guide$ or self help or selfguide$ or selfhelp or session$ or skill$ or strateg$ or support$ or teach$ or technique$ or therap$ or train$ or treat$ or work shop$ or workshop$)).ti,ab.
54	(caccbt or ccbt or c cbt or call in or (caller$1 adj3 (interven$ or program$ or therap$ or treat$)) or callline$ or call line$ or ediar$ or ehealth or emediat$ or elearn$ or etherap$ or (e adj (diar$ or learn or health or mediat$ or therap$)) or help line$ or helpline$ or hotline$ or hot line$ or phone in or phonein or telecare or telecommunication or teleconsult$ or telehealth or telemedicine or telement$ or telepsychology or telepsychiatry or teletherap$ or (tele adj (care or communication or consult$ or health or medicine or mental$ or psychology or psychiatry or therap$)) or videocam$ or video cam$ or webcam$ or web cam$).ti,ab.
55	or/45,47,49-54
56	(alles onder controle or autism xpress or autismexpress or avatars programme or (beating adj2 blues) or big white wall or blue pages or bluepages or (brave program

	and anxiet$) or (camp cope adj2 lot) or (catch it and depres$) or cool teens or coping cat or crufadschools or (e couch and depres$) or fearfighter or ff education or ffeducation or grip op je dip or internet psychiatri or internet psykiatri or leap project or linden method or (little prince and depres$) or (living life adj2 full) or mind your$1 mind or mood gym or mood helper or moodgym or moodhelper or my$1 body my$1 life or net ff or netcope or netff or oc fighter or ocfighter or online anxiety prevention or overcoming bulimia online or (overcoming depression and program$) or panic online or pix talk or pixtalk or (restoring adj2 balance) or sparx or standalone ff or standaloneff or student bodie or student bodies prevention program$ or studentbodie or ((the$1 adj lowdown) and depres$) or the$1 journey or therapeutic learning program$ or trouble on$1 the$1 tightrope or think feel do or whiz kid games or (youth mental health adj2 parent$ guide)).ti,ab.
57	exp adolescence/ or exp adolescent/ or adolescent development/ or adopted child/ or boy/ or child/ or child development/ or childhood/ or disabled student/ or elementary student/ or gifted child/ or girl/ or handicapped child/ or high school student/ or high school/ or kindergarten/ or middle school student/ or middle school/ or nursery school/ or orphaned child/ or preschool child/ or primary school/ or exp puberty/ or exp puberty disorders/ or school/ or school child/ or student/
58	57 use emez
59	adolescent/ or adolescent development/ or exp child/ or exp child development/ or minors/ or puberty.hw. or schools/ or students/
60	59 use mesz, prem
61	adolescent attitudes/ or adolescent development/ or adolescent psychiatry/ or adolescent psychology/ or adolescent psychotherapy/ or adolescent psychopathology/ or boarding schools/ or charter schools/ or child development/ or child psychotherapy/ or child psychiatry/ or classmates/ or elementary schools/ or exp elementary school students/ or graduate schools/ or high school students/ or high schools/ or institutional schools/ or junior high school students/ or junior high schools/ or kindergarten students/ or kindergartens/ or middle schools/ or nongraded schools/ or nursery schools/ or exp preschool students/ or puberty/ or schools/ or special education students/ or students/ or vocational school students/
62	61 use psyh
63	(adolescen$ or child$ or juvenile$ or teen$).hw.
64	(adolescen$ or boy$1 or child$ or delinquen$ or girl$1 or graders or junior$1 or juvenile$ or kid$1 or kindergarten or minors or paediatric$ or pediatric$ or

	postpubert$ or postpubescen$ or prepubert$ or prepubescen$ or preschool$ or preteen$ or pubertal or puberty or puberties or pubescen$ or school$ or student$ or teen$ or (young$ adj2 (inpatient$ or patient$ or people$ or person$ or population$)) or underage$ or under age$ or youngster$ or youth$1).ti,ab.
65	((childhood or adolescence <13 to 17 years>) or (100 childhood or 160 preschool age or 180 school age or 200 adolescence))
66	from 65 keep ***[psycinfo records]***
67	or/58,60,62-64,66
68	43 and 55 and 67
69	(adhd or attention deficit$ or (conduct$ adj2 (defian$ or difficult$ or disorder$ or disturb$ or problem$)) or (oppositional adj3 (defiant$ or disorder$))).ti,ab,hw.
70	55 and 69
71	56 and 67
72	((attention$ or cognitive$) and bias$ and (modif$ or train$ or retrain$)).ti,ab,hw,id. or (attention$ adj2 (modif$ or retrain$ or train$)).ti,ab.
73	67 and 72
74	or/68,70,71,73

CENTRAL – Wiley interface

#1 mesh descriptor: [mental disorders] explode all trees

#2 mesh descriptor: [anxiety] this term only

#3 mesh descriptor: [performance anxiety] this term only

#4 mesh descriptor: [blushing] this term only

#5 mesh descriptor: [body dysmorphic disorders] this term only

#6 mesh descriptor: [child behavior] explode all trees

#7 mesh descriptor: [compulsive behavior] this term only

#8 mesh descriptor: [delusions] this term only

#9 mesh descriptor: [hallucinations] this term only

#10 mesh descriptor: [hyperhidrosis] this term only

#11 mesh descriptor: [mutism] this term only

#12 mesh descriptor: [obsessive behavior] this term only

#13 mesh descriptor: [panic] this term only

#14 mesh descriptor: [rett syndrome] this term only

#15 mesh descriptor: [self mutilation] this term only

#16 mesh descriptor: [self-injurious behavior] this term only

#17 mesh descriptor: [shyness] this term only

#18 mesh descriptor: [stress, psychological] this term only

#19 mesh descriptor: [sweating] this term only

#20 mesh descriptor: [suicidal ideation] this term only

#21 mesh descriptor: [suicide] this term only

#22 mesh descriptor: [suicide, attempted] this term only

#23 mesh descriptor: [behavior, addictive] this term only

#24 mesh descriptor: [drug-seeking behavior] this term only

#25 mesh descriptor: [substance-related disorders] 2 tree(s) exploded

#26 mesh descriptor: [tics] this term only

#27 mesh descriptor: [tourette syndrome] this term only

#28 (alcoholi* or ((alcohol* or cigarette* or drug or nicotin* or smoking or tobacco) and (abstinence or dependen* or detoxification or intoxicat* or rehabilit* or withdraw*)) or (needle near/1 (exchange or sharing))):kw

#29 ((mental* or psychologic*) near/2 (health or disorder* or disease* or deficien* or illness or problem*)) or anxiet* or anxious* or ((chronic* or excessiv* or intens* or (long* near/2 last*) or neuros* or neurotic* or ongoing or persist* or serious* or sever* or uncontrol* or “un control*” or unrelent* or “un relent*”) near/2 worry) or ((attenti* or disrupt*) near/3 (adolescen* or adult* or behav* or child* or class or classes or classroom* or condition* or difficult* or disorder* or learn* or people or person* or poor or problem* or process* or youngster*)) or (attenti* near/3 deficit*) or (hyper near/1 activ*) or (hyper near/1 kin*) or (minimal near/1 brain) or (over near/1 activ*) or “ad hd” or addh or adhd or hkd or hyperactiv* or hyperkin* or impulsiv* or inattentiv* or overactivity or asperger* or autis* or “cerebroatrophic hyperammonemia* “ or (kanner* near/1 (disorder* or syndrome*)) or (pervasive* near/2 (development* or neurodevelopment*)) or pddnos or “pdd nos” or (rett* near/1 (disorder* or syndrome*)) or ((bipolar or bipolar or “bi polar”) near/5 (disorder* or depress*)) or ((cyclothymi* or rapid or ultradian) near/5 cycl*) or hypomani* or mania* or manic* or “mixed episode*” or rcbd or (behav* near/2 (agnostic or challeng* or dangerous or destructive or difficult* or disorder* or disrupt* or disturb* or externali* or problem*)) or (child* near/3 (behav* or conduct*)) or (conduct* near/2 (defian* or difficult* or disorder* or disturb* or problem*)) or (oppositional near/3 (defiant* or disorder*)) or depres* or “seasonal affective disorder*” or dysthym* or melancholi* or anorexi* or bing* or bulimi* or (compulsive near/2 (eat* or vomit*)) or (eating near/2 disorder*) or overeat* or (restrict* near/2 eat*) or ((self induc* or selfinflict*) near/2 vomit*) or “clean* response*” or “compulsional or compulsions” or obsession or obsessional or obsessions or (“obsessive compulsive” near/1 (disorder* or neuros*)) or ocd or osteochondr* compulsion or (recurr* near/1 (obsession* or thought)) or “body dysmorphi*” or dysmorphophobi* or “imagine* ugl*” or “obsess* ruminat*” or scrupulosity or ((symmetr* or count* or arrang* or order* or wash* or repeat* or hoard* or clean* or check*) near/1 compulsi*) or panic* or acrophob* or agoraphob* or claustrophob* or emetophob* or homophob* or kinesiophob* or lesbophob* or neophob* or neurophob* or phobi* or transphob* or trypanophob* or xenophob* or ((acute* or chronic* or extreme* or intense* or irrational* or persistent* or serious) near/2 fear*) or (fear* near/4 (“air travel” or animal* or blood* or buses or ((closed or public) near/2 space*) or crowd* or dark* or dental* or dentist* or dog* or dying or falls or falling or fly or flying or height* or hypochondriacal or injection* or injur* or laughed or “leaving home” or lightening or

movement* or needle* or night* or panic* or plane* or reinjure* or school* or snake* or space* or spider* or test* or thunder* or train* or travel* or water)) or “specific fear*” or “acute stress” or asd or “combat neuros*” or “combat syndrome” or “concentration camp syndrome” or desnos or “extreme stress” or “flash back*” or flashback* or hypervigilan* or hypervigilen* or posttraumatic* or “post traumatic*” or “psych* stress” or “psych* trauma*” or” psycho trauma*” or psychotrauma* or ptsd or “railway spine” or (rape near/2 trauma*) or “re experienc*” or reexperienc* or “stress disorder*” or “torture syndrome” or “traumatic neuros*” or “traumatic stress” or (trauma* and (avoidance or death* or emotion* or grief or horror or nightmare* or “night mare*”)) or delusion* or hallucinat* or hebephreni* or oligophreni* or paranoi* or psychotic* or psychosis or psychoses or schizo* or autoaggress* or “auto aggress*” or automutilat* or “auto mutilat*” or cutt* or overdose* or (self near/2 cut*) or selfdestruct* or “self destruct*” or selfharm* or “self harm*” or selfimmolat* or “self immolat*” or selfinflict* or “self inflict*” or selfinjur* or “self injur*” or selfmutilat* or “self mutilat*” or selfpoison* or “self poison*” or suicid* or ((anxiet* or anxious* or phobia* or phobic*) near/2 (performance or social*)) or socioanxi* or sociophobi* or ((blush* or sweat* or trembl*) near/3 (anxiet* or anxious* or chronic* or excessiv* or fear* or severe)) or ((interpersonal or “inter personal” or social* or socio*) near/2 (aversion* or aversiv* or confiden* or difficult* or disorder* or distress* or fear*)) or hyperhydrosis or hyperperspirat* or (hyper near/1 (hydrosis or perspirat*)) or ((mute* or mutism) near/2 (elective* or selective*)) or ((“negative evaluation” or speak*) near/3 (anxiet* or anxious* or distress* or fear*)) or paruresis or ((personalit* or phobi* or social* or socio*) near/2 avoid*) or “avoidant disorder” or (phobi* near/2 neuros*) or “phobic disorder*” or (school* near/2 (anxiet* or anxious* or phobi* or refuse or refusal)) or shy or shyness or “specific phobia*”:ti

#30 ((mental* or psychologic*) near/2 (health or disorder* or disease* or deficien* or illness or problem*)) or anxiet* or anxious* or ((chronic* or excessiv* or intens* or (long* near/2 last*) or neuros* or neurotic* or ongoing or persist* or serious* or sever* or uncontrol* or “un control*” or unrelent* or “un relent*”) near/2 worry) or ((attenti* or disrupt*) near/3 (adolescen* or adult* or behav* or child* or class or classes or classroom* or condition* or difficult* or disorder* or learn* or people or person* or poor or problem* or process* or youngster*)) or (attenti* near/3 deficit*) or (hyper near/1 activ*) or (hyper near/1 kin*) or (minimal near/1 brain) or (over near/1 activ*) or “ad hd” or addh or adhd or hkd or hyperactiv* or hyperkin* or impulsiv* or inattentiv* or overactivity or asperger* or autis* or “cerebroatrophic hyperammonemia* “ or (kanner* near/1 (disorder* or syndrome*)) or (pervasive* near/2 (development* or neurodevelopment*)) or pddnos or “pdd nos” or (rett* near/1 (disorder* or syndrome*)) or ((bipolar or bipolar or “bi polar”) near/5 (disorder* or depress*)) or ((cyclothymi* or rapid or ultradian) near/5 cycl*) or hypomani* or mania* or manic* or “mixed episode*” or rcbd or (behav* near/2 (agnostic or challeng* or dangerous or destructive or difficult* or disorder* or disrupt* or disturb* or externali* or problem*)) or (child* near/3 (behav* or conduct*)) or (conduct* near/2 (defian* or difficult* or disorder* or disturb* or problem*)) or (oppositional near/3 (defiant* or disorder*)) or depres* or “seasonal affective disorder*” or dysthym* or melancholi* or anorexi* or bing* or bulimi* or (compulsive near/2 (eat* or vomit*)) or (eating near/2 disorder*) or overeat* or (restrict* near/2 eat*) or ((self induc* or selfinflict*) near/2 vomit*) or “clean* response*” or

compulsional or compulsions or obsession or obsessional or obsessions or ("obsessive compulsive" near/1 (disorder* or neuros*)) or ocd or osteochondr* compulsion or (recurr* near/1 (obsession* or thought)) or "body dysmorphi*" or dysmorphophobi* or "imagine* ugl*" or "obsess* ruminat*" or scrupulosity or ((symmetr* or count* or arrang* or order* or wash* or repeat* or hoard* or clean* or check*) near/1 compulsi*) or panic* or acrophob* or agoraphob* or claustrophob* or emetophob* or homophob* or kinesiophob* or lesbophob* or neophob* or neurophob* or phobi* or transphob* or trypanophob* or xenophob* or ((acute* or chronic* or extreme* or intense* or irrational* or persistent* or serious) near/2 fear*) or (fear* near/4 ("air travel" or animal* or blood* or buses or ((closed or public) near/2 space*) or crowd* or dark* or dental* or dentist* or dog* or dying or falls or falling or fly or flying or height* or hypochondriacal or injection* or injur* or laughed or "leaving home" or lightening or movement* or needle* or night* or panic* or plane* or reinjure* or school* or snake* or space* or spider* or test* or thunder* or train* or travel* or water)) or "specific fear*" or "acute stress" or asd or "combat neuros*" or "combat syndrome" or "concentration camp syndrome" or desnos or "extreme stress" or "flash back*" or flashback* or hypervigilan* or hypervigilen* or posttraumatic* or "post traumatic*" or "psych* stress" or "psych* trauma*" or" psycho trauma*" or psychotrauma* or ptsd or "railway spine" or (rape near/2 trauma*) or "re experienc*" or reexperienc* or "stress disorder*" or "torture syndrome" or "traumatic neuros*" or "traumatic stress" or (trauma* and (avoidance or death* or emotion* or grief or horror or nightmare* or "night mare*")) or delusion* or hallucinat* or hebephreni* or oligophreni* or paranoi* or psychotic* or psychosis or psychoses or schizo* or autoaggress* or "auto aggress*" or automutilat* or "auto mutilat*" or cutt* or overdose* or (self near/2 cut*) or selfdestruct* or "self destruct*" or selfharm* or "self harm*" or selfimmolat* or "self immolat*" or selfinflict* or "self inflict*" or selfinjur* or "self injur*" or selfmutilat* or "self mutilat*" or selfpoison* or "self poison*" or suicid* or ((anxiet* or anxious* or phobia* or phobic*) near/2 (performance or social*)) or socioanxi* or sociophobi* or ((blush* or sweat* or trembl*) near/3 (anxiet* or anxious* or chronic* or excessiv* or fear* or severe)) or ((interpersonal or "inter personal" or social* or socio*) near/2 (aversion* or aversiv* or confiden* or difficult* or disorder* or distress* or fear*)) or hyperhydrosis or hyperperspirat* or (hyper near/1 (hydrosis or perspirat*)) or ((mute* or mutism) near/2 (elective* or selective*)) or (("negative evaluation" or speak*) near/3 (anxiet* or anxious* or distress* or fear*)) or paruresis or ((personalit* or phobi* or social* or socio*) near/2 avoid*) or "avoidant disorder" or (phobi* near/2 neuros*) or "phobic disorder*" or (school* near/2 (anxiet* or anxious* or phobi* or refuse or refusal)) or shy or shyness or "specific phobia*":ab

#31 (alcoholi* or drinker* or (drink* near/2 use*) or ((alcohol* or drink*) near/5 (abstinen* or abstain* or abus* or addict* or attenuat* or binge* or crav* or dependen* or detox* or disease* or disorder* or excessiv* or harm* or hazard* or heavy or "high risk" or intoxicat* or misus* or overdos* or (over near/1 dos*) or problem* or rehab* or reliance or reliant or relaps* or withdraw*)) or (control* near/2 drink*) or sobriet* or ((acetomorphine or amphetamine* or amphetamine* or analeptic* or cannabis or cocaine or crack or crank or dextroamphetamine* or diacephine or diacetylmorphine or diacetylmorphine or diamorphin* or diamorphine or diaphorin or drug or hashish or

heroin or marihuana or marijua* or methadone* or methamphetamine* or morfin* or morphacetin or morphin* or naltrexone or narcotic* or opioid* or opium or polydrug* or psychostimulant* or speed or stimulant* or stimulant* or substance or uppers or cigarette* or nicotin* or smoking or tobacco) near/3 (abstain* or abstinen* or abus* or addict* or (excessive near/1 use*) or dependen* or (inject* near/2 drug*) or intoxicat* or misus* or "over dos*" or overdos* or (use* near/1 (disorder* or illicit)) or withdraw*)) or "drug user*" or tic or tics or tourette*):ti

#32 (alcoholi* or drinker* or (drink* near/2 use*) or ((alcohol* or drink*) near/5 (abstinen* or abstain* or abus* or addict* or attenuat* or binge* or crav* or dependen* or detox* or disease* or disorder* or excessiv* or harm* or hazard* or heavy or "high risk" or intoxicat* or misus* or overdos* or (over near/1 dos*) or problem* or rehab* or reliance or reliant or relaps* or withdraw*)) or (control* near/2 drink*) or sobriet* or ((acetomorphine or amphetamine* or amphetamine* or analeptic* or cannabis or cocaine or crack or crank or dextroamphetamine* or diacephine or diacetylmorphine or diacetylmorphine or diamorphin* or diamorphine or diaphorin or drug or hashish or heroin or marihuana or marijua* or methadone* or methamphetamine* or morfin* or morphacetin or morphin* or naltrexone or narcotic* or opioid* or opium or polydrug* or psychostimulant* or speed or stimulant* or stimulant* or substance or uppers or cigarette* or nicotin* or smoking or tobacco) near/3 (abstain* or abstinen* or abus* or addict* or (excessive near/1 use*) or dependen* or (inject* near/2 drug*) or intoxicat* or misus* or "over dos*" or overdos* or (use* near/1 (disorder* or illicit)) or withdraw*)) or "drug user*" or tic or tics or tourette*):ab

#33 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30 or #31 or #32

#34 mesh descriptor: [attitude to computers] this term only

#35 mesh descriptor: [audiovisual aids] this term only

#36 mesh descriptor: [cellular phone] 1 tree(s) exploded

#37 mesh descriptor: [computer-assisted instruction] this term only

#38 mesh descriptor: [communications media] this term only

#39 mesh descriptor: [computer literacy] this term only

#40 mesh descriptor: [computer user training] this term only

#41 mesh descriptor: [computing methodologies] this term only

#42 mesh descriptor: [computer systems] explode all trees

#43 mesh descriptor: [decision making, computer-assisted] this term only

#44 mesh descriptor: [decision support systems, clinical] this term only

#45 mesh descriptor: [electronic mail] this term only

#46 mesh descriptor: [hotlines] this term only

#47 mesh descriptor: [multimedia] this term only

#48 mesh descriptor: [optical storage devices] explode all trees

#49 mesh descriptor: [programmed instruction as topic] explode all trees

#50 mesh descriptor: [social networking] this term only

#51 mesh descriptor: [software] explode all trees

#52 mesh descriptor: [telecommunications] this term only

#53 mesh descriptor: [telemedicine] explode all trees

#54 mesh descriptor: [telemetry] explode all trees

#55 mesh descriptor: [telephone] this term only

#56 mesh descriptor: [text messaging] this term only

#57 mesh descriptor: [therapy, computer-assisted] this term only

#58 mesh descriptor: [video recording] explode all trees

#59 (audio* or “cd rom” or cdrom or computer* or “communication aid” or cyber* or (digital near/1 (assistant* or divide)) or dvd or (e near/1 (communicat* or consult* or mail* or portal* or visit*)) or email* or ecommunicat* or econsult* or email* or eportal* or etablet* or evisit* or (e near/1 (communicat* or consult* or mail* or tablet* or visit*)) or facebook* or floppy or handheld or “hand held” or “information technolog*” or interactiv* or internet or iphone* or laptop* or multimedia or “multi media” or myspace* or “my space*” or online or palmtop or “palm top” or “personal digital” or portal* or “reminder system*” or “remote consultation*” or “short messag*” or skype or sms or (social near/1 (media or network*)) or texts or texting or video* or virtual or website):ti

#60 (audio* or “cd rom” or cdrom or computer* or “communication aid” or cyber* or (digital near/1 (assistant* or divide)) or dvd or (e near/1 (communicat* or consult* or mail* or portal* or visit*)) or email* or ecommunicat* or econsult* or email* or eportal* or etablet* or evisit* or (e near/1 (communicat* or consult* or mail* or tablet* or visit*)) or facebook* or floppy or handheld or “hand held” or “information technolog*” or interactiv* or internet or iphone* or laptop* or multimedia or “multi media” or myspace* or “my space*” or online or palmtop or “palm top” or “personal digital” or portal* or “reminder

system*" or "remote consultation*" or "short messag*" or skype or sms or (social near/1 (media or network*)) or texts or texting or video* or virtual or website):ab

#61 ((cd or communication or digital or electronic* or mobile or net or pc or pda or phone* or phoning or tablet* or technolog* or telephon* or web or www) near/3 (aid* or assist* or based or deliver* or diary or diaries)):ti

#62 ((cd or communication or digital or electronic* or mobile or net or pc or pda or phone* or phoning or tablet* or technolog* or telephon* or web or www) near/3 (aid* or assist* or based or deliver* or diary or diaries)):ab

#63 ((cd or communication or digital or electronic* or mobile or net or pc* or pda or phone* or phoning or tablet* or technolog* or telephon* or web or www) near/7 (advocacy or application* or approach* or coach* or educat* or exchang* or guide* or help* or instruct* or interact* or interven* or learn* or manag* or meeting* or module* or network* or package* or participat* or prevent* or program* or psychoanaly* or psychotherap* or rehab* or retrain* or "re train*" or "self guide*" or "self help" or selfguide* or selfhelp or session* or skill* or strateg* or support* or teach* or technique* or therap* or train* or treat* or "work shop*" or workshop*)):ti

#64 ((cd or communication or digital or electronic* or mobile or net or pc* or pda or phone* or phoning or tablet* or technolog* or telephon* or web or www) near/7 (advocacy or application* or approach* or coach* or educat* or exchang* or guide* or help* or instruct* or interact* or interven* or learn* or manag* or meeting* or module* or network* or package* or participat* or prevent* or program* or psychoanaly* or psychotherap* or rehab* or retrain* or "re train*" or "self guide*" or "self help" or selfguide* or selfhelp or session* or skill* or strateg* or support* or teach* or technique* or therap* or train* or treat* or "work shop*" or workshop*)):ab

#65 (vr near/2 (advocacy or application* or approach* or coach* or educat* or exchang* or exposure or feedback* or guide* or help* or instruct* or interact* or interven* or learn* or manag* or meeting* or module* or network* or package* or participat* or prevent* or program* or psychoanaly* or psychotherap* or rehab* or retrain* or "re train*" or "self guide*" or "self help" or selfguide* or selfhelp or session* or skill* or strateg* or support* or teach* or technique* or therap* or train* or treat* or "work shop*" or workshop*)):ti

#66 (vr near/2 (advocacy or application* or approach* or coach* or educat* or exchang* or exposure or feedback* or guide* or help* or instruct* or interact* or interven* or learn* or manag* or meeting* or module* or network* or package* or participat* or prevent* or program* or psychoanaly* or psychotherap* or rehab* or retrain* or "re train*" or "self guide*" or "self help" or selfguide* or selfhelp or session* or skill* or strateg* or support* or teach* or technique* or therap* or train* or treat* or "work shop*" or workshop*)):ab

#67 (caccbt or ccbt or “c cbt” or “call in” or (caller* near/3 (interven* or program* or therap* or treat*)) or callline* or “call line*” or ediar* or ehealth or emediat* or elearn* or etherap* or (e near/1 (diar* or learn or health or mediat* or therap*)) or “help line*” or helpline* or hotline* or “hot line*” or “phone in” or phonein or telecare or telecommunication or teleconsult* or telehealth or telemedicine or telement* or telepsychology or telepsychiatry or teletherap* or (tele near/1 (care or communication or consult* or health or medicine or mental* or psychology or psychiatry or therap*)) or videocam* or “video cam*” or webcam* or “web cam*”):ti

#68 (caccbt or ccbt or “c cbt” or “call in” or (caller* near/3 (interven* or program* or therap* or treat*)) or callline* or “call line*” or ediar* or ehealth or emediat* or elearn* or etherap* or (e near/1 (diar* or learn or health or mediat* or therap*)) or “help line*” or helpline* or hotline* or “hot line*” or “phone in” or phonein or telecare or telecommunication or teleconsult* or telehealth or telemedicine or telement* or telepsychology or telepsychiatry or teletherap* or (tele near/1 (care or communication or consult* or health or medicine or mental* or psychology or psychiatry or therap*)) or videocam* or “video cam*” or webcam* or “web cam*”):ab

#69 #34 or #35 or #36 or #37 or #38 or #39 or #40 or #41 or #42 or #43 or #44 or #45 or #46 or #47 or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55 or #56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 or #66 or #67 or #68

#70 (“alles onder controle” or “autism xpress” or autismexpress or “avatars programme” or (beating near/2 blues) or “big white wall” or “blue pages” or bluepages or (“brave program” and anxiet*) or (“camp cope” near/2 lot) or (“catch it” and depres*) or “cool teens” or “coping cat” or crufadschools or (“e couch” and depres*) or fearfighter or “ff education” or ffeducation or “grip op je dip” or “internet psychiatri” or “internet psykiatri” or “leap project” or “linden method” or (“little prince” and depres*) or (“living life” near/2 full) or “mind your* mind” or “mood gym” or “mood helper” or moodgym or moodhelper or “my* body my* life “ or “net ff” or netcope or netff or “oc fighter” or ocfighter or “online anxiety prevention” or “overcoming bulimia online” or (“overcoming depression” and program*) or “panic online” or “pix talk” or pixtalk or (restoring near/2 balance) or sparx or “standalone ff” or standaloneff or “student bodie*” or “studentbodie*” or ((the* near/1 lowdown) and depres*) or “the journey” or “therapeutic learning program*” or “think feel do” or “trouble on* the* tightrope” or “whiz kid games” or (“youth mental health” near/2 parent* guide)):ti

#71 (“alles onder controle” or “autism xpress” or autismexpress or “avatars programme” or (beating near/2 blues) or “big white wall” or “blue pages” or bluepages or (“brave program” and anxiet*) or (“camp cope” near/2 lot) or (“catch it” and depres*) or “cool teens” or “coping cat” or crufadschools or (“e couch” and depres*) or fearfighter or “ff education” or ffeducation or “grip op je dip” or “internet psychiatri” or “internet psykiatri” or “leap project” or “linden method” or (“little prince” and depres*) or (“living life” near/2 full) or “mind your* mind” or “mood gym” or “mood helper” or moodgym or moodhelper or “my* body my* life “ or “net ff” or netcope or netff or “oc fighter” or ocfighter or “online anxiety prevention” or “overcoming bulimia online” or (“overcoming

depression” and program*) or “panic online” or “pix talk” or pixtalk or (restoring near/2 balance) or sparx or “standalone ff” or standaloneff or “student bodie*” or “studentbodie* or ((the* near/1 lowdown) and depres*) or “the journey” or “therapeutic learning program*” or “think feel do” or “trouble on* the* tightrope” or “whiz kid games” or (“youth mental health” near/2 parent* guide)):ab

#72 mesh descriptor: [adolescent] this term only

#73 mesh descriptor: [child] this term only

#74 adolescen* or boy or boys or child or children or delinquen* or girl* or graders or junior* or juvenile* or kid or kids or kindergarten or minors or paediatric* or pediatric* or postpubert* or postpubescen* or prepubert* or prepubescen* or preschool* or preteen* or pubertal or puberty or puberties or pubescen* or school* or student* or teen* or “young* inpatient*” or “young patient*” or “young people” or “young person*” or “young population*” or underage* or “under age*” or youngster* or youth*:ti

#75 adolescen* or boy or boys or child or children or delinquen* or girl* or graders or junior* or juvenile* or kid or kids or kindergarten or minors or paediatric* or pediatric* or postpubert* or postpubescen* or prepubert* or prepubescen* or preschool* or preteen* or pubertal or puberty or puberties or pubescen* or school* or student* or teen* or “young* inpatient*” or “young patient*” or “young people” or “young person*” or “young population*” or underage* or “under age*” or youngster* or youth*:ab

#76 #72 or #73 or #74 or #75

#77 #33 and #69 and #76

#78 (adhd or attention deficit$ or (conduct$ adj2 (defian$ or difficult$ or disorder$ or disturb$ or problem$)) or (oppositional adj3 (defiant$ or disorder$))).ti,ab,hw.

#79 #69 and #78

#80 (#70 or #71) and #76

#81 ((attention* or cognitive*) and bias* and (modif* or train* or retrain*)):ti,ab,kw

#82 #76 and #81

#83 #77 or #79 or #80 or #82

CINAHL – Ebsco Host interface

S67	S62 or s66
S66	S57 and S65
S65	S63 or s64
S64	ti ((attention* n2 (modif* or retrain* or train*))) or ab ((attention* n2 (modif* or retrain* or train*)))
S63	tx (((attention* or cognitive*) and bias* and (modif* or train* or retrain*))) or mw (((attention* or cognitive*) and bias* and (modif* or train* or retrain*)))
S62	S58 or s60 or s61
S61	S49 and s57
S60	S48 and s59
S59	ti ((conduct* n2 (defian* or difficult* or disorder* or disturb* or problem*)) or (oppositional n3 (defiant* or disorder*))) or ab ((conduct* n2 (defian* or difficult* or disorder* or disturb* or problem*)) or (oppositional n3 (defiant* or disorder*))) or mh (conduct disorder* or oppostional defiant disorder*)
S58	S41 and s48 and s57
S57	s50 or s51 or s52 or s53 or s54 or s55 or s56
s56	ti ((adolescen* or boy* or child* or delinquen* or girl* or graders or junior* or juvenile* or kid* or kindergarten or minors or paediatric* or pediatric* or postpubert* or postpubescen* or prepubert* or prepubescen* or preschool* or preteen* or pubertal or puberty or puberties or pubescen* or school* or student* or teen* or (young* n2 (inpatient* or patient* or people* or person* or population*)) or underage* or “under age*” or youngster* or youth*)) or ab ((adolescen* or boy* or child* or delinquen* or girl* or graders or junior* or juvenile* or kid* or kindergarten or minors or paediatric* or pediatric* or postpubert* or postpubescen* or prepubert* or prepubescen* or preschool* or preteen* or pubertal or puberty or puberties or pubescen* or school* or student* or teen* or (young* n2 (inpatient* or patient* or people* or person* or population*)) or

	underage* or “under age*” or youngster* or youth*))
s55	mw (adolescen* or child* or juvenile* or puberty or teen*)
s54	(mh "students") or (mh "students, high school") or (mh "students, middle school")
S53	(mh "adolescent development")
S52	(mh "schools") or (mh "schools, elementary") or (mh "schools, middle") or (mh "schools, secondary") or (mh "schools, special")
S51	(mh "child development")
S50	(mh "adolescence+") or (mh "child+")
S49	ti ((“alles onder controle” or “autism xpress” or autismexpress or “avatars programme” or (beating n2 blues) or “big white wall” or “blue pages” or bluepages or (“brave program” and anxiet*) or (“camp cope” n2 lot) or (“catch it” and depres*) or “cool teens” or “coping cat” or crufadschools or (“e couch” and depres*) or fearfighter or “ff education” or ffeducation or “grip op je dip” or “internet psychiatri” or “internet psykiatri” or “leap project” or “linden method” or (“little prince” and depres*) or (“living life” n2 full) or “mind your* mind” or “mood gym” or “mood helper” or moodgym or moodhelper or “my* body my* life “ or “net ff” or netcope or netff or “oc fighter” or ocfighter or “online anxiety prevention” or “overcoming bulimia online” or (“overcoming depression” and program*) or “panic online” or “pix talk” or pixtalk or (restoring n2 balance) or sparx or “standalone ff” or standaloneff or “student bodie” or studentbodie* or “the journey” or ((the* n1 lowdown) and depres*) or “therapeutic learning program*” or “trouble on* the* tightrope” or “think feel do” or “whiz kid games” or (“youth mental health” n2 parent* guide))) or ab ((“alles onder controle” or “autism xpress” or autismexpress or “avatars programme” or (beating n2 blues) or “big white wall” or “blue pages” or bluepages or (“brave program” and anxiet*) or (“camp cope” n2 lot) or (“catch it” and depres*) or “cool teens” or “coping cat” or crufadschools or (“e couch” and depres*) or fearfighter or “ff education” or ffeducation or “grip op je dip” or “internet psychiatri” or “internet psykiatri” or “leap project” or “linden method” or (“little prince” and depres*) or (“living life” n2 full) or “mind your* mind” or “mood gym” or “mood helper” or moodgym or moodhelper or “my* body my* life “ or “net ff” or netcope or netff or “oc fighter” or ocfighter or “online anxiety prevention” or “overcoming bulimia online” or (“overcoming depression” and program*) or “panic online” or “pix talk” or pixtalk or (restoring n2 balance) or sparx or “standalone ff” or standaloneff or “student bodie*” or “studentbodie*” or “the journey” or ((the* n1 lowdown) and depres*) or “therapeutic learning

	program*" or "think feel do" or "trouble on* the* tightrope" or "whiz kid games" or ("youth mental health" n2 parent* guide)))
S48	s42 or s43 or s44 or s45 or s46 or s47
S47	ti (caccbt or ccbt or "c cbt" or "call in" or (caller* n3 (interven* or program* or therap* or treat*)) or callline* or "call line*" or ediar* or ehealth or emediat* or elearn* or etherap* or (e n1 (diar* or learn or health or mediat* or therap*)) or "help line*" or helpline* or hotline* or "hot line*" or "phone in" or phonein or telecare or telecommunication or teleconsult* or telehealth or telemedicine or telement* or telepsychology or telepsychiatry or teletherap* or (tele n1 (care or communication or consult* or health or medicine or mental* or psychology or psychiatry or therap*)) or videocam* or "video cam*" or webcam* or "web cam*") or ab (caccbt or ccbt or "c cbt" or "call in" or (caller* n3 (interven* or program* or therap* or treat*)) or callline* or "call line*" or ediar* or ehealth or emediat* or elearn* or etherap* or (e n1 (diar* or learn or health or mediat* or therap*)) or "help line*" or helpline* or hotline* or "hot line*" or "phone in" or phonein or telecare or telecommunication or teleconsult* or telehealth or telemedicine or telement* or telepsychology or telepsychiatry or teletherap* or (tele n1 (care or communication or consult* or health or medicine or mental* or psychology or psychiatry or therap*)) or videocam* or "video cam*" or webcam* or "web cam*")
s46	ti (vr n2 (advocacy or application* or approach* or coach* or educat* or exchang* or exposure or feedback* or guide* or help* or instruct* or interact* or interven* or learn* or manag* or meeting* or module* or network* or package* or participat* or prevent* or program* or psychoanaly* or psychotherap* or rehab* or retrain* or "re train*" or "self guide*" or "self help" or selfguide* or selfhelp or session* or skill* or strateg* or support* or teach* or technique* or therap* or train* or treat* or "work shop*" or workshop*)) or ab (vr n2 (advocacy or application* or approach* or coach* or educat* or exchang* or exposure or feedback* or guide* or help* or instruct* or interact* or interven* or learn* or manag* or meeting* or module* or network* or package* or participat* or prevent* or program* or psychoanaly* or psychotherap* or rehab* or retrain* or "re train*" or "self guide*" or "self help" or selfguide* or selfhelp or session* or skill* or strateg* or support* or teach* or technique* or therap* or train* or treat* or "work shop*" or workshop*))
s45	ti ((cd or communication or digital or electronic* or mobile or net or pc* or pda or phone* or phoning or tablet* or technolog* or telephon* or web or www) n7 (advocacy or application* or approach* or coach* or educat* or exchang* or guide* or help* or instruct* or interact* or interven* or learn* or manag* or meeting* or module* or network* or package* or participat* or prevent* or program* or psychoanaly* or psychotherap* or rehab* or retrain* or "re train*" or "self guide*" or "self help" or selfguide* or selfhelp or session* or skill* or strateg* or support* or teach* or technique* or therap* or train* or treat* or "work shop*" or

	workshop*)) or ab ((cd or communication or digital or electronic* or mobile or net or pc* or pda or phone* or phoning or tablet* or technolog* or telephon* or web or www) n7 (advocacy or application* or approach* or coach* or educat* or exchang* or guide* or help* or instruct* or interact* or interven* or learn* or manag* or meeting* or module* or network* or package* or participat* or prevent* or program* or psychoanaly* or psychotherap* or rehab* or retrain* or "re train*" or "self guide*" or "self help" or selfguide* or selfhelp or session* or skill* or strateg* or support* or teach* or technique* or therap* or train* or treat* or "work shop*" or workshop*))
s44	ti ((cd or communication or digital or electronic* or mobile or net or pc or pda or phone* or phoning or tablet* or technolog* or telephon* or web or www) n3 (aid* or assist* or based or deliver* or diary or diaries)) or ab ((cd or communication or digital or electronic* or mobile or net or pc or pda or phone* or phoning or tablet* or technolog* or telephon* or web or www) n3 (aid* or assist* or based or deliver* or diary or diaries))
s43	ti ((audio* or "cd rom" or cdrom or computer* or "communication aid" or cyber* or (digital n1 (assistant* or divide)) or dvd or (e n1 (communicat* or consult* or mail* or portal* or visit*)) or email* or ecommunicat* or econsult* or email* or eportal* or etablet* or evisit* or (e n1 (communicat* or consult* or mail* or tablet* or visit*)) or facebook* or floppy or handheld or "hand held" or "information technolog*" or interactiv* or internet or iphone* or laptop* or multimedia or "multi media" or myspace* or "my space*" or online or palmtop or "palm top" or "personal digital" or portal* or "reminder system*" or "remote consultation*" or "short messag*" or skype or sms or (social n1 (media or network*)) or texts or texting or video* or virtual or website)) or ab ((audio* or "cd rom" or cdrom or computer* or "communication aid" or cyber* or (digital n1 (assistant* or divide)) or dvd or (e n1 (communicat* or consult* or mail* or portal* or visit*)) or email* or ecommunicat* or econsult* or email* or eportal* or etablet* or evisit* or (e n1 (communicat* or consult* or mail* or tablet* or visit*)) or facebook* or floppy or handheld or "hand held" or "information technolog*" or interactiv* or internet or iphone* or laptop* or multimedia or "multi media" or myspace* or "my space*" or online or palmtop or "palm top" or "personal digital" or portal* or "reminder system*" or "remote consultation*" or "short messag*" or skype or sms or (social n1 (media or network*)) or texts or texting or video* or virtual or website))
S42	(mh "audiovisuals") or (mh "computer assisted instruction") or (mh "communications media") or (mh "telecommunications") or (mh "electronic mail") or (mh "internet") or (mh "telehealth+") or (mh "computer literacy") or (mh "computer user training") or (mh "computing methodologies") or (mh "computer systems+") or (mh "decision making, computer assisted") or (mh "therapy, computer assisted") or (mh "telephone information services") or (mh "multimedia") or (mh "optical disks+") or (mh "programmed instruction") or (mh "social network

	analysis (saba ccc)") or (mh "social networks") or (mh "telepsychiatry") or (mh "telehealth") or (mh "telemedicine") or (mh "remote consultation") or (mh "telenursing") or (mh "telephone") or (mh "instant messaging") or (mh "interactive voice response systems") or (mh "wireless communications") or (mh "internet")
S41	s1 or s2 or s3 or s4 or s5 or s6 or s7 or s8 or s9 or s10 or s11 or s12 or s13 or s14 or s15 or s16 or s17 or s18 or s19 or s20 or s21 or s22 or s23 or s24 or s25 or s26 or s27 or s28 or s29 or s30 or s31 or s32 or s33 or s34 or s35 or s36 or s37 or s38 or s39 or s40
S40	ti (tic or tics or tourette) or ab (tic or tics or tourette)
s39	ti (((acetomorphine or amphetamine* or amphetamine* or analeptic* or cannabis or cocaine or crack or crank or dextroamphetamine* or diacephine or diacetylmorphine or diacetylmorphine or diamorphin* or diamorphine or diaphorin or drug or hashish or heroin or marihuana or marijua* or methadone* or methamphetamine* or morfin* or morphacetin or morphin* or naltrexone or narcotic* or opioid* or opium or polydrug* or psychostimulant* or speed or stimulant* or stimulant* or substance or uppers or cigarette* or nicotin* or smoking or tobacco) n3 (abstain* or abstinen* or abus* or addict* or (excessive n1 use*) or dependen* or (inject* n2 drug*) or intoxicat* or misus* or “over dos*” or overdos* or (use* n1 (disorder* or illicit)) or withdraw*)) or “drug user*”) or ab (((acetomorphine or amphetamine* or amphetamine* or analeptic* or cannabis or cocaine or crack or crank or dextroamphetamine* or diacephine or diacetylmorphine or diacetylmorphine or diamorphin* or diamorphine or diaphorin or drug or hashish or heroin or marihuana or marijua* or methadone* or methamphetamine* or morfin* or morphacetin or morphin* or naltrexone or narcotic* or opioid* or opium or polydrug* or psychostimulant* or speed or stimulant* or stimulant* or substance or uppers or cigarette* or nicotin* or smoking or tobacco) n3 (abstain* or abstinen* or abus* or addict* or (excessive n1 use*) or dependen* or (inject* n2 drug*) or intoxicat* or misus* or “over dos*” or overdos* or (use* n1 (disorder* or illicit)) or withdraw*)) or “drug user*”)
s38	ti ((alcoholi* or drinker* or (drink* n2 use*) or ((alcohol* or drink*) n5 (abstinen* or abstain* or abus* or addict* or attenuat* or binge* or crav* or dependen* or detox* or disease* or disorder* or excessiv* or harm* or hazard* or heavy or “high risk” or intoxicat* or misus* or overdos* or (over n1 dos*) or problem* or rehab* or reliance or reliant or relaps* or withdraw*)) or (control* n2 drink*) or sobriet*)) or ab ((alcoholi* or drinker* or (drink* n2 use*) or ((alcohol* or drink*) n5 (abstinen* or abstain* or abus* or addict* or attenuat* or binge* or crav* or dependen* or detox* or disease* or disorder* or excessiv* or harm* or hazard* or heavy or “high risk” or intoxicat* or misus* or overdos* or (over n1 dos*) or problem* or rehab* or reliance or reliant or relaps* or withdraw*)) or (control* n2 drink*) or sobriet*))

s37	ti ((((anxiet* or anxious* or phobia* or phobic*) n2 (performance or social*)) or socioanxi* or sociophobi* or ((blush* or sweat* or trembl*) n3 (anxiet* or anxious* or chronic* or excessiv* or fear* or severe)) or ((interpersonal or “inter personal” or social* or socio*) n2 (aversion* or aversiv* or confiden* or difficult* or disorder* or distress* or fear*)) or hyperhydrosis or hyperperspirat* or (hyper n1 (hydrosis or perspirat*)) or ((mute* or mutism) n2 (elective* or selective*)) or ((“negative evaluation” or speak*) n3 (anxiet* or anxious* or distress* or fear*)) or paruresis or (((personalit* or phobi* or social* or socio*) n2 avoid*) or “avoidant disorder”) or (phobi* n2 neuros*) or “phobic disorder*” or (school* n2 (anxiet* or anxious* or phobi* or refuse or refusal)) or (shy or shyness) or “specific phobia*”)) or ab ((((anxiet* or anxious* or phobia* or phobic*) n2 (performance or social*)) or socioanxi* or sociophobi* or ((blush* or sweat* or trembl*) n3 (anxiet* or anxious* or chronic* or excessiv* or fear* or severe)) or ((interpersonal or “inter personal” or social* or socio*) n2 (aversion* or aversiv* or confiden* or difficult* or disorder* or distress* or fear*)) or hyperhydrosis or hyperperspirat* or (hyper n1 (hydrosis or perspirat*)) or ((mute* or mutism) n2 (elective* or selective*)) or ((“negative evaluation” or speak*) n3 (anxiet* or anxious* or distress* or fear*)) or paruresis or (((personalit* or phobi* or social* or socio*) n2 avoid*) or “avoidant disorder”) or (phobi* n2 neuros*) or “phobic disorder*” or (school* n2 (anxiet* or anxious* or phobi* or refuse or refusal)) or (shy or shyness) or “specific phobia*”))
s36	ti ((autoaggress* or “auto aggress*” or automutilat* or “auto mutilat*” or cutt* or overdose* or (self n2 cut*) or selfdestruct* or “self destruct*” or selfharm* or “self harm*” or selfimmolat* or “self immolat*” or selfinflict* or “self inflict*” or selfinjur* or “self injur*” or selfmutilat* or “self mutilat*” or selfpoison* or “self poison*” or suicid*)) or ab ((autoaggress* or “auto aggress*” or automutilat* or “auto mutilat*” or cutt* or overdose* or (self n2 cut*) or selfdestruct* or “self destruct*” or selfharm* or “self harm*” or selfimmolat* or “self immolat*” or selfinflict* or “self inflict*” or selfinjur* or “self injur*” or selfmutilat* or “self mutilat*” or selfpoison* or “self poison*” or suicid*))
s35	ti ((delusion* or hallucinat* or hebephreni* or oligophreni* or paranoi* or psychotic* or psychosis or psychoses or schizo*)) or ab ((delusion* or hallucinat* or hebephreni* or oligophreni* or paranoi* or psychotic* or psychosis or psychoses or schizo*))
s34	ti ((“acute stress” or asd or “combat neuros*” or “combat syndrome” or “concentration camp syndrome” or desnos or “extreme stress” or “flash back*” or flashback* or hypervigilan* or hypervigilen* or posttraumatic* or “post traumatic*” or “psych* stress” or “psych* trauma*” or” psycho trauma*” or psychotrauma* or ptsd or “railway spine” or (rape n2 trauma*) or “re experienc*” or reexperienc* or “stress disorder*” or “torture syndrome” or “traumatic neuros*” or “traumatic stress” or (trauma* and (avoidance or death* or emotion* or grief or horror or nightmare* or “night mare*”)))) or ab ((“acute stress” or asd or “combat neuros*”

	or “combat syndrome” or “concentration camp syndrome” or desnos or “extreme stress” or “flash back*” or flashback* or hypervigilan* or hypervigilen* or posttraumatic* or “post traumatic*” or “psych* stress” or “psych* trauma*” or” psycho trauma*” or psychotrauma* or ptsd or “railway spine” or (rape n2 trauma*) or “re experienc*” or reexperienc* or “stress disorder*” or “torture syndrome” or “traumatic neuros*” or “traumatic stress” or (trauma* and (avoidance or death* or emotion* or grief or horror or nightmare* or “night mare*”))))
s33	ti ((acrophob* or agoraphob* or claustrophob* or emetophob* or homophob* or kinesiophob* or lesbophob* or neophob* or neurophob* or phobi* or transphob* or trypanophob* or xenophob* or ((acute* or chronic* or extreme* or intense* or irrational* or persistent* or serious) n2 fear*) or (fear* n4 (“air travel” or animal* or blood* or buses or ((closed or public) n2 space*) or crowd* or dark* or dental* or dentist* or dog* or dying or falls or falling or fly or flying or height* or hypochondriacal or injection* or injur* or laughed or “leaving home” or lightening or movement* or needle* or night* or panic* or plane* or reinjure* or school* or snake* or space* or spider* or test* or thunder* or train* or travel* or water)) or “specific fear*”)) or ab ((acrophob* or agoraphob* or claustrophob* or emetophob* or homophob* or kinesiophob* or lesbophob* or neophob* or neurophob* or phobi* or transphob* or trypanophob* or xenophob* or ((acute* or chronic* or extreme* or intense* or irrational* or persistent* or serious) n2 fear*) or (fear* n4 (“air travel” or animal* or blood* or buses or ((closed or public) n2 space*) or crowd* or dark* or dental* or dentist* or dog* or dying or falls or falling or fly or flying or height* or hypochondriacal or injection* or injur* or laughed or “leaving home” or lightening or movement* or needle* or night* or panic* or plane* or reinjure* or school* or snake* or space* or spider* or test* or thunder* or train* or travel* or water)) or “specific fear*”))
s32	ti panic* or ab panic*
s31	ti ((“clean* response*” or compulsional or compulsions or obsession or obsessional or obsessions or (“obsessive compulsive” n1 (disorder* or neuros*)) or ocd or osteochondr* compulsion or (recurr* n1 (obsession* or thought))) or (“body dysmorphi*” or dysmorphophobi* or “imagine* ugl*” or “obsess* ruminat*” or scrupulosity or ((symmetr* or count* or arrang* or order* or wash* or repeat* or hoard* or clean* or check*) n1 compulsi*))) or ab ((“clean* response*” or compulsional or compulsions or obsession or obsessional or obsessions or (“obsessive compulsive” n1 (disorder* or neuros*)) or ocd or osteochondr* compulsion or (recurr* n1 (obsession* or thought))) or (“body dysmorphi*” or dysmorphophobi* or “imagine* ugl*” or “obsess* ruminat*” or scrupulosity or ((symmetr* or count* or arrang* or order* or wash* or repeat* or hoard* or clean* or check*) n1 compulsi*)))

S30	ti ((anorexi* or bing* or bulimi* or (compulsive n2 (eat* or vomit*)) or (eating n2 disorder*) or overeat* or (restrict* n2 eat*) or ((self induc* or selfinflict*) n2 vomit*))) or ab ((anorexi* or bing* or bulimi* or (compulsive n2 (eat* or vomit*)) or (eating n2 disorder*) or overeat* or (restrict* n2 eat*) or ((self induc* or selfinflict*) n2 vomit*)))
s29	ti ((anorexi* or bing* or bulimi* or (compulsive n2 (eat* or vomit*)) or (eating n2 disorder*) or overeat* or (restrict* n2 eat*) or ((self induc* or selfinflict*) n2 vomit*))) or ab ((anorexi* or bing* or bulimi* or (compulsive n2 (eat* or vomit*)) or (eating n2 disorder*) or overeat* or (restrict* n2 eat*) or ((self induc* or selfinflict*) n2 vomit*)))
s28	ti ((depres* or “seasonal affective disorder*” or dysthym* or melancholi*)) or ab ((depres* or “seasonal affective disorder*” or dysthym* or melancholi*))
s27	ti (((behav* n2 (agnostic or challeng* or dangerous or destructive or difficult* or disorder* or disrupt* or disturb* or externali* or problem*)) or (child* n3 (behav* or conduct*)) or (conduct* n2 (defian* or difficult* or disorder* or disturb* or problem*)) or (oppositional n3 (defiant* or disorder*)))) or ab (((behav* n2 (agnostic or challeng* or dangerous or destructive or difficult* or disorder* or disrupt* or disturb* or externali* or problem*)) or (child* n3 (behav* or conduct*)) or (conduct* n2 (defian* or difficult* or disorder* or disturb* or problem*)) or (oppositional n3 (defiant* or disorder*))))
s26	ti (((behav* n2 (agnostic or challeng* or dangerous or destructive or difficult* or disorder* or disrupt* or disturb* or externali* or problem*)) or (child* n3 (behav* or conduct*)) or (conduct* n2 (defian* or difficult* or disorder* or disturb* or problem*)) or (oppositional n3 (defiant* or disorder*)))) or ab (((behav* n2 (agnostic or challeng* or dangerous or destructive or difficult* or disorder* or disrupt* or disturb* or externali* or problem*)) or (child* n3 (behav* or conduct*)) or (conduct* n2 (defian* or difficult* or disorder* or disturb* or problem*)) or (oppositional n3 (defiant* or disorder*))))
s25	ti ((((bipolar or bipolar or “bi polar”) n5 (disorder* or depress*)) or ((cyclothymi* or rapid or ultradian) n5 cycl*) or hypomani* or mania* or manic* or “mixed episode*” or rcbd)) or ab ((((bipolar or bipolar or “bi polar”) n5 (disorder* or depress*)) or ((cyclothymi* or rapid or ultradian) n5 cycl*) or hypomani* or mania* or manic* or “mixed episode*” or rcbd))
s24	ti ((((bipolar or bipolar or “bi polar”) n5 (disorder* or depress*)) or ((cyclothymi* or rapid or ultradian) n5 cycl*) or hypomani* or mania* or manic* or “mixed episode*” or rcbd)) or ab ((((bipolar or bipolar or “bi polar”) n5 (disorder* or depress*)) or ((cyclothymi* or rapid or ultradian) n5 cycl*) or hypomani* or mania* or manic* or

	“mixed episode*” or rcbd))
s23	ti ((asperger* or autis* or “cerebroatrophic hyperammonemia* “ or (kanner* n1 (disorder* or syndrome*)) or (pervasive* n2 (development* or neurodevelopment*)) or pddnos or “pdd nos” or (rett* n1 (disorder* or syndrome*)))) or ab ((asperger* or autis* or “cerebroatrophic hyperammonemia* “ or (kanner* n1 (disorder* or syndrome*)) or (pervasive* n2 (development* or neurodevelopment*)) or pddnos or “pdd nos” or (rett* n1 (disorder* or syndrome*))))
s22	ti (((attenti* or disrupt*) n3 (adolescen* or adult* or behav* or child* or class or classes or classroom* or condition* or difficult* or disorder* or learn* or people or person* or poor or problem* or process* or youngster*)) or (attenti* n3 deficit*) or (hyper n1 activ*) or (hyper n1 kin*) or (minimal n1 brain) or (over n1 activ*) or “ad hd” or addh or adhd or hkd or hyperactiv* or hyperkin* or impulsiv* or inattentiv* or overactivity) or ab (((attenti* or disrupt*) n3 (adolescen* or adult* or behav* or child* or class or classes or classroom* or condition* or difficult* or disorder* or learn* or people or person* or poor or problem* or process* or youngster*)) or (attenti* n3 deficit*) or (hyper n1 activ*) or (hyper n1 kin*) or (minimal n1 brain) or (over n1 activ*) or “ad hd” or addh or adhd or hkd or hyperactiv* or hyperkin* or impulsiv* or inattentiv* or overactivity)
s21	ti ((anxiet* or anxious* or ((chronic* or excessiv* or intens* or (long* n2 last*) or neuros* or neurotic* or ongoing or persist* or serious* or sever* or uncontrol* or “un control*” or unrelent* or “un relent*”) n2 worry))) or ab ((anxiet* or anxious* or ((chronic* or excessiv* or intens* or (long* n2 last*) or neuros* or neurotic* or ongoing or persist* or serious* or sever* or uncontrol* or “un control*” or unrelent* or “un relent*”) n2 worry)))
S20	ti (((mental* or psychologic*) n2 (health or disorder* or disease* or deficien* or illness or problem*))) or ab (((mental* or psychologic*) n2 (health or disorder* or disease* or deficien* or illness or problem*)))
s19	mw (alcoholi* or ((alcohol* or cigarette* or drug or nicotin* or smoking or tobacco) and (abstinence or dependen* or detoxification or intoxicat* or rehabilit* or withdraw*))) or (needle n1 (exchange or sharing))
s18	(mh "tic") or (mh "tourette syndrome")
s17	(mh "substance use disorders+") or (mh "behavior, addictive")

s16	(mh "shyness")
s15	(mh "mutism")
s14	(mh "hyperhidrosis")
s13	(mh "suicide") or (mh "suicidal ideation") or (mh "suicide, attempted")
s12	(mh "risk for self-mutilation (nanda)") or (mh "self mutilation risk (saba ccc)") or (mh "self-mutilation restraint (iowa noc)")
s11	(mh "self-injurious behavior")
s10	(mh "delusions")
s9	(mh "hallucinations") or (mh "hallucination management (iowa nic)")
s8	(mh "stress, psychological")
s7	(mh "panic disorder")
s6	(mh "compulsive behavior")
s5	(mh "body dysmorphic disorder")
s4	(mh "child behavior+") or (mh "child behavior disorders") or (mh "child behavior alteration (saba ccc)")
s3	(mh "rett syndrome")
s2	(mh "anxiety")
s1	(mh "mental disorders+")

AEI, ASSIA, BEI, BHI, ERIC, IBSS, Pais International, Sociological Abstracts, SSA – ProQUEST interface

1. (((mental* or psychologic*) near/2 (deficien* or disease* or disorder* or disturbance* or dysfunction* or health or illness* or problem*)) or anxiet* or anxious* or ((chronic* or excessiv* or intens* or (long* near/2 last*) or neuros* or neurotic* or ongoing or persist* or serious* or sever* or uncontrol* or un control* or unrelent* or un relent*) near/2 worry) or clean* response* or compulsional or compulsions or obsession or obsessional or obsessions or (obsessive compulsive near/1 (disorder* or neuros*)) or ocd or osteochondr* or compulsion or (recurr* near/1 (obsession* or thought))).ti,ab. or (body dysmorphi* or dysmorphophobi* or imagine* ugl* or obsess* ruminat* or scrupulosity or ((arrang* or check* or clean* or count* or hoard* or order* or repeat* or symmetr* or wash*) near/1 compulsi*) or panic* or acrophob* or agoraphob* or claustrophob* or emetophob* or enfantaphob* or homophob* or infantaphob* or kinesiophob* or lesbophob* or neophob* or neurophob* or phobi* or transphob* or to?ophobi* or trypanophob* or xenophob* or ((acute* or chronic* or extreme* or intens* or irrational* or persistent* or serious*) near/2 fear*) or (fear* near/4 (air travel or animal* or birth* or blood* or buses or ((closed or public) near/2 space*) or childbirth* or crowd* or dark* or dental* or dentist* or dog* or dying or falls or falling or fly or flying or height* or hypochondriacal or injection* or injur* or laughed or leaving home or lightening or movement* or needle* or night* or panic* or plane* or pregnan* or reinjure* or school* or snake* or space* or spider* or test* or thunder* or tokophob* or tocophob* or train* or travel* or water)) or specific fear* or ((anxiet* or anxious* or phobia* or phobic*) near/2 (performance or social*)) or anthropophobi* socioanxi* or sociophobi* or ((blush* or sweat* or trembl*) near/3 (anxiet* or anxious* or chronic* or excessiv* or fear* or severe)) or ((interpersonal or inter personal or social* or socio*) near/2 (aversion* or aversiv* or confiden* or difficult* or disorder* or distress* or fear*)) or hyperhydrosis or hyperperspirat* or (hyper near/1 (hydrosis or perspirat*)) or ((mute* or mutism) near/2 (elective* or selective*)) or ((negative evaluation or speak*) near/3 (anxiet* or anxious* or distress* or fear*)) or paruresis or (((personalit* or phobi* or social* or socio*) near/2 avoid*) or avoidant disorder) or ((phobi* or social) near/2 neuros*) or phobic disorder* or (shy or shyness) or specific phobia* or acute stress or asd or combat neuros* or combat syndrome or concentration camp syndrome or desnos or extreme stress or flash back* or flashback* or hypervigilan* or hypervigilen* or posttrauma* or post trauma* or (psycho* near/1 (stress* or trauma*)) or ptsd or railway spine or (rape near/2 trauma*) or re experienc* or reexperienc* or stress disorder* or torture syndrome or (traumatic near/1 (neuros* or stress)) or (trauma* and (avoidance or death* or emotion* or grief or horror or nightmare* or night mare*)) or anorexi* or bing* or bulimi* or (compulsive near/2 (eat* or vomit*)) or (eating near/2 disorder*) or hyperorexia or over eat* or overeat* or ((forced or self induc* or selfinduc*) near/2 (purg* or vomit*)) or (restrict* near/2 eat*) or (affective or mood) near/1 (disorder* or disturbance* or dysfunction*) or cyclothym* or depres* or dysthym* or (low

near/2 mood) or melanchol* or seasonal affective disorder* or ((bipolar or bi polar) near/5 (disorder* or depress*)) or ((cyclothymi* or rapid or ultradian) near/5 cycl*) or hypomani* or mania* or manic* or mixed episode* or rcbd or a?athisi* or hebephreni* or (neuroleptic* and ((malignant and syndrome) or (movement near/2 disorder))) or oligophreni* or psychotic* or psychos?s or schizo* or (tardiv* and dyskine*) or parkinsoni* or neuroleptic induc* or psychiatric* or ((aggressiv* or anxious* or borderline* or dependent* or eccentric* or emotional* or immature or passiv* or psychoneurotic or psycho neurotic or unstable) near/5 personalit*) or (anal* near/1 (personalit* or character* or retentiv*)) or aspd or character disorder* or (personalit* near/5 disorder*) or anankastic* or asocial* or avoidant* or antisocial* or anti social* or compulsiv* or dissocial* or histrionic* or narciss* or neuropsychopath* or obsessiv* or paranoi* or psychopath* or sadist* or schizoid* or schizotyp* or sociopath* or (moral near/2 insanity) or cluster a or cluster b or cluster c or (dsm and (axis and ii)) or (icd and (f60 or f61 or f62)) or ((anxious* or dramatic* or eccentric* or emotional* or fearful* or odd*) near/5 cluster*) or autoaggress* or auto aggress* or automutilat* or auto mutilat* or cutt* or overdose* or (self near/2 cut*) or selfdestruct* or self destruct* or selfharm* or self harm* or selfimmolat* or self immolat* or selfinflict* or self inflict* or selfinjur* or self injur* or selfmutilat* or self mutilat* or selfpoison* or self poison* or suicid* or alcoholi* or drinker* or (drink* n2 use*) or ((alcohol* or drink*) n5 (abstinen* or abstain* or abus* or addict* or attenuat* or binge* or crav* or dependen* or detox* or disease* or disorder* or excessiv* or harm* or hazard* or heavy or “high risk” or intoxicat* or misus* or overdos* or (over n1 dos*) or problem* or rehab* or reliance or reliant or relaps* or withdraw*)) or (control* n2 drink*) or sobriet* or ((acetomorphine or amphetamine* or amphetamine* or analeptic* or cannabis or cocaine or crack or crank or dextroamphetamine* or diacephine or diacetylmorphine or diacetylmorphine or diamorphin* or diamorphine or diaphorin or drug or hashish or heroin or marihuana or marijua* or methadone* or methamphetamine* or morfin* or morphacetin or morphin* or naltrexone or narcotic* or opioid* or opium or polydrug* or psychostimulant* or speed or stimulant* or stimulant* or substance or uppers or cigarette* or nicotin* or smoking or tobacco) n3 (abstain* or abstinen* or abus* or addict* or (excessive n1 use*) or dependen* or (inject* n2 drug*) or intoxicat* or misus* or “over dos*” or overdos* or (use* n1 (disorder* or illicit)) or withdraw*)) or “drug user*” or tic or tics or tourette*)

2. (audio* or “cd rom” or cdrom or computer* or “communication aid” or cyber* or (digital near/1 (assistant* or divide)) or dvd or (e near/1 (communicat* or consult* or mail* or portal* or visit*)) or email* or ecommunicat* or econsult* or email* or eportal* or etablet* or evisit* or (e near/1 (communicat* or consult* or mail* or tablet* or visit*)) or facebook* or floppy or handheld or “hand held” or “information technolog*” or interactiv* or internet or iphone* or laptop* or multimedia or “multi media” or myspace* or “my space*” or online or palmtop or “palm top” or “personal digital” or portal* or “reminder system*” or “remote consultation*” or “short messag*” or skype or sms or (social near/1 (media or network*)) or texts or texting or video* or virtual or website or ((cd or

communication or digital or electronic* or mobile or net or pc or pda or phone* or phoning or tablet* or technolog* or telephon* or web or www) near/3 (aid* or assist* or based or deliver* or diary or diaries)) or ((cd or communication or digital or electronic* or mobile or net or pc* or pda or phone* or phoning or tablet* or technolog* or telephon* or web or www) near/7 (advocacy or application* or approach* or coach* or educat* or exchang* or guide* or help* or instruct* or interact* or interven* or learn* or manag* or meeting* or module* or network* or package* or participat* or prevent* or program* or psychoanaly* or psychotherap* or rehab* or retrain* or "re train*" or "self guide*" or "self help" or selfguide* or selfhelp or session* or skill* or strateg* or support* or teach* or technique* or therap* or train* or treat* or "work shop*" or workshop*)) or (vr near/2 (advocacy or application* or approach* or coach* or educat* or exchang* or exposure or feedback* or guide* or help* or instruct* or interact* or interven* or learn* or manag* or meeting* or module* or network* or package* or participat* or prevent* or program* or psychoanaly* or psychotherap* or rehab* or retrain* or "re train*" or "self guide*" or "self help" or selfguide* or selfhelp or session* or skill* or strateg* or support* or teach* or technique* or therap* or train* or treat* or "work shop*" or workshop*)) or caccbt or ccbt or "c cbt" or "call in" or (caller* near/3 (interven* or program* or therap* or treat*)) or callline* or "call line*" or ediar* or ehealth or emediat* or elearn* or etherap* or (e near/1 (diar* or learn or health or mediat* or therap*)) or "help line*" or helpline* or hotline* or "hot line*" or "phone in" or phonein or telecare or telecommunication or teleconsult* or telehealth or telemedicine or telement* or telepsychology or telepsychiatry or teletherap* or (tele near/1 (care or communication or consult* or health or medicine or mental* or psychology or psychiatry or therap*)) or videocam* or "video cam*" or webcam* or "web cam*")

3. ("alles onder controle" or "autism xpress" or autismexpress or "avatars programme" or (beating near/2 blues) or "big white wall" or "blue pages" or bluepages or ("brave program" and anxiet*) or ("camp cope" near/2 lot) or ("catch it" and depres*) or "cool teens" or "coping cat" or crufadschools or ("e couch" and depres*) or fearfighter or "ff education" or ffeducation or "grip op je dip" or "internet psychiatri" or "internet psykiatri" or "leap project" or "linden method" or ("little prince" and depres*) or ("living life" near/2 full) or "mind your* mind" or "mood gym" or "mood helper" or moodgym or moodhelper or "my* body my* life " or "net ff" or netcope or netff or "oc fighter" or ocfighter or "online anxiety prevention" or "overcoming bulimia online" or ("overcoming depression" and program*) or "panic online" or "pix talk" or pixtalk or (restoring near/2 balance) or sparx or "standalone ff" or standaloneff or "student bodie*" or studentbodie* or ((the* near/1 lowdown) and depres*) or "the journey" or "therapeutic learning program*" or "think feel do" or "trouble on* the* tightrope" or "whiz kid games" or ("youth mental health" near/2 parent* guide))
4. (adolescen* or boy* or child* or delinquen* or girl* or graders or junior* or juvenile* or kid* or kindergarten or minors or paediatric* or pediatric* or postpubert* or postpubescen* or prepubert* or prepubescen* or preschool* or preteen* or pubertal or puberty or puberties or pubescen* or school* or student*

or teen* or (young* near/2 (inpatient* or patient* or people* or person* or population*)) or underage* or “under age*” or youngster* or youth*)

5. s1 and s2 and s4
6. (adhd or attention deficit* or (conduct* near/2 (defian* or difficult* or disorder* or disturb* or problem*)) or (oppositional near/3 (defiant* or disorder*)))
7. (s2 and s6)
8. (s3 and s4)
9. ((attention* or cognitive*) and bias* and (modif* or train* or retrain*)) or (''attention* modif*'' or ''attention retrain*'' or ''attention train*'')
10. s4 and s9
11. s5 or s7 or s8 or s10

2 Randomised controlled trial filter

Embase, Medline, PreMedline, PsycINFO – OVID SP interface

1. exp "clinical trial (topic)"/ or exp clinical trial/ or crossover procedure/ or double blind procedure/ or placebo/ or randomization/ or random sample/ or single blind procedure/
2. 1 use emez
3. exp clinical trial/ or exp “clinical trials as topic”/ or cross-over studies/ or double blind method/ or placebos/ or random allocation/ or single-blind method/
4. 3 use mesz, prem
5. (clinical trials or placebo or random sampling).sh,id.
6. 5 use psyh
7. (clinical adj2 trial$).ti,ab.
8. (crossover or cross over).ti,ab.
9. (((single$ or doubl$ or trebl$ or tripl$) adj2 blind$) or mask$ or dummy or doubleblind$ or singleblind$ or trebleblind$ or tripleblind$).ti,ab.
10. (placebo$ or random$).ti,ab.
11. treatment outcome$.md. use psyh
12. animals/ not human$.mp. use emez
13. animal$/ not human$/ use mesz, prem
14. (animal not human).po. use psyh
15. (or/2,4,6-11) not (or/12-14)

CINAHL – EBSCO interface

s10	s9 not s8
s9	s1 or s2 or s3 or s4 or s5 or s6 or s7
s8	(mh "animals") not (mh "human")
s7	(pt "clinical trial") or (pt "randomized controlled trial")
s6	ti (placebo* or random*) or ab (placebo* or random*)
s5	ti (single blind* or double blind* or treble blind* or mask* or dummy* or singleblind* or doubleblind* or trebleblind*) or ab (single blind* or double blind* or treble blind* or mask* or dummy* or singleblind* or doubleblind* or trebleblind*)
s4	ti (crossover or cross over) or ab (crossover or cross over)
s3	ti clinical n2 trial* or ab clinical n2 trial*
s2	(mh "crossover design") or (mh "placebos") or (mh "random assignment") or (mh "random sample")
s1	(mh "clinical trials+")

AEI, ASSIA, BEI, ERIC, IBSS, Social Service Abstracts, Sociological Abstracts – ProQuest interface

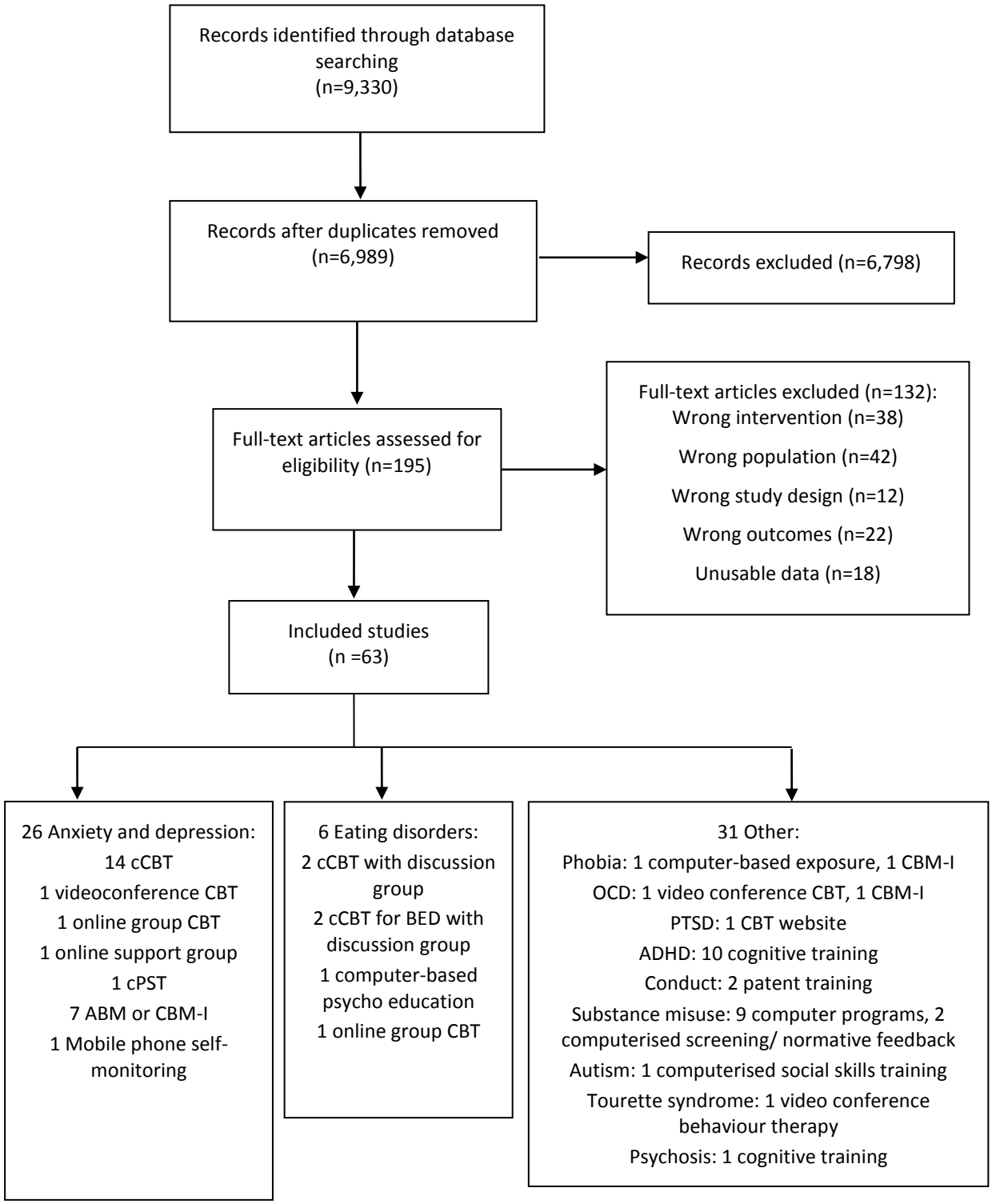
1. su.exact.explode("clinical randomized controlled trials" or "cluster randomized controlled trials" or "double blind randomized controlled trials" or "randomized consent design" or "randomized controlled trials" or "single blind randomized controlled trials" or "urn randomization")
2. su.exact("clinical trials")
3. su.exact("crossover trials")
4. su.exact("placebos")
5. su.exact("random sampling")
6. su.exact("randomization")
7. su.exact("random samples")
8. su.exact("placebo effect")
9. ti (clinical near/2 trial*) or ab (clinical near/2 trial*)
10. ti (crossover or "cross over") or ab (crossover or "cross over")
11. ti (((single* or doubl* or trebl* or tripl*) near/2 blind*) or mask* or dummy or doubleblind* or singleblind* or trebleblind* or tripleblind*) or ab (((single* or doubl* or trebl* or tripl*) near/2 blind*) or mask* or dummy or doubleblind* or singleblind* or trebleblind* or tripleblind*)
12. ti (placebo* or random*) or ab (placebo* or random*)
13. s1 or s2 or s3 or s4 or s5 or s6 or s7 or s8 or s9 or s10 or s11 or s12

APPENDIX 8: QUALITY CHECKLISTS FOR CLINICAL STUDIES AND REVIEWS

Table 16: The Cochrane Collaboration's tool for assessing risk of bias

Domain	Description	Review authors' judgement
Sequence generation	Describe the method used to generate the allocation sequence in sufficient detail to allow an assessment of whether it should produce comparable groups.	Was the allocation sequence adequately generated?
Allocation concealment	Describe the method used to conceal the allocation sequence in sufficient detail to determine whether intervention allocations could have been foreseen in advance of, or during, enrolment.	Was allocation adequately concealed?
Blinding of participants personnel and outcome assessors *Assessments should be made for each main outcome (or class of outcomes).*	Describe all measures used, if any, to blind study participants and personnel from knowledge of which intervention a participant received. Provide any information relating to whether the intended blinding was effective.	Was knowledge of the allocated intervention adequately prevented during the study?
Incomplete outcome data *Assessments should be made for each main outcome (or class of outcomes).*	Describe the completeness of outcome data for each main outcome, including attrition and exclusions from the analysis. State whether attrition and exclusions were reported, the numbers in each intervention group (compared with total randomized participants), reasons for attrition/exclusions where reported, and any re-inclusions in analyses performed by the review authors.	Were incomplete outcome data adequately addressed?
Selective outcome reporting	State how the possibility of selective outcome reporting was examined by the review authors, and what was found.	Are reports of the study free of suggestion of selective outcome reporting?
Other sources of bias	State any important concerns about bias not addressed in the other domains in the tool. If particular questions/entries were pre-specified in the review's protocol, responses should be provided for each question/entry.	Was the study apparently free of other problems that could put it at a high risk of bias?

APPENDIX 9: PRISMA DIAGRAM



APPENDIX 10: STUDY CHARACTERISTIC TABLES

Table 17: Study characteristics: interventions for anxiety and depression

Study	Study design	Population	Intervention	Control/ alternative interventions	Assessment (from baseline)
cCBT for anxiety and depression					
Spence 2011	RCT Main inclusion criteria: - diagnosis of any anxiety disorder	115 young people Aged 12-18 years Mean age 14.0 years (SD 1.6) 41% male Principal diagnosis: 48% GAD, 35% social phobia, 13% separation anxiety disorder, 4% specific phobia	cCBT for anxiety (BRAVE for Teenagers-ONLINE): Young people: Ten weekly 60 minute sessions, booster sessions at one and three months after treatment Parents: Five 60 minute sessions Email feedback on homework and phone calls from therapist	Waitlist control: No therapy Face-to-face CBT: Young people: Ten weekly 60 minute sessions, booster sessions at one and three months after treatment Parents: Five 60 minute sessions	Post-treatment: 12 weeks Follow-up: 12 months
Wuthrich 2012	RCT Main inclusion criteria: - diagnosis of any anxiety disorder	43 young people Aged 14-17 years Mean age 15.2 years (SD 1.1) 37% male Principal diagnosis: 39.5% Social phobia, 37.2% GAD, 7% Panic disorder, 4.7% Separation Anxiety disorder	cCBT for anxiety (Cool Teens, CD-ROM) Eight 30 minute sessions to be completed over 12 weeks Parents received information booklet Phone calls to young people and parents throughout from a dedicated therapist	Waitlist control: No treatment	Post-treatment: 12 weeks

		Mean ADIS-IV-C/P 5.7 SD 1.4			
Stasiak 2012	RCT Main inclusion criteria: - diagnosis of depression	34 young people Aged 13-18 years Mean age 15.2 years (SD 1.5) Mean CDRS-R 46.9 SD (8.1)	cCBT program for depression (The Journey) Interactive fantasy adventure game. 7 modules conducted over 4-10 weeks No therapist input except in cases where participant requested counselling	Placebo control program with psycho educational content	Post-treatment: 10 weeks Follow-up: 14 weeks
Merry 2012	RCT (non-inferiority design) Main inclusions criteria: - mild to moderate depression (10-19 on depression scale of PHQ-9 or clinician's judgement of depressive symptoms)	187 young people Aged 12-19 years Mean age 15.6 years (SD 1.6) Mean CDRS-R 42.6 SD (10.8)	cCBT program for depression (SPARX) Interactive fantasy game 7 modules completed over 4-7 weeks	Treatment as usual (most commonly face-to-face counselling)	Post-treatment: ~2 months Follow-up: 3 months
Fleming 2012	RCT Main inclusion criteria: - at risk of depression (CDRS-R score of over the 70th percentile)	32 young people Aged 12-16 years Mean age 14.9 years (SD 0.8) Mean CDRS-R 39.6 (33.9 to 45.2)	cCBT program for depression (SPARX) Interactive fantasy game 7 modules completed over 5 weeks at education sites. Sites visited or phoned weekly by therapist	Wait-list control	Post-treatment: 5 weeks

Clarke 2009	RCT Main inclusion criteria: - diagnosed or at risk of depression	160 young adults Aged 18-24 years Mean age 22.6 years (SD 2.5) Mean PHQ-8 9.3 (SD 5.0)	cCBT program for depression (MoodHelper) Information pages, depression monitor, diary, counter-thought generator, behaviour therapy tutorials with automated feedback Could use cCBT program as frequently as wished Treatment as usual	Treatment as usual: Linked to a website with information about depression	Post-treatment: 5, 10, 16 and 32 weeks
Sethi 2010	RCT Main inclusion criteria: - low to moderate levels of anxiety or depression (Dass-21 score: 10-20 for depression, 8-14 for anxiety)	38 students Aged 18-23 years Mean age 19.5 years (SD 1.6) Mean DASS-21: depression 16.4 (SD 9.2), anxiety 11.1 (SD 9)	cCBT program for anxiety and depression (MoodGym) Reading, demonstrations, quizzes and homework 5-modules Five 45 minute sessions over 3 weeks First session guided by therapist, available to help if needed in subsequent sessions	No treatment control Face-to face CBT Combined MoodGym and face-to-face CBT	Post-treatment: 3 weeks
Ellis 2011	RCT Main inclusion criteria: - low to moderate psychological distress (identified with K10)	39 students Aged 18-25 years Mean age 19.6 years (SD 1.7) Mean DASS-21: depression 13.69 (SD 6.82), anxiety 10.15 (SD 6.30)	cCBT program for anxiety and depression (MoodGym) Reading, demonstrations, quizzes and homework 5 modules completed in 3 60 minute sessions over 3 weeks Researcher present in all	No treatment control Online per support group (MoodGarden)	Post-treatment: 3 weeks

			sessions		
Sethi 2013	RCT Main inclusion criteria: Mild to moderate anxiety/and or depression (defined as score between 10-12 on depression subscale of DASS-21 and 8-14 on anxiety subscale of DASS-21)	67 young adults Aged 18-25 years Mean age 20.2 years (SD 1.3) 33% male Mean (SD) DASS-21 depression 20.8 (SD) 6.2, anxiety 22.5 (SD) 6.9	cCBT for anxiety and depression (MoodGYM, internet-based program) Five 1 hour sessions to be completed over 5 weeks. Psychologists were present in the room where participants completed the intervention to assist with any questions.	Waitlist control: No treatment Face to face CBT: Standardised manual-based, therapist-delivered CBT. Included worksheets and homework exercises.	Post-treatment: 5 weeks
Calear 2009	RCT Main inclusion criteria: - general school population	1,477 young people Aged 12-17 years Mean age 14.3 years (SD 0.8) Mean CES-D 11.8 (SD 9.4)	cCBT for anxiety and depression (MoodGym) Reading, demonstrations, quizzes and homework Five modules completed in 5 45 minute sessions over 5 weeks Teacher present to help with technical issues and monitor the class	Wait-list control	Post-treatment: 5 weeks Follow-up: 6 months
Stallard 2011	RCT Main inclusion criteria: - anxiety disorder or mild to moderate	20 children and young people Aged 11-16 years Mean age NR Mean AWS 11.3 (SD 5.1)	cCBT program for anxiety and depression (Think Feel Do) Quizzes, exercises, cartoons and music with narrator guiding participants through sessions	Wait-list control	Post-treatment: 6 weeks, wait-list control 4 weeks

	depression	Mean SCAS-C 38.0 (SD 19.1)	Six 30-45 minute sessions over six weeks, commonly in participant's homes Each session facilitated by a psychology assistant, teacher or nurse		
Tillfors 2011	RCT Main inclusion criteria: - diagnosis of social anxiety	19 young people and young adults Aged 15-21 years Aged 16.5 years (SD 1.6) Mean SPSQ-C 15.2 (SD 2.5)	cCBT program for social anxiety Information pages and homework of essay questions and quizzes 9 weekly sessions Therapists reviewed homework and gave email feedback	Wait-list control	Post-treatment: 9 weeks
Khanna 2010	RCT Main inclusion criteria: - diagnosed anxiety disorder	49 children Aged 7-13 years Mean age 10.1 years (SD 1.6) Mean ADIS-C/P 5.6 (SD 1.1) Principal diagnosis: 57.1% Generalized Anxiety Disorder, 16.3% SP, 14.3% separation anxiety, 8.1% specific phobia, 4% panic disorder	cCBT program for anxiety (Camp Cope-A-Lot) Text, animation with cartoon characters, photographs, videos and rewards. 12 weekly 35 minute sessions First six sessions completed independently Final six sessions completed with the help of a therapist Parents received two sessions with therapist	Computer-assisted education, support and attention control Face-to-face CBT	Post-treatment: 12 weeks Follow-up: 24 weeks

March 2009	RCT Main inclusion criteria: - anxiety diagnosis or at risk of anxiety (ADIS-C/P ≥4)	73 children Aged 7-12 years Mean age 9.5 years (SD 1.4) 38% Social phobia, 32% Separation anxiety disorder, 23% GAD, 7% specific phobia	cCBT program for anxiety (BRAVE for Children-ONLINE) Consecutive web pages with reading, exercises, games, quizzes and homework Children: 10 weekly 60 minute sessions Parents 6 weekly 60 minute sessions Therapists gave homework feedback and two phone calls to parents and children	Wait-list control	Post-treatment: 10 weeks Follow-up: 6 months
Video conference CBT for depression					
Nelson 2006	RCT Main inclusion criteria: - diagnosis of depression (met DSM-IV criteria)	38 children Aged 8-14 years Mean age 10.3 years (SD 2.0) 71% male Mean CDI 14.37 (SD 9.9)	Video conference CBT: One sessions a week for eight weeks	Face-to-face CBT: One sessions a week for eight weeks	Post-treatment: 8 weeks
Online group CBT					

Vanderzanden 2012	RCT Main inclusion criteria: - depressive symptoms (CES-D score between 10 and 45)	244 young adults Aged 16-25 years Mean age 20.9 years (SD 2.2) 16% male CES-D 32.3 (SD 8.3)	Therapist-guided online group CBT (Master Your Mood) Online forums of <6 participants shown course materials. Opportunities to respond in online sessions. Six weekly 90 minute sessions. Homework between sessions	Wait-list control	Post-treatment: 12 weeks
Online support group forum					
Ellis 2011	RCT Main inclusion criteria: - low to moderate psychological distress (assessed on K10)	39 students Aged 18-25 years Mean age 19.7 years (SD 1.7) 23% male Mean DASS-21: depression 13.69 (SD 6.82), anxiety 10.15 (SD 6.30)	Online support group forum and information website (MoodGarden) Participants post messages for discussion in online forum. Instructed to use for 60 minutes per week for 3 weeks. Website with information and tools for self-management of anxiety and depression	No treatment control	Post-treatment: 3 weeks
Computerised problem solving therapy					

Hoek 2012	RCT Main inclusion criteria: - mild/moderate anxiety or depression (CES-D score <40, HADS-A score <14)	45 young people and young adults Aged 12-21 years Mean age 16.1 years (SD 2.3) 24% male Mean CES-D 25.02 (SD 9.1) Mean HADS 8.84 (SD 3.6)	Computerised problem solving therapy 1 lesson per week for 5 weeks	Waitlist control	Post-treatment: 5 weeks Follow-up: 4 months
Attention bias modification (ABM) and cognitive bias modification of interpretation (CBM-I)					
Bar-Haim 2011	RCT Main inclusion criteria: - high anxiety (top 50% of sample distribution on SCARED)	35 children Age range NR Mean age 10.1 years (SD 0.5) 29% male Mean STAIC 34.2 (SD 8.0)	ABM Dot probe task with face stimuli Four 60 minute sessions over 2 weeks	Neutral training Similar to ABM but not designed to modify attention Four 60 minute sessions over 2 weeks	Post-treatment: 2 weeks

Waters 2013	RCT Main inclusion criteria: - clinically anxious (ADIS-C-IV-C/P ≥4)	37 children Aged 7-17 years Mean age 9.6 (SD 1.3) 32% male Mean SCAS-C 40.5 (SD 17.2)	ABM Dot probe task with face stimuli Two sessions on four days a week for 3 weeks	Attention training control Looking for bird amongst flowers	Post-treatment: 3 weeks
Li 2008	RCT Main inclusion criteria: - social anxiety (27% with highest scores on SIAS)	286 young adults Aged 18-22 years Mean age NR 58% male Mean SIAS 50.0 (SD 9.1)	ABM Dot probe task with face stimuli One session per day for 1 week	Neutral training One session per day for 1 week	Post-treatment: 1 week
Sportel 2013	RCT Main inclusion criteria: - social and/or test anxiety (RCADS: girls 10 and boys 9; TAI: 43 girls,	240 young people Aged 12-15 years Mean age 14.1 years (SD 0.7) 28% male RCADS social phobia subscale 13.3 (SD 4.5)	ABM and CBM-I Word fragment and dot probe tasks Two sessions per week for 10 weeks	No treatment control Therapist-delivered group CBT (3-10 people) One session per week for 10 weeks	Post-treatment: 10 weeks Follow-up: 6 and 12 months

	boys 38)				
Fu 2013	RCT Main inclusion criteria: - anxiety disorder (Chinese version of the screen for Child Anxiety Related Emotional Disorders >23)	28 young people Aged 12-17 years Mean age 14.5 years (SD 1.8) 46% male Mean Chinese version of SCARED 41.5 (SD 8.9)	CBM-I Word fragment completion Single session	Neutral training Single session	Post-treatment: 2 hours
Salemink 2011	RCT Main inclusion criteria: - general population	170 young people Aged 14-16 years Mean age 14.5 (SD 0.5) 46% male	CBM-I Word fragment completion Single 45 minute session	Neutral training Single session	Post-treatment: directly after session
Micco 2013	RCT Main inclusion criteria: - Beck depressi	45 young people and young adults 14-21 years Mean age 18.3 (SD 1.9)	CBM-I Word fragment completion Four 30 minute sessions over 2 weeks	Neutral training Four 30 minute sessions over 2 weeks	Post-treatment: 2 weeks Follow-up: 4 weeks

	on inventory (BDI-II) ≥ 14				
Self-monitoring with mobile phones					
Mobiletype program					
Kauer 2012	RCT Main inclusion criteria: - mild or moderate mental health difficulties (Kessler psychological distress scale <16)	118 young people and young adults 14-24 years Mean age 18 years (SD 3.2) 30% male Mean DASS-21 depression 20.0(SD 11.0)	2-4 weeks	Control: non-therapeutic mobile phone use	Post-treatment: 2-4 weeks Follow-up: 8-10 weeks

Table 18: Study characteristics: interventions for phobia					
Computer-based exposure					
Study	**Study design**	**Population**	**Intervention**	**Control/ alternative interventions**	**Assessment (from baseline)**
Muris 1998	**RCT** **Main inclusion criteria:** - **diagnosis of simple phobia (spiders) as rated by the DISC-R**	**26 children and young people** **Aged 8-17 years** **Mean age 12.6 years (SD 2.5)** **100% female** **Mean SPQ-C 9.9 (SD 1.5)**	**2.5 hour single session**	**In vivo exposure** **EMDR**	**Post-treatment: Immediately after treatment**
Cognitive bias modification of interpretation					
Teachman 2008	**RCT** **Main inclusion criteria:** - **Fear Survey Schedule-III ≥5**	**61 young adults** **Mean age 18.6 (SD 0.9)** **100% female** **Fear of spiders questionnaire 75.6 (SD 22.5)**	**CBM-I word completion taks** **Single session, 40 minutes**	**No treatment** **Neautral training**	**Post-treatment: Immediately after treatment**

Table 19: Study characteristics: interventions for OCD					
Study	**Study design**	**Population**	**Intervention**	**Control/ alternative interventions**	**Assessment (from baseline)**
Video conference Comprehensive behavioural intervention for tics					
Storch 2011	RCT Main inclusion criteria: - DSM-IV diagnosis of OCD	31 children and young people Aged 7-16 years Mean age 11 years (SD 2.6) 61% male Mean total CY-BOCS 23.4 (SD 3.2)	Video conference delivered family-based CBT Fourteen 60-90 minute sessions over 12 weeks	Waitlist control Four weeks	Post-treatment: 12 weeks (4 weeks in control group)
Cognitive bias modification of interpretation					
Clerkin 2011	RCT Main inclusion criteria: - DSM-IV-TR OCD diagnosis	100 young adults Mean age 18.8 (SD 1.0) 45% male Mean OCI-R 36.3 (SD 7.2)	**CBM-I word completion taks** **Single session, 40 minutes**	**No treatment** **Neautral training**	**Post-treatment: Immediately after treatment**

Table 20: Study characteristics: interventions for PTSD					
Study	**Study design**	**Population**	**Intervention**	**Control/ alternative interventions**	**Assessment (from baseline)**
Website for PTSD					
Cox 2010	RCT Main inclusion criteria: hospitalised overnight following an unintentional injury	85 children and young people Aged 7-16 years Mean age 10.9 years (SD 2.2) 69% male Injury severity score 7.0 (SD 6.5)	Cognitive and resiliency theory-based website Participants could access the website as often as they wished Parents sent an information booklet	No treatment control	Post-treatment: 2-4 weeks and six months (six month outcome used for this review)

Table 21: Study characteristics: Interventions for eating disorders					
Study	**Study design**	**Population**	**Intervention**	**Control/ alternative interventions**	**Assessment (from baseline)**
cCBT + online moderated group discussion board					
Student Bodies					
Winzelberg 1998	RCT Main inclusion criteria: None (General student population)	57 adults Age range NR Mean age 19.7 years (SD NR) 100% female Mean EDE-Q shape concerns 3.0 (SD 1.3)	8 weekly sessions Amendments to core intervention: Group discussion component delivered via email, not online bulletin board	Waitlist control	Post-treatment: 8 weeks Follow-up: 5 months
Zabinski 2001	RCT Main inclusion criteria: High body dissatisfaction (≥110 on BSQ) (At risk population)	62 adults Aged 17-24 years Mean age 19.3 years (SD 1.4) 100% female Mean EDE-Q shape concerns 3.8 (SD 1.0)	8 weekly sessions Amendments to core intervention: Tailored content towards women at risk of developing an eating disorder	Waitlist control	Post-treatment: 8 weeks Follow-up: 5 months
Doyle 2008	RCT Main inclusion criteria: Being overweight or at risk of being overweight (≥85th	83 young people Aged 12-18 years Mean age 14.5 years (SD 1.7) 62% female	16 weekly sessions Amendments to core intervention: Tailored content towards individuals at risk of	Waitlist control	Post-treatment: 16 weeks Follow-up: 8 months

	percentile BMI)	Mean EDE-Q shape concerns 2.7 (SD 1.6)	binge-eating disorder		
Jones 2008	RCT Main inclusion criteria: At risk of developing BED (≥85th percentile BMI; binge/overeating behaviours >1 time per week for past 3 months)	105 young people Age range NR Mean age 15.1 years (SD 1) 70% female Mean EDE-Q shape concerns 1.4 (SD 0.9)	16 weekly sessions Amendments to core intervention: Tailored content towards individuals at risk of binge-eating disorder	Waitlist control	Post-treatment: 16 weeks Follow-up: 9 months
Online group CBT					
My body, My life					
Heinicke 2007	RCT Main inclusion criteria: At risk (Self-identification of body image/eating problems – no measure used)	83 young people Aged 12-18 years Mean age 14.4 years (SD 1.48) 100% female Mean BSQ: 59.7 (SD 21.6)	6 weeks Amendments to core intervention: None	Waitlist control	Post-treatment: 6 weeks Follow-up: None
Computer-based Psychoeducation					
Food, Mood and Attitude (FMA					

Franko 2005	RCT Main inclusion criteria: Identification as low/high risk (asymptomatic/ symptomatic on Q-EDD)	240 adults Aged 18-22 years Mean age 18.2 years (SD 0.4) 100% female Mean EDE-Q shape concerns, High risk population: 3.3 (SD 2.7); mixed high/low risk population 3.8 (SD 1.0)	2-3 weeks Amendments to core intervention: NA	Non-therapeutic control (general videos on women's/gender issues)	Post-treatment: 2-3 weeks Follow-up: 6 months

Table 22: Study characteristics: interventions for ADHD					
Study	**Study design**	**Population**	**Intervention**	**Control/ alternative interventions**	**Assessment (from baseline)**
Cognitive training					
Rabiner 2010	RCT Main inclusion criteria: attention difficulties (≥1 SD above sample mean on DSM-IV inattentiveness scale)	77 children Aged 6-7 years Mean age NR 69% male Mean DSM-IV Inattention 71.7 (SD 6.2)	Computerised attention training (Captains Log, produced by Braintrain) Two 75 minute sessions per week for 14 weeks. Groups of 4-6 children with 2-3 research assistants present	Waitlist control Computer assisted instruction (Destination Reading and Math, published by Riverdeep). Training in maths and reading skills Two 75 minute sessions per week for 14 weeks. Groups of 4-6 children with 2-3 research assistants present	Post-treatment: 14 weeks Follow-up: 9 months
Shalev 2007	RCT Main inclusion criteria: DSM-IV ADHD, combined or inattentive sub-type	36 children Aged 6-13 years Mean age 9.2 years (SD NR) 83% male 78% met DSM-IV ADHD criteria, 22% met DSM-IV inattention criteria	Computerised attention training (CPAT-Computerised Progressive Attentional Training program) Two 60 minute sessions per week for 8 weeks All sessions supervised by a research assistant	Computer games and pencil and paper tasks control Two 60 minute sessions per week for 8 weeks	Post-treatment: 8 weeks

Rueda 2012	RCT Main inclusion criteria: attend urban primary school (general population)	37 Children Aged 5 years 54% male	Computerised attention training Exercises for tracking/anticipating, attention focussing/discrimination, conflict resolution and inhibitory control Ten 45 minute sessions over 5 weeks All sessions fully supervised	Cartoon watching control Ten 45 minute sessions over 5 weeks All sessions fully supervised	Post-treatment: 5 weeks
Steiner 2011	RCT Main inclusion criteria: diagnosis of ADHD confirmed by clinician	41 children Aged 6-9 years Mean age NR % male NR Mean CRS-R Cognitive problems/Inattention scale 55 (SD 10)	Computerised attention and working memory training Computer exercises aimed to improve attention, problem solving and working memory Two 45 minute sessions per week for 4 months Research assistants supervised sessions (2 students each)	Waitlist control	Post-treatment: 4 months
Green 2012	RCT Main inclusion criteria: ADHD (CPRS-R T score >65)	30 children Aged 7-14 years Mean age 9.7 years (SD 2.2) 65% male Mean WASI FSIQ 106.2 (SD 13.1)	Working memory training (Cogmed) 40 minutes per day for 25 days Supervised by parents	Non-adaptive working memory training control program 40 minutes per day for 25 days Supervised by parents	Post-treatment: 4 weeks
Johnstone 2010	RCT Main inclusion criteria:	29 children Aged 7-12 years Mean age 10.7 years (SD 1.4)	Working memory and response inhibition training 20 minute sessions on 5 days a week for 5 weeks	Non-adaptive working memory and response inhibition training	Post-treatment: 5 weeks

	DSM-IV diagnosis of ADHD	86% male Mean CBCL attention 68.5 (SD 9)	Completed independently	20 minute sessions on 5 days a week for 5 weeks	
Johnstone 2012 – ADHD sample	RCT Main inclusion criteria: DSM-IV diagnosis of ADHD	60 children Aged 7-13 years Mean age 10.0 (SD 2.2) 90% male Mean CPRT ADHD score 72.7 (SD 6.6)	Working memory and inhibitory control training 25 sessions over 5 weeks Completed independently	Waitlist control	Post-treatment: 5 weeks
Johnstone 2012 – general population sample	RCT Main inclusion criteria: General population	68 children Aged 7-13 years Mean age 10.0 (SD 2.2) 63% male Mean CPRT ADHD score 56.4 (SD 11.8)	Working memory and inhibitory control training 25 sessions over 5 weeks Completed independently	Waitlist control	Post-treatment: 5 weeks
Klingberg 2005	RCT Main inclusion criteria: DSM-IV diagnosed ADHD (Either combined or predominantly inattentive subtype)	53 children Aged 7-12 years Mean age 9.8 years (SD 1.3) 83% male Mean ADHD inattentiveness 18.7 (SD 5.1)	Working memory training (RoboMemo, Cogmed Cognitive Medical systems) Five 40 minute sessions per week for 5 weeks Completed independently	Non-adaptive working memory training Five 40 minute sessions per week for 5 weeks Completed independently	Post-treatment: 5 weeks Follow-up: 4 months

Gray 2012	RCT Main inclusion criteria: ADHD diagnosis learning disability	60 young people Aged 12-17 years Mean age 14.3 (SD 1.2) 87% male Mean DBS score ~6.5	Working memory training (RoboMemo, Cogmed cognitive medical systems) 4-5 45 minute sessions per week for 5 weeks All sessions supervised by Cogmed training coach	Mathematics training program control (Academy of Math www.autoskill.com) 4-5 45 minute sessions per week for 5 weeks All sessions supervised by Cogmed training coach	Post-treatment: 8 weeks
Van der Molen 2010	RCT Main inclusion criteria: learning disability IQ 55-85 Without autism or ADHD diagnosis	95 young people Aged 13-16 years Mean age 15.2 years (SD 0.7) 56% male Raven score 35.4 (SD 6.3)	Working memory training (Odd Yellow) Six minute sessions 3 times a week for 5 weeks Teachers present in sessions	Control training program Six minute sessions 3 times a week for 5 weeks Teachers present in sessions	Post-treatment: 5 weeks Follow-up: 10 weeks

Table 23: Study characteristics: interventions for Conduct disorder					
Study	**Study design**	**Population**	**Intervention**	**Control/ alternative interventions**	**Assessment (from baseline)**
Parent training					
Sanders 2012	RCT Main inclusion criteria: early-onset disruptive behavioural problems (elevated levels on Eyberg child behaviour inventory)	116 parents Children aged 2-9 years Mean age 4.7 years SD 1.7 67% male Mean ECBI Problem subscale 22.0 (SD 5.1)	Triple P – Positive parenting program, adapted for use on the internet (Triple P Online) Eight modules completed over 3 months Email prompts to increase adherence	No treatment	Post-treatment: 3 months Follow-up: 6 months
Enebrink	RCT Main inclusion criteria: conduct problems (met criteria for clinically relevant problems Eyberg child behaviour inventory)	104 parents of children Children aged 3-12 years Mean age 6.8 years SD 2.3 58% male Mean ECBI Problem subscale 18.5 (SD 5.4)	Parenting program Seven sessions over 10 weeks	Waitlist control	Post-treatment: 10 weeks

Table 24: Study characteristics: interventions for Substance misuse					
Study	**Study design**	**Population**	**Intervention**	**Control/ alternative interventions**	**Assessment (from baseline)**
Computer programs					
Mother and daughter computer programs					
Schinke 2009a	RCT Main inclusion criteria: general Population female only	916 mothers and daughters Daughters aged 11-13 years Mean age 12.6 (SD 1) 100% female	Computerised substance misuse intervention One 45 minute session per week for 9 weeks Annual booster session Completed by Individual and Mother	No treatment	Follow-up: 1 and 2 years
Schinke 2009b	RCT Main inclusion criteria: general population female	591 Mothers and daughters Daughters aged 11-13 years Mean age 12.7 (SD 1.1) 100% female	Computerised substance misuse program One 45 minute session per week for 9 weeks Annual booster session Completed by Individual and Mother	No treatment	Post-treatment: 9 weeks Follow-up: 1 year

Fang 2010 (Fang 2012 2 year follow-up)	RCT Main inclusion criteria: general population Asian female	108 Mothers and daughters Daughters aged 10-14 years Mean age 13.1 SD 1 100% female	Computerised substance misuse program One 45 minute session per week for 9 weeks Annual booster session Completed by Individual and Mother	No treatment	Follow-up: 1 and 2 years
Individual computer programs					
Schwinn 2010a	RCT Main inclusion criteria: general Population female	236 young people Aged 12-15 years Mean age 14 SD 0.57 100% female	Computerised substance misuse program (Real teen) Two 25 minute sessions per week for 6 weeks Assigned a pen pal Completed individually	No treatment	Follow-up 6 months
Schinke 2004a	RCT Main inclusion criteria: economically disadvantaged (from households below federal poverty line)	189 young people Age range 7-15 years Mean age 9.6 (SD 1.2)	Computerised substance misuse program 20 minute sessions over two weeks Completed individually	Session content delivered by community staff No treatment	Post-treatment: 2 weeks
Schinke 2004b	RCT	514 young people	Computerised alcohol abuse prevention program	No treatment	Post-treatment: 10 weeks Follow-up: 1, 2,

(Schwinn 2010b and Schinke 2010 follow-ups)	Main inclusion criteria: urban youth	Age range 10-12 years Mean age 11.5 (SD 0.53) 49% male	Ten 45 minute sessions Annual booster sessions Completed individually		3, 6 and 7 years
Koning 2009 (Koning 2011 follow-up)	RCT Main inclusion criteria: High school students	3490 young people Age range NR Mean age 12.7 (SD 0.5) 54% male	Computerised alcohol misuse program Completed individually Trained teachers facilitated 4 sessions One booster session	Standard curriculum	Follow-up: 10, 22 and 34 months
Fritz 2008	RCT Main inclusion criteria: High school students current smokers	121 young people Aged 14-19 years Mean age 17.7 (SD NR) 55 % male	Computerised adolescent smoking cessation program (CASCP) Four 30 minute sessions Completed individually	Standard curriculum	Post-treatment: 4-6 weeks
Buller 2008a	RCT Main inclusion criteria: High school students	2077 young people Aged 10-16 years Mean age NR	Computerised smoking prevention program (Consider this) Six modules delivered by teachers	Standard curriculum	Follow-up: 1 year

		48% male	Completed individually		
Normative feedback programs					
Walton 2010 (Cunningham 2012 12 month follow-up)	RCT Main inclusion criteria: attending trauma centre past year alcohol use and aggression	726 young people Age range 14-18 years Mean age 16.8 SD 1.3 44% male	Screening and Brief Intervention (interactive program) (SafERteens) Survey and personalised feedback with motivational interviewing, normative resetting, alcohol refusal and conflict resolution skills One 35 minute session Completed independently	Screening and Brief Intervention (interactive program) (SafERteens) As intervention but completed in the presence of a therapist Control: Brochure	Follow up: 3 and 6 months
Evers 2012	RCT Main inclusion criteria: Middle school student current or past substance abuse user	1,590 young people Age range 10-14 years Mean age NR 53% male	Computer program with personalized feedback (Your decision counts) Three 30 minute sessions one month apart Completed independently	No treatment	Post-treatment: 3 months Follow-up: 14 months

Table 25: Study characteristics: interventions for Autism					
Study	**Study design**	**Population**	**Intervention**	**Control/ alternative interventions**	**Assessment (from baseline)**
Computer-based social skills training					
FaceSay					
Hopkins 2011	RCT Main inclusion criteria: Diagnosis of ASD (high and low functioning) (defined by CARS)	49 children Aged 6-15 years Mean age 10.17 years (SD NR) 90% male Mean CARS 37.1 (SD 5.2)	12 10-25 minute sessions delivered bi-weekly across a 6 week period	Non-therapeutic computer use (computer-based drawing program with assistance from an investigator) control	Post-treatment: 6-8 weeks

Table 26: Study characteristics: interventions for Tourette syndrome					
Study	**Study design**	**Population**	**Intervention**	**Control/ alternative interventions**	**Assessment (from baseline)**
Video conference Comprehensive behavioural intervention for tics					
Himle 2012	RCT Main inclusion criteria: DSM-IV diagnosis of Tourette syndrome or Chronic tic disorder	18 children Aged 8-17 years Mean age 11.6 years (SD 2.7) 94% male Mean YGTSS total tic score 23.7 (SD 6.0)	Video conference delivered Comprehensive behavioural intervention for tics Eight sessions over 10 weeks	Face-to-face delivered Comprehensive behavioural intervention for tics Eight sessions over 10 weeks	Post-treatment: 10 weeks Follow-up: 4 months

Table 27: Study characteristics: interventions for psychosis					
Study	**Study design**	**Population**	**Intervention**	**Control/ alternative interventions**	**Assessment (from baseline)**
Computerised cognitive remediation therapy for psychosis					
Urben 2012	RCT Main inclusion criteria: DSM-IV diagnosis of psychotic disorder or high risk on the Structured Interview for Prodromal symptoms	22 young people Age range NR Mean age 15.5 years (SD 1.3) 64% male 73% psychotic, 27% at risk of psychosis	Based on Captain's Log software. Attention, concentration and memory training Two 45 minute sessions per week for 8 weeks Psychologist present during training sessions	Computer games Two 45 minute sessions per week for 8 weeks Psychologist present during training sessions	Follow-up: 6 months

APPENDIX 11: FOREST PLOTS

4 ANXIETY AND DEPRESSION

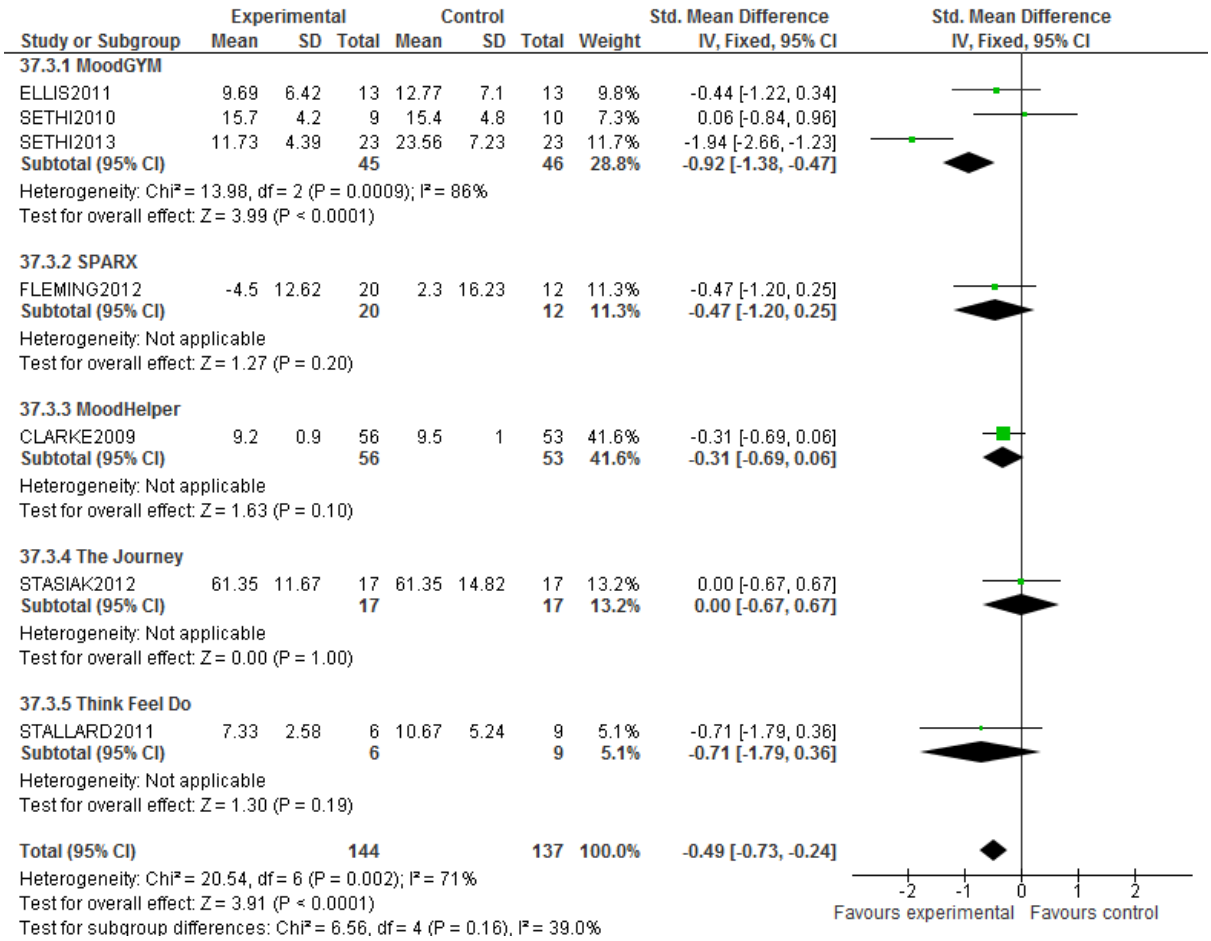


Figure 4.1 Self-rated depression in young people and young adults for depression and anxiety and depression cCBT programs compared with control

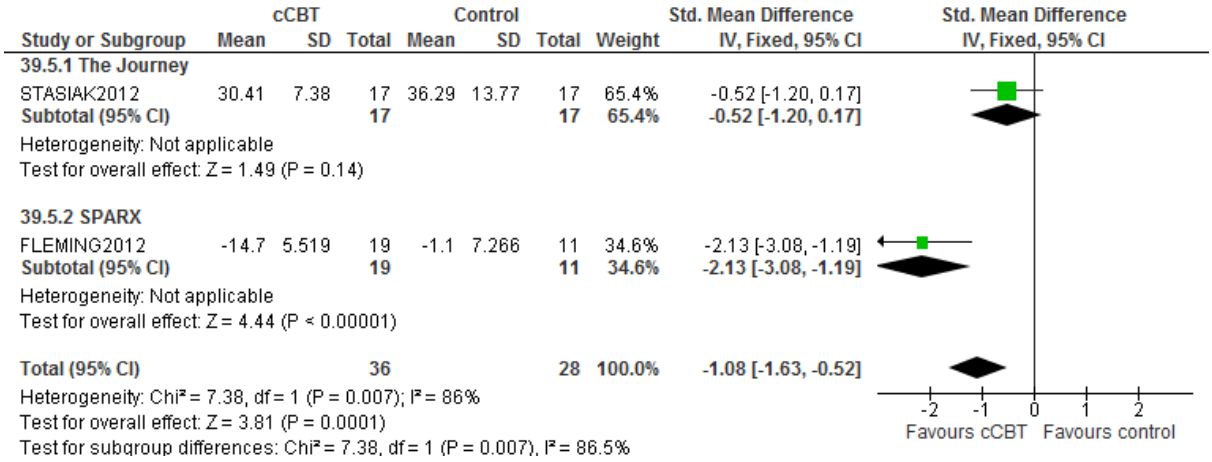


Figure 4.2 Clinician-rated depression in young people for depression cCBT programs compared with control

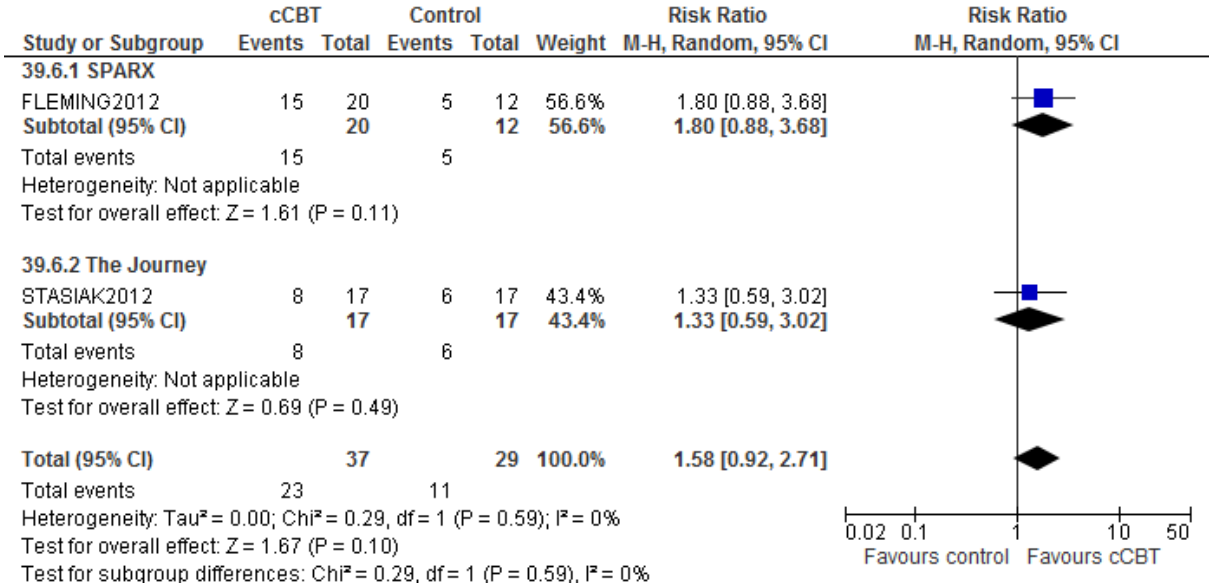


Figure 4.3 Rates of remission in young people for depression cCBT programs compared with control

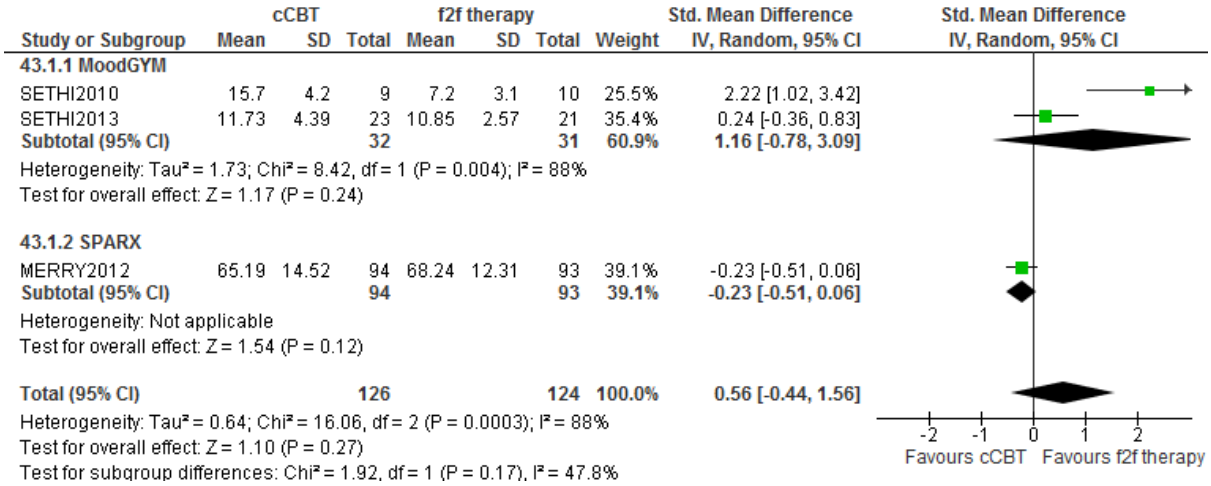


Figure 4.4 Self-rated depression in young people and young adults for depression and anxiety and depression cCBT programs compared with face-to-face CBT or TAU (mainly face to face counselling)

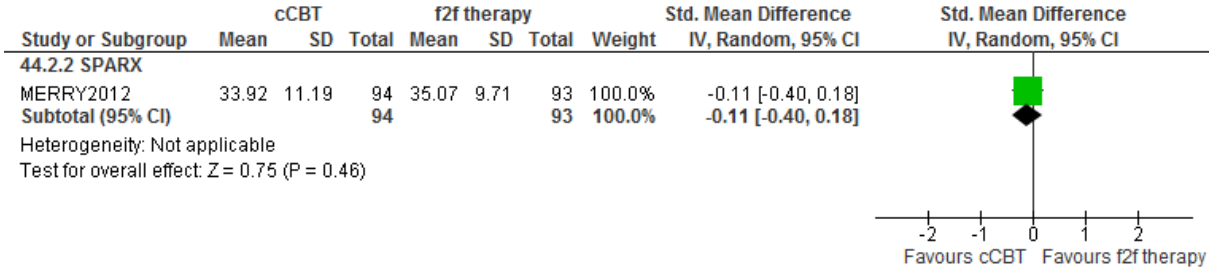


Figure 4.5 Clinician-rated depression in young people for depression cCBT program compared with TAU (mainly face to face counselling)

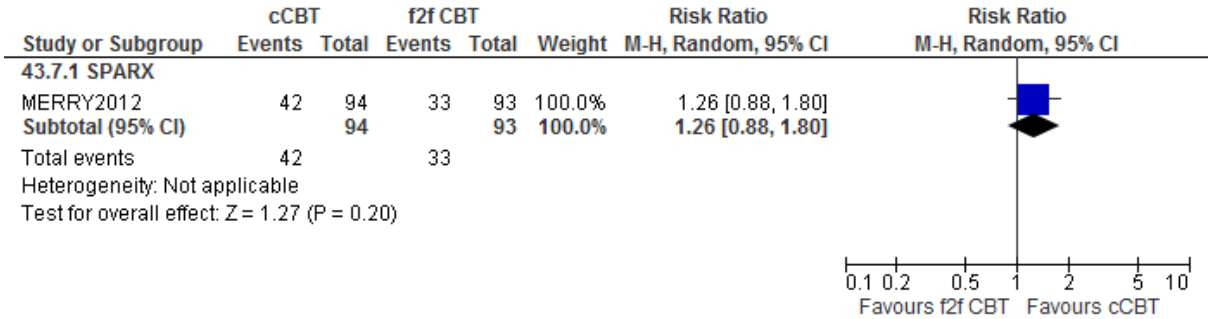


Figure 4.6 Rates of remission in young people for depression cCBT program compared with TAU (mainly face to face counselling)

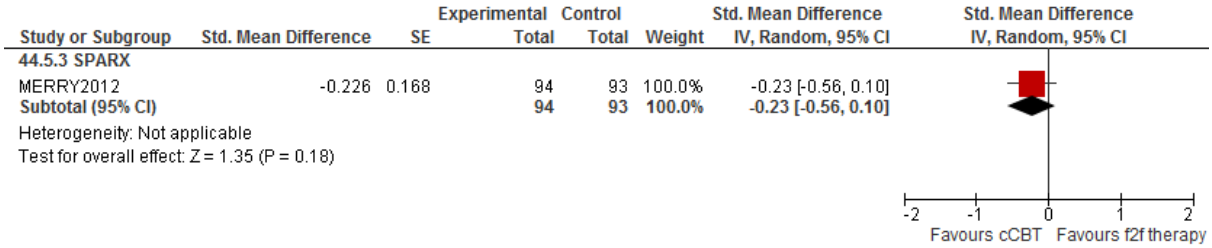


Figure 4.7 Global functioning in young people for depression cCBT program compared with TAU (mainly face to face counselling)

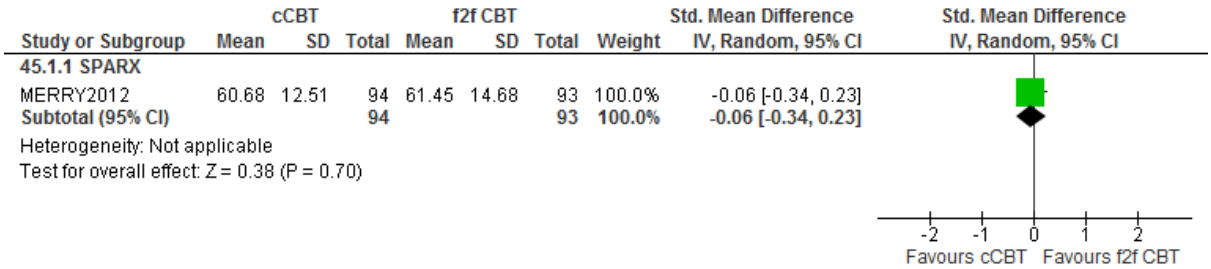


Figure 4.8 Self-rated depression in young people for depression cCBT program compared with TAU (mainly face to face counselling) at 3 month follow-up

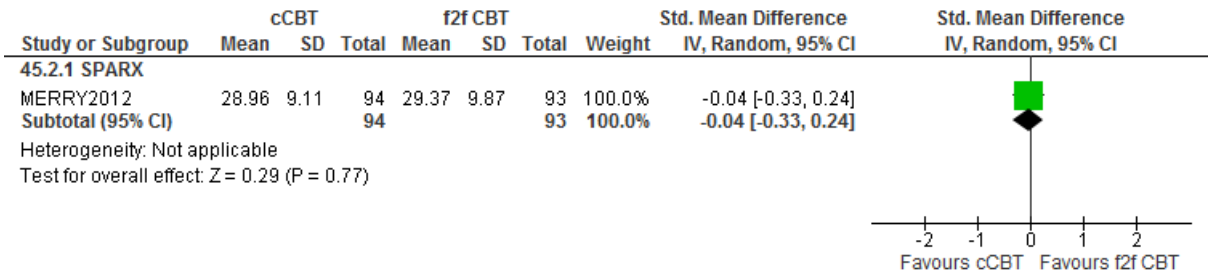


Figure 4.9 Clinician-rated depression in young people for depression cCBT program compared with TAU (mainly face to face counselling) at 3 month follow-up

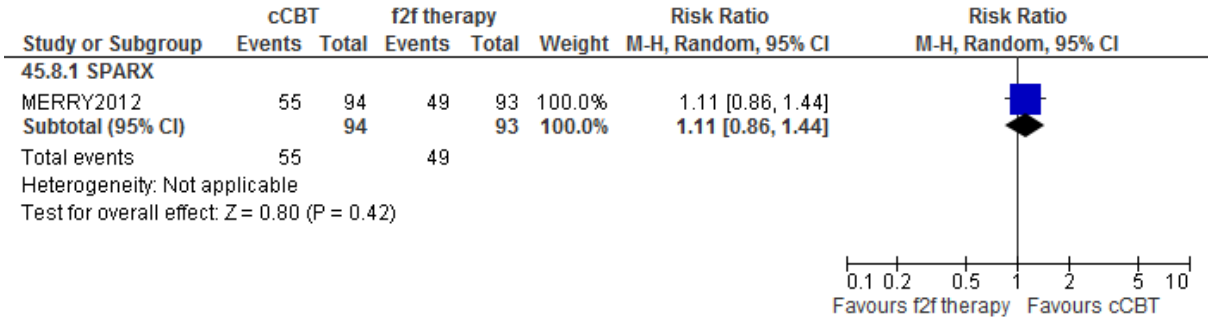


Figure 4.10 Remission from depression in young people for cCBT program compared with TAU (mainly face to face counselling) at 3 month follow-up

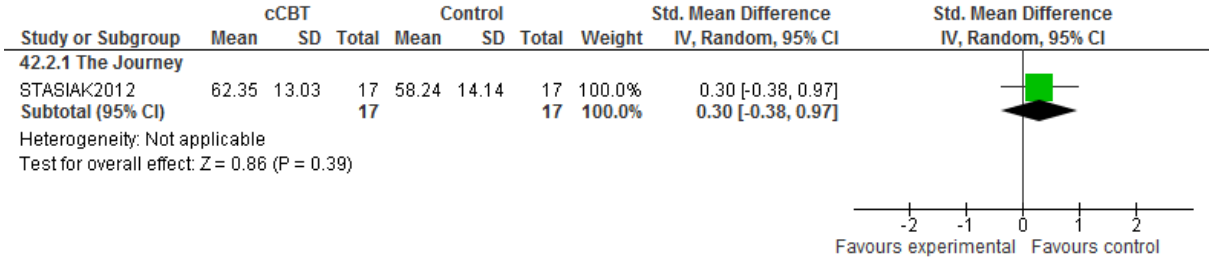


Figure 4.11 Self-rated depression in young people for depression cCBT program compared with control at 3 month follow-up

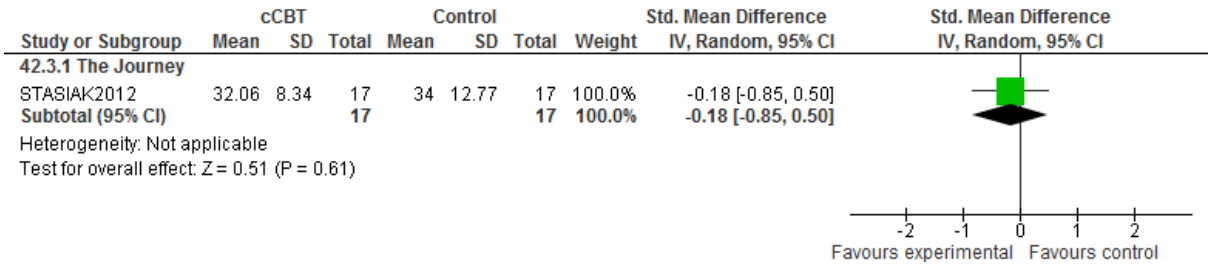


Figure 4.12 Clinician-rated depression in young people for depression cCBT program compared with control at 3 month follow-up

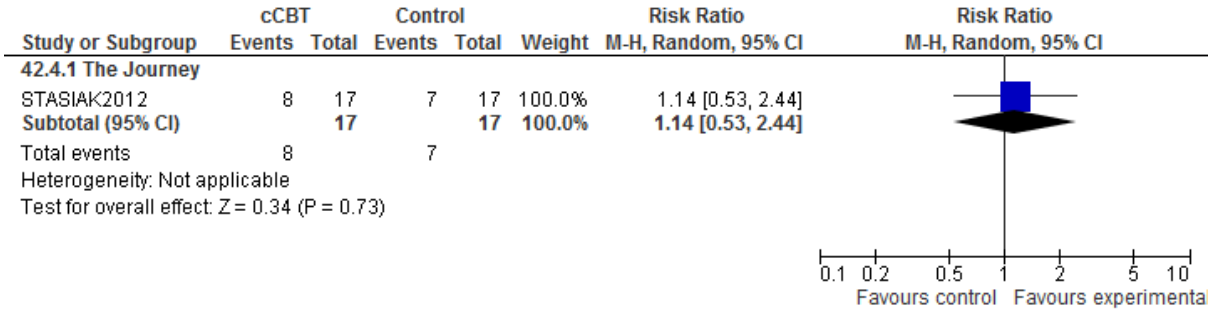


Figure 4.13 Remission rates in young people for depression cCBT program compared with control at 3 month follow-up

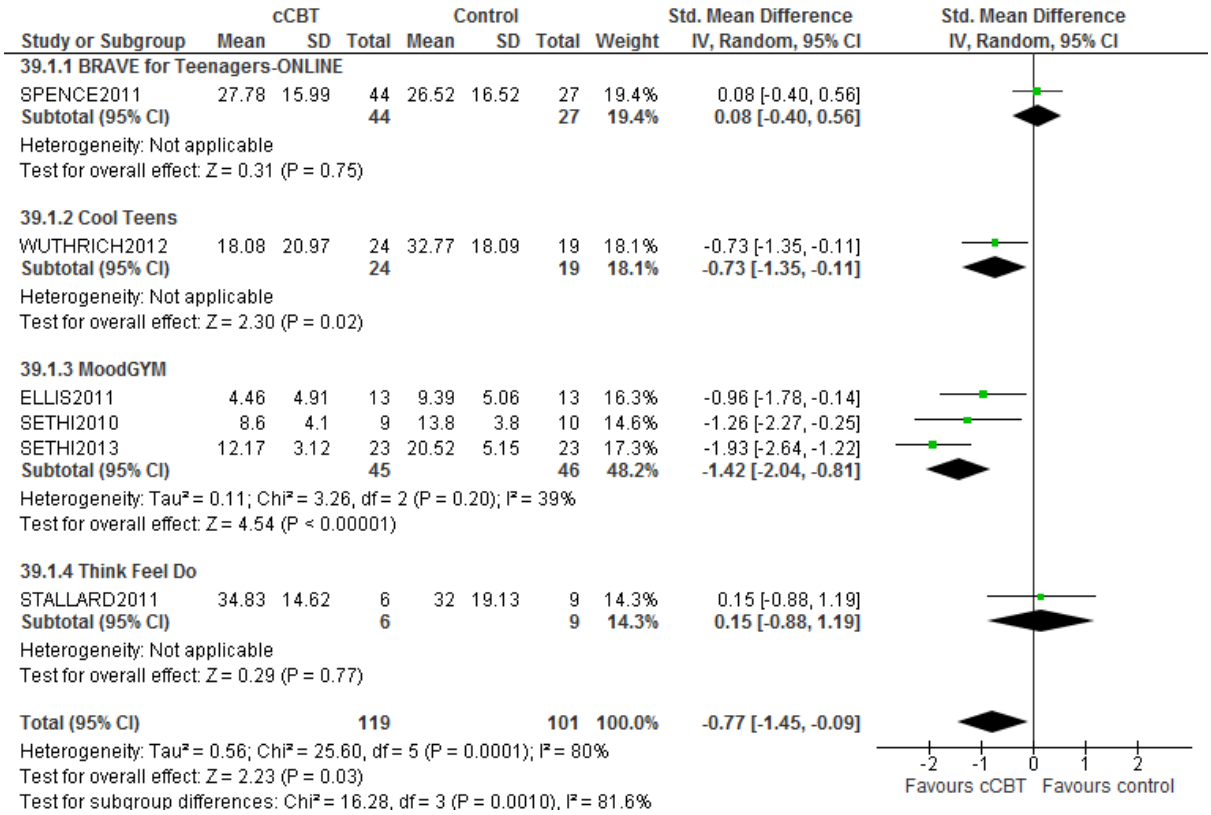


Figure 4.14 Self-rated anxiety in young people and young adults for anxiety or anxiety and depression cCBT programs compared with control

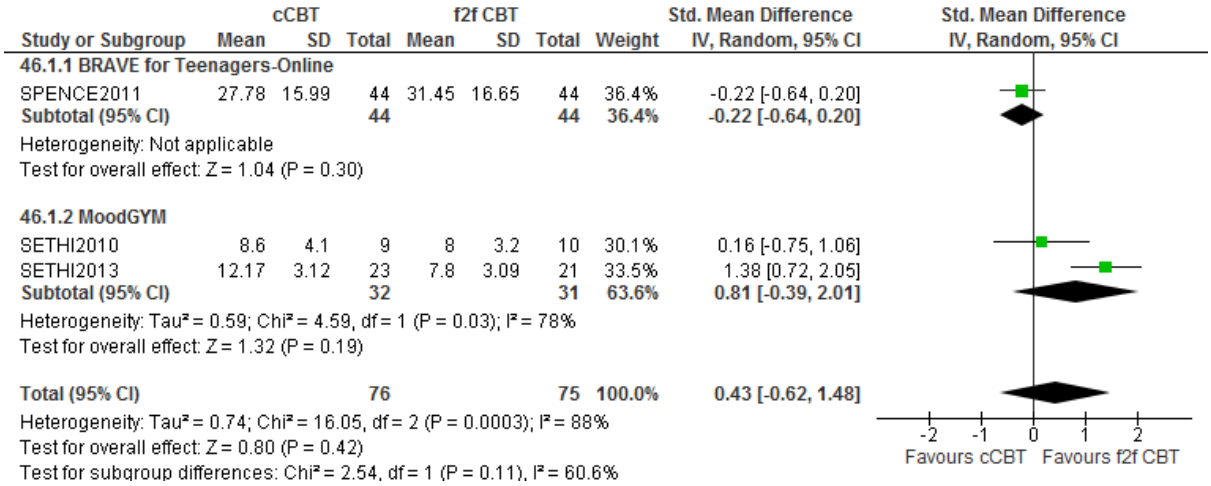


Figure 4.15 Self-rated anxiety in young people and young adults for anxiety or anxiety and depression cCBT programs compared with face-to-face CBT

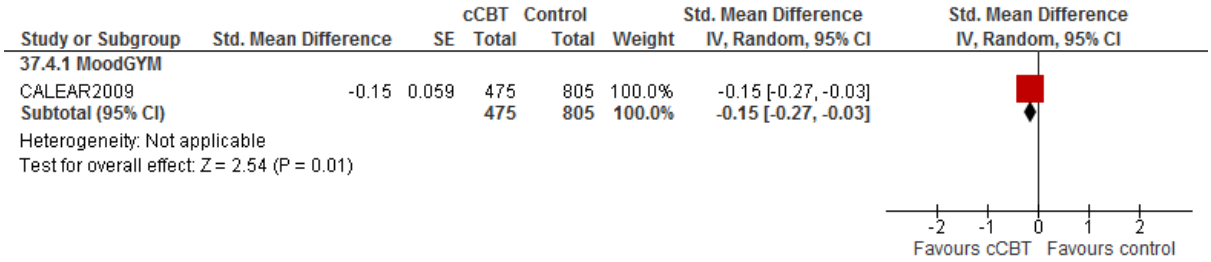


Figure 4.16 Self-rated depression in young people for anxiety and depression cCBT program compared with control in a general school population

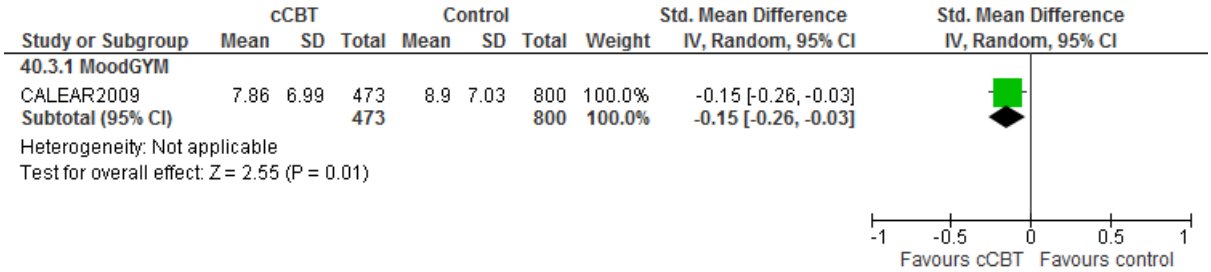


Figure 4.17 Self-rated anxiety in young people for anxiety and depression cCBT program compared with control in a general school population

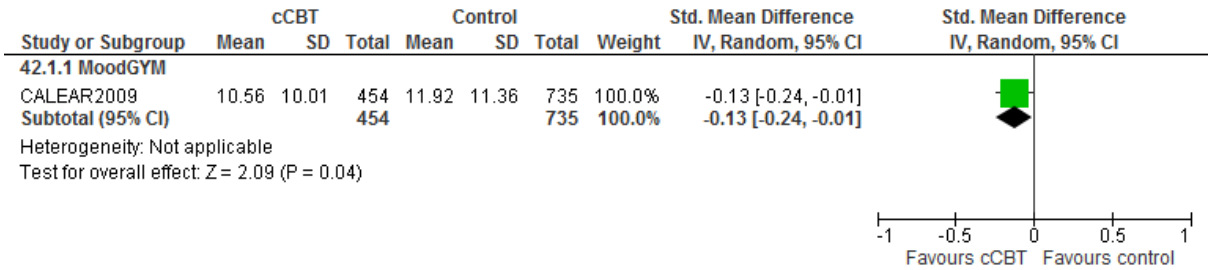


Figure 4.18 Self-rated depression in young people for anxiety and depression cCBT program compared with control in a general school population at 6 month follow-up

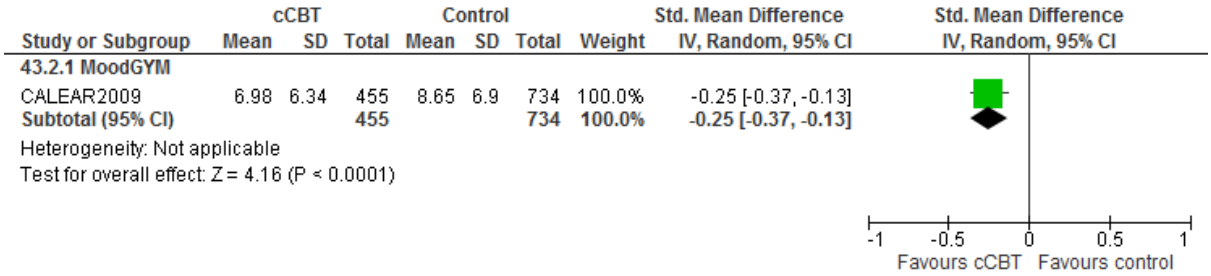


Figure 4.19 Self-rated anxiety in young people for anxiety and depression cCBT program compared with control in a general school population at follow-up

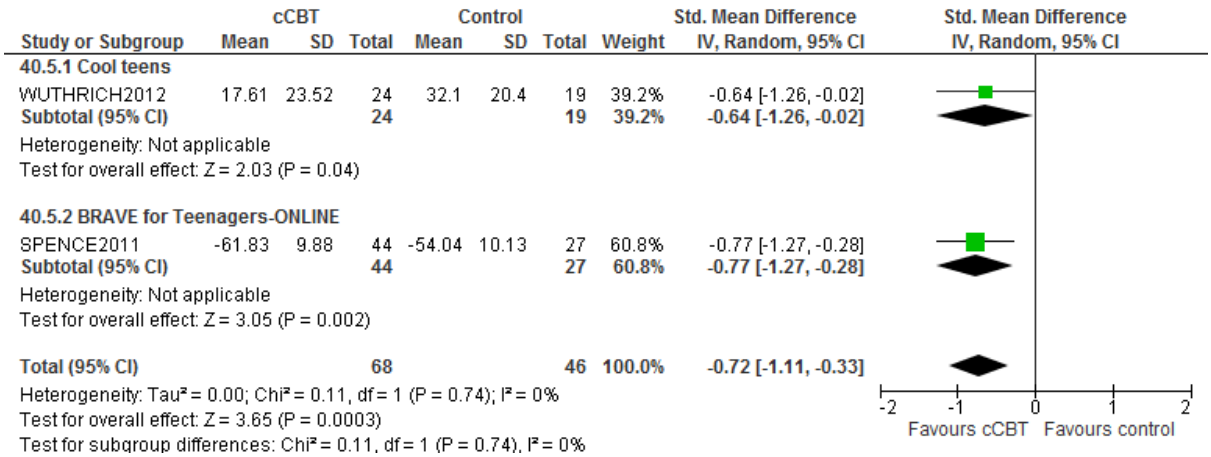


Figure 4.20 Global functioning in young people for anxiety cCBT programs compared with control

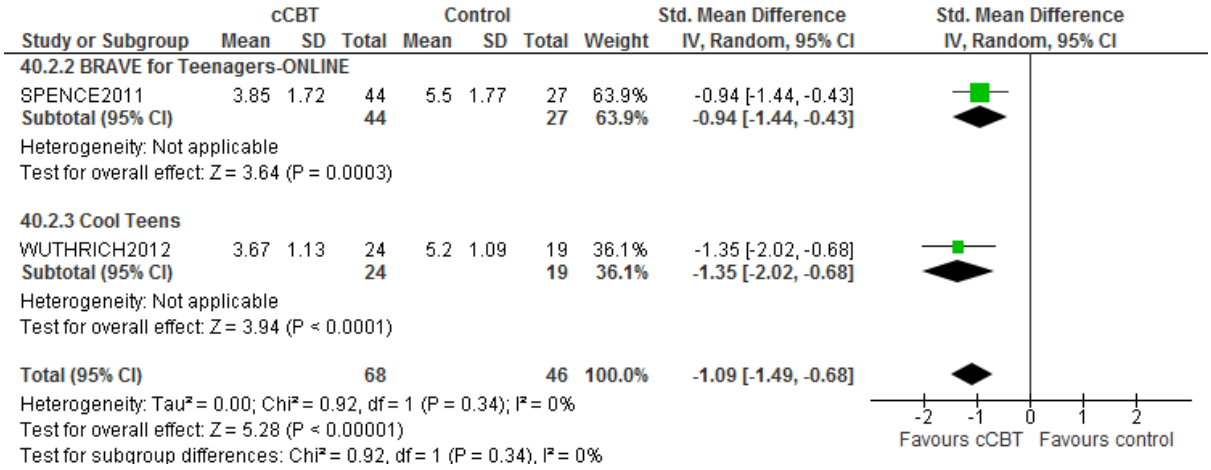


Figure 4.21 Clinician-rated anxiety in young people for anxiety cCBT programs compared with control

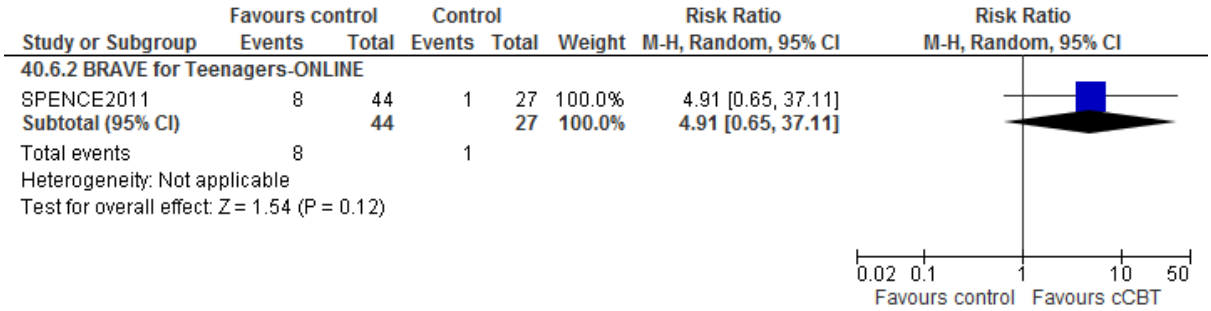


Figure 4.22 Clinician-rated remission in young people for anxiety cCBT program compared with control

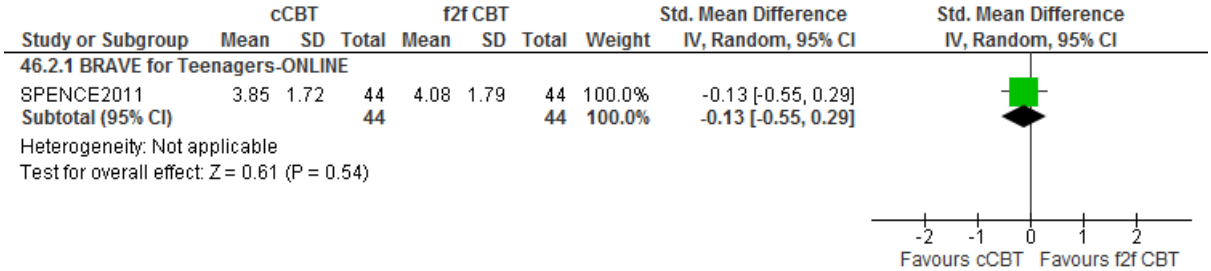


Figure 4.23 Clinician-rated anxiety in young people for anxiety cCBT program compared with face-to-face CBT

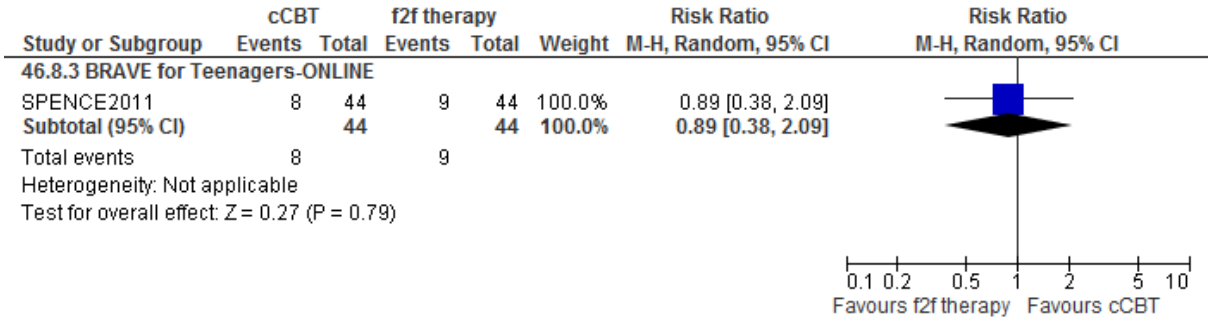


Figure 4.24 Clinician-rated remission in young people for anxiety cCBT program compared with face-to-face CBT

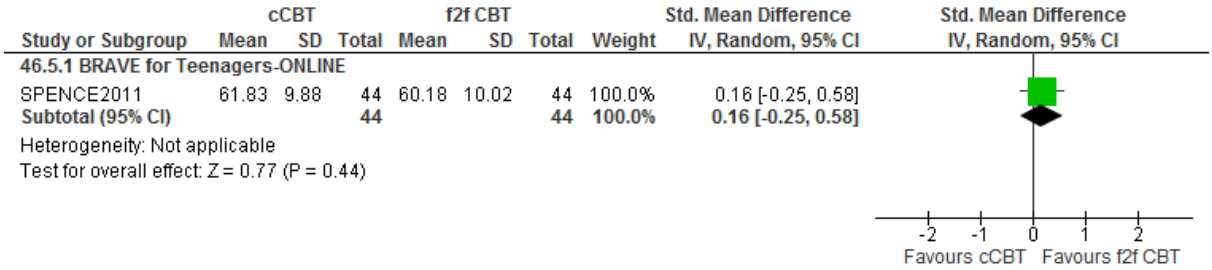


Figure 4.25 Clinician-rated global functioning in young people for anxiety cCBT program compared with face-to-face CBT

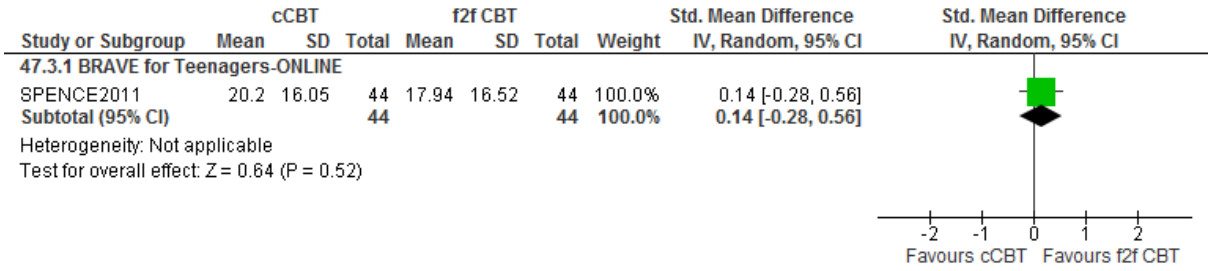


Figure 4.26 Self-rated anxiety in young people for anxiety cCBT program compared with face-to-face CBT at 12 month follow-up

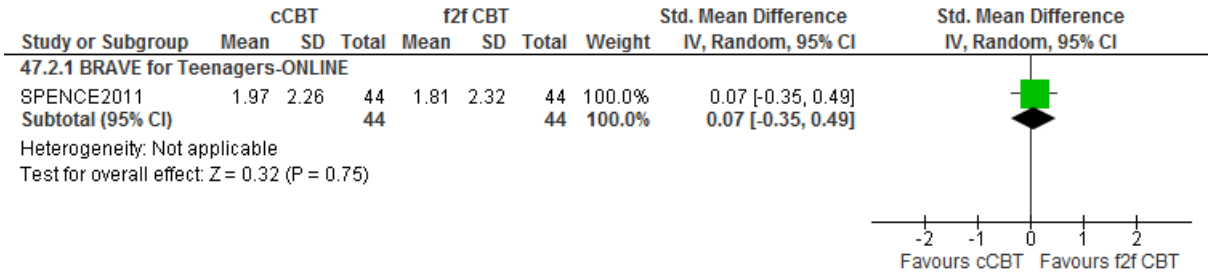


Figure 4.27 Clinician-rated anxiety in young people for anxiety cCBT program compared with face-to-face CBT at 12 month follow-up

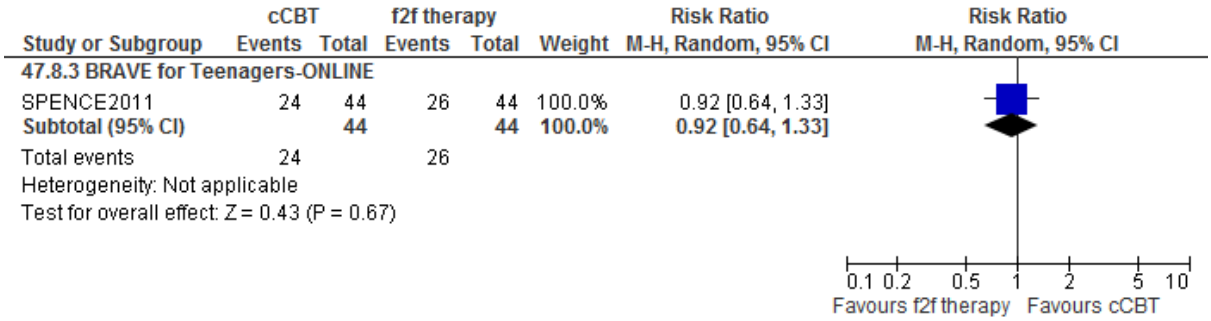


Figure 4.28 Clinician-rated remission in young people for anxiety cCBT program compared with face-to-face CBT at 12 month follow-up

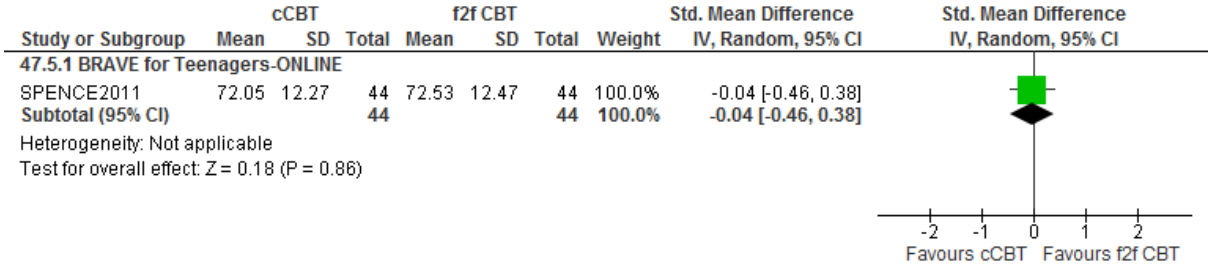


Figure 4.29 Clinician-rated global functioning in young people for anxiety cCBT program compared with face-to-face CBT at 12 month follow-up

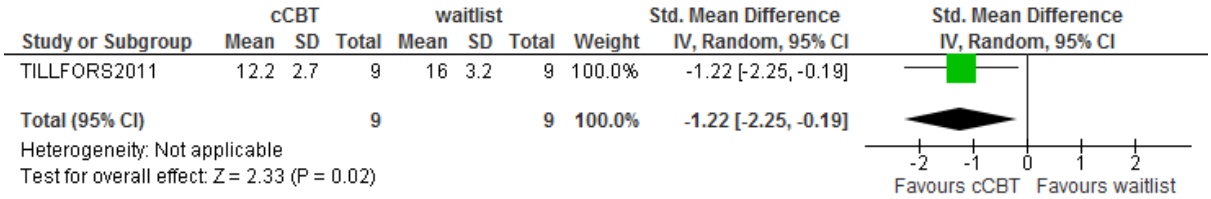


Figure 4.30 Self-rated social anxiety in young adults for social anxiety cCBT program compared with control

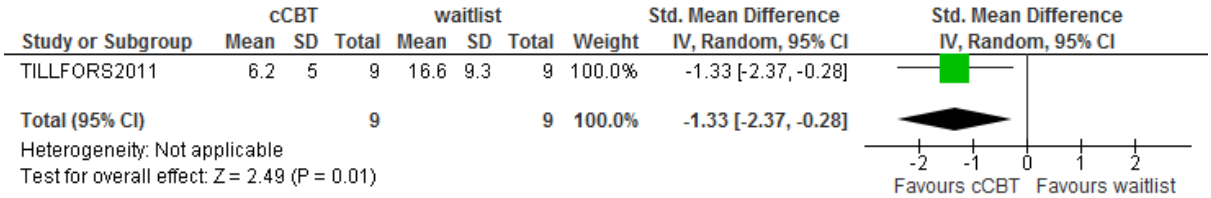


Figure 4.31 Self-rated depression in young adults for social anxiety cCBT program compared with control

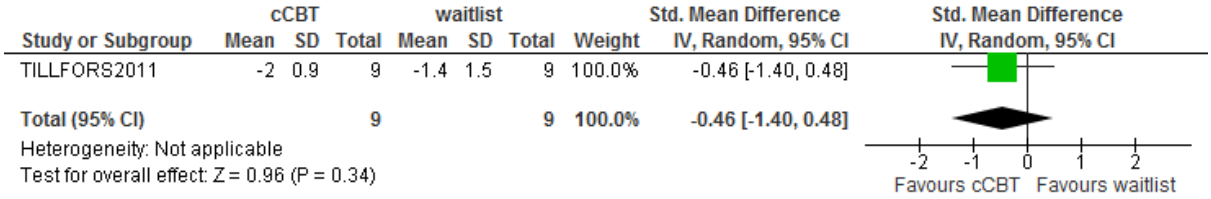


Figure 4.32 Self-rated quality of life in young adults for social anxiety cCBT program compared with control

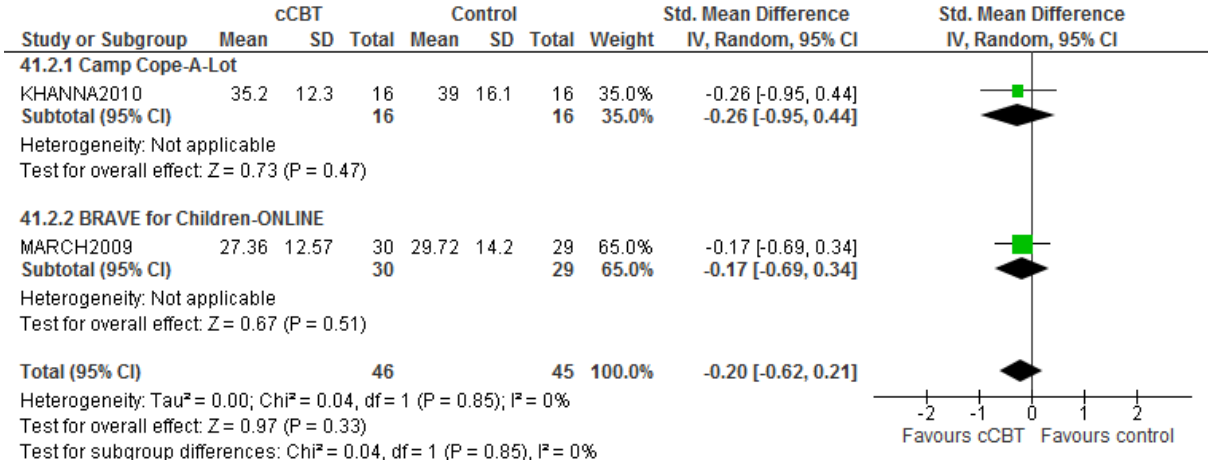


Figure 4.33 Self-rated anxiety for child anxiety cCBT programs compared with control

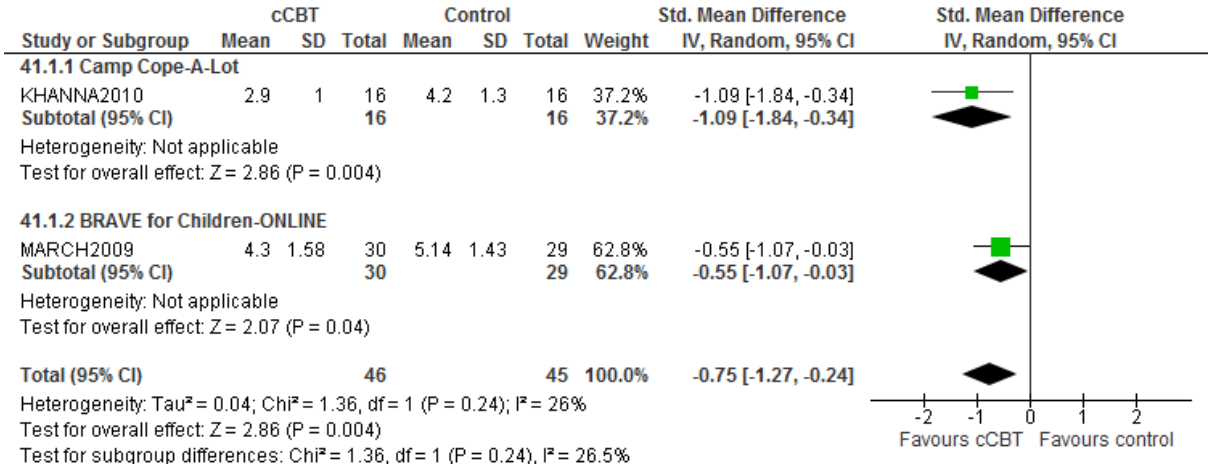


Figure 4.34 Clinician-rated anxiety for child anxiety cCBT programs compared with control

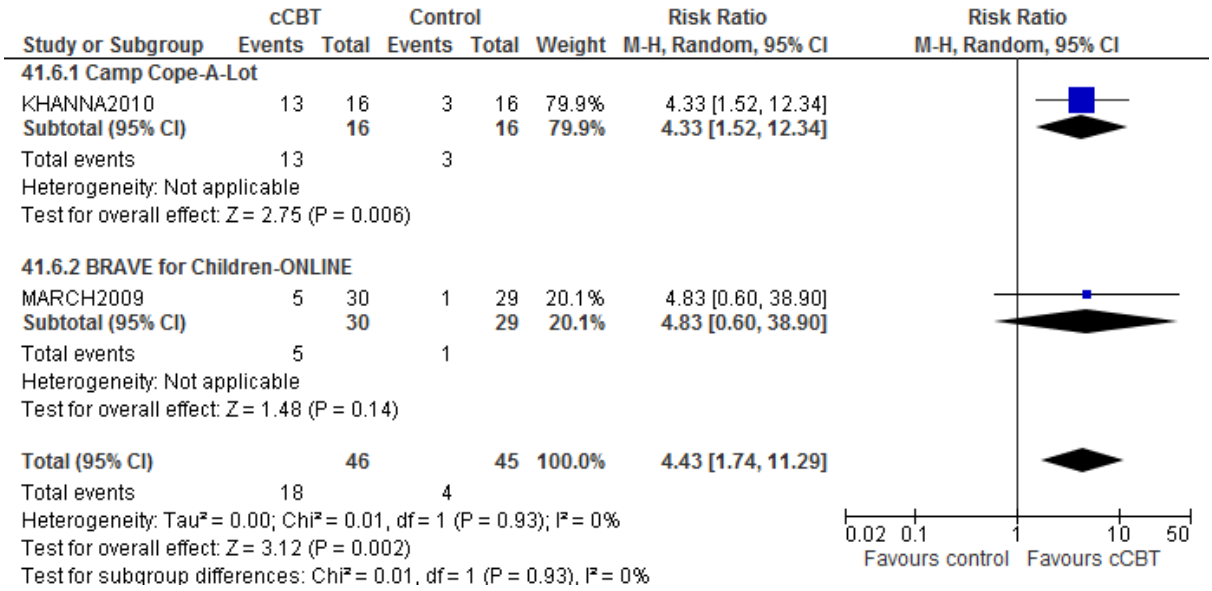


Figure 4.35 Rates of remission for child anxiety cCBT programs compared with control

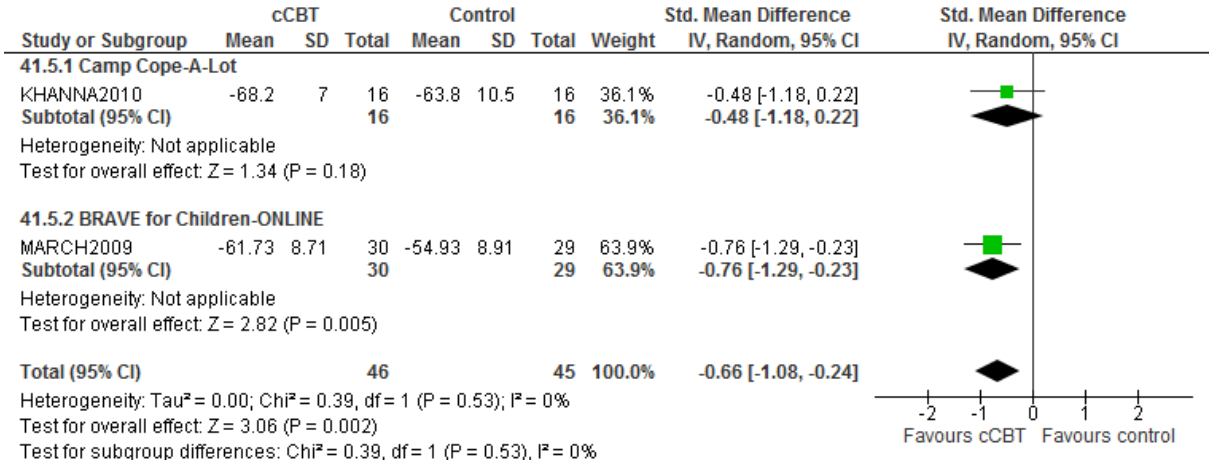


Figure 4.36 Global functioning for child anxiety cCBT programs compared with control

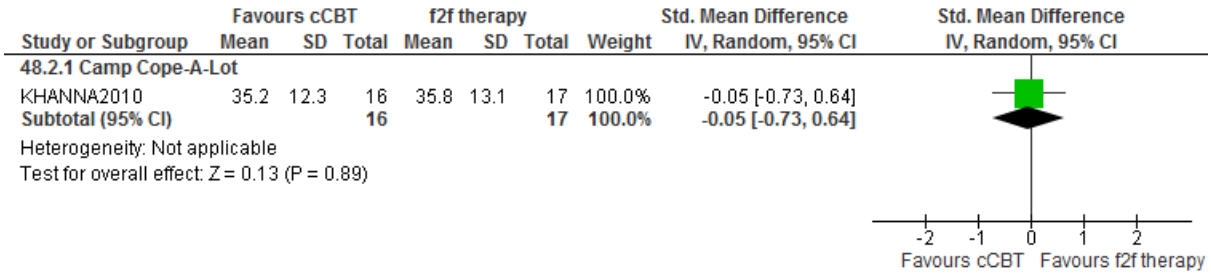


Figure 4.37 Self-rated anxiety for child anxiety cCBT program compared with face-to-face CBT

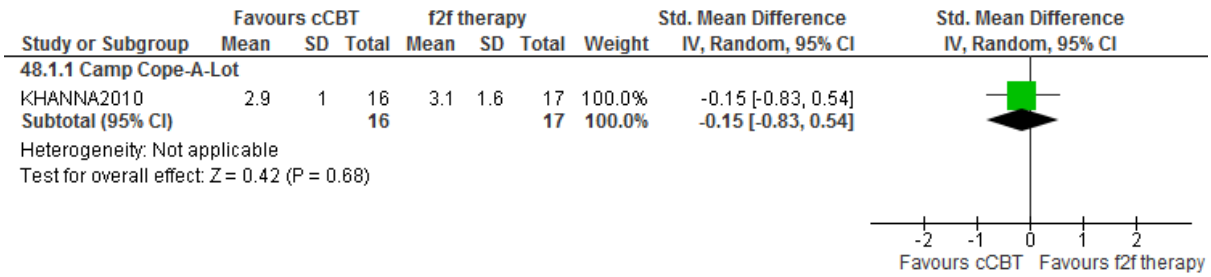


Figure 4.38 Clinician-rated anxiety for child anxiety cCBT program compared with face-to-face CBT

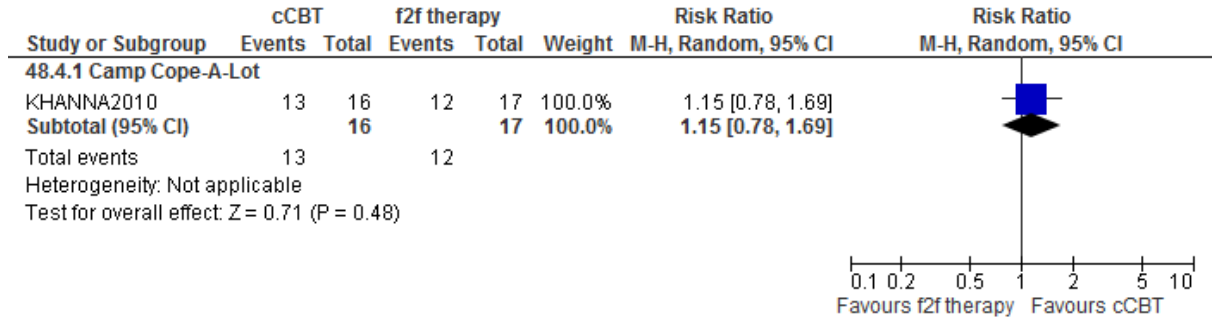


Figure 4.39 Rates of remission for child anxiety cCBT program compared with face-to-face CBT

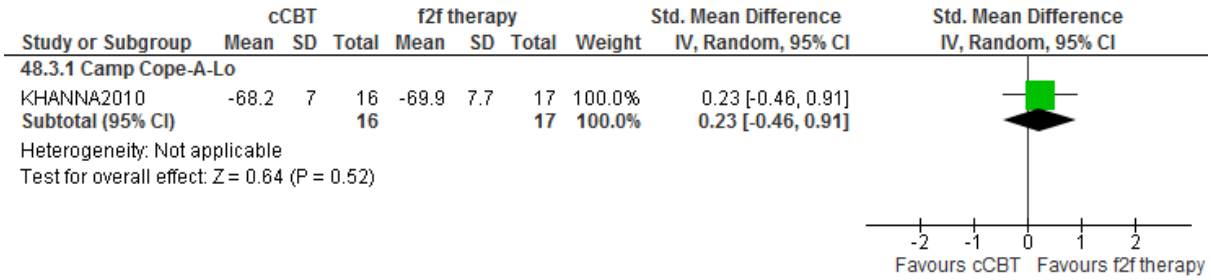


Figure 4.40 Global functioning for child anxiety cCBT program compared with face-to-face CBT

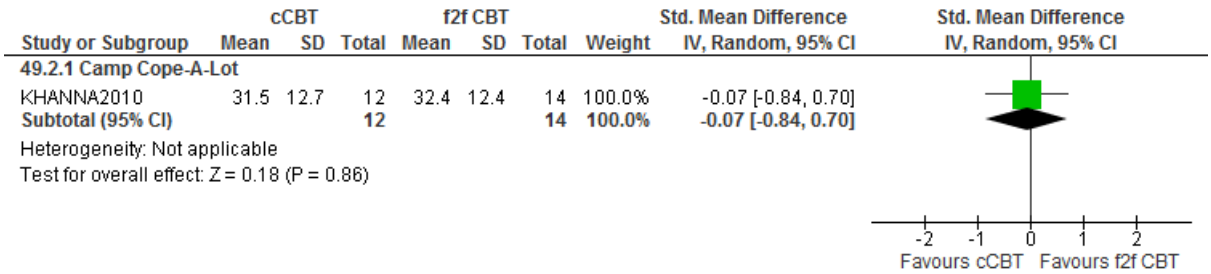


Figure 4.41 Self-rated anxiety for child anxiety cCBT program compared with face-to-face CBT at 6 month follow-up

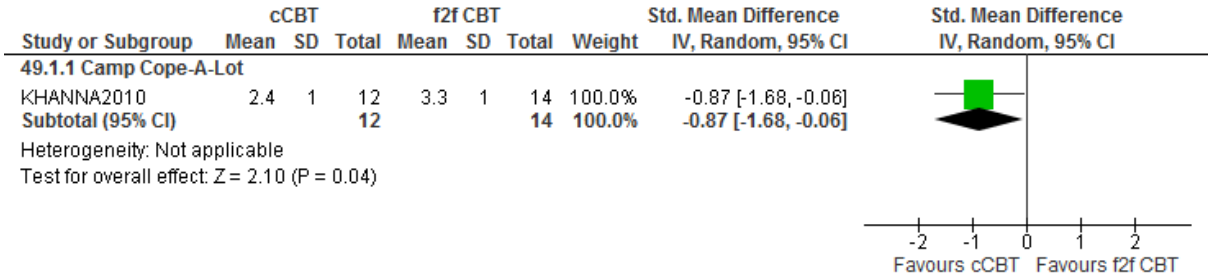


Figure 4.42 Clinician-rated anxiety for child anxiety cCBT program compared with face-to-face CBT at 6 month follow-up

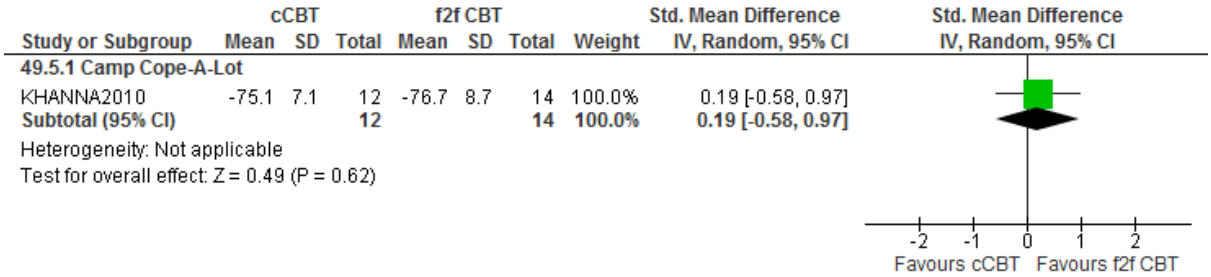


Figure 4.43 Clinician-rated global functioning for child anxiety cCBT program compared with face-to-face CBT at 6 month follow-up

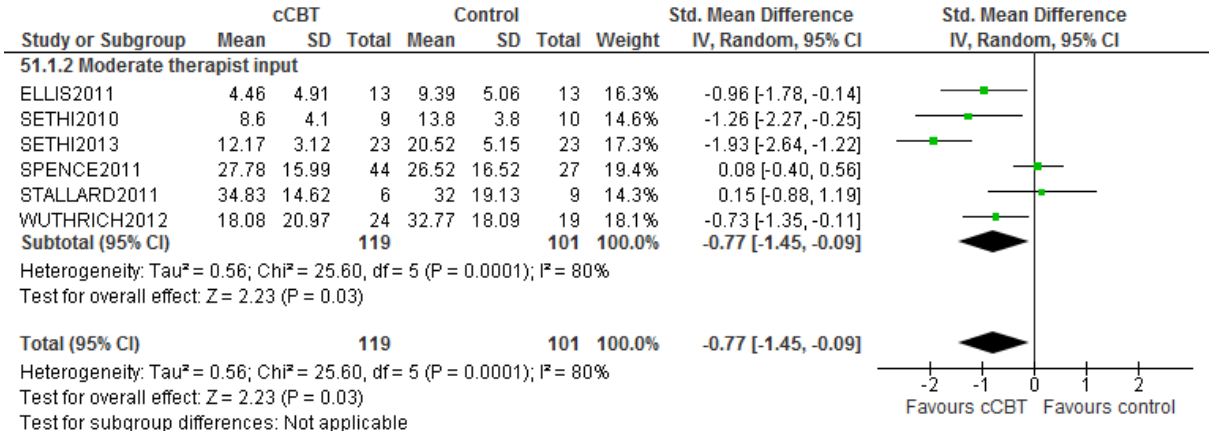


Figure 4.44 Self-rated anxiety in young people and young adults in studies of anxiety and anxiety and depression cCBT programs compared with control sub-grouped by degree of therapist input

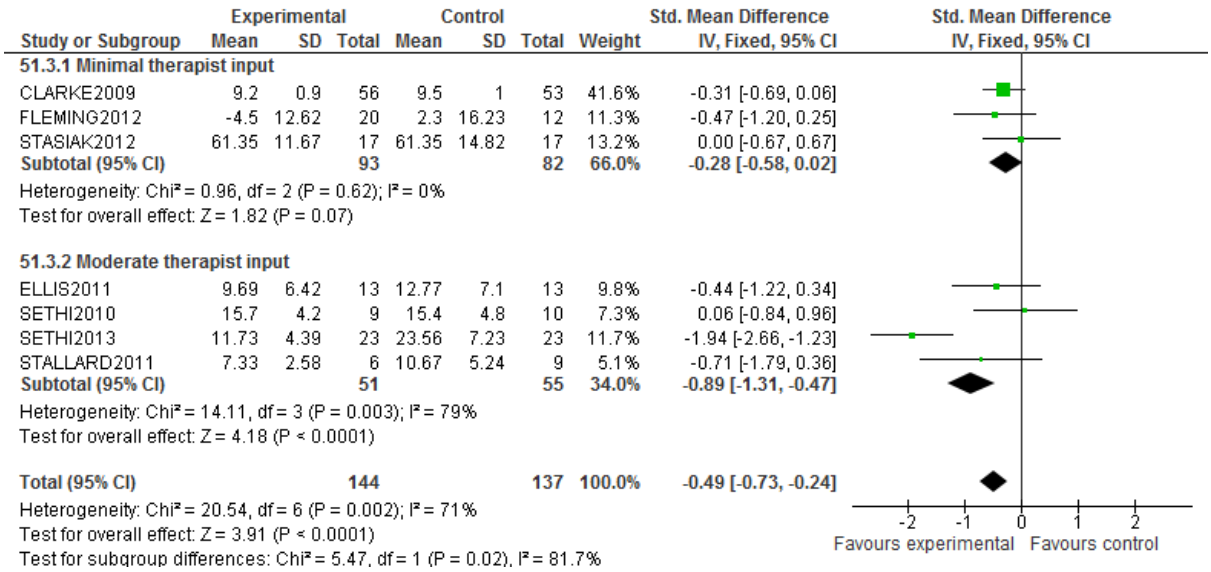


Figure 4.45 Self-rated depression in young people and young adults in studies of depression and anxiety and depression cCBT programs compared with control sub-grouped by degree of therapist input

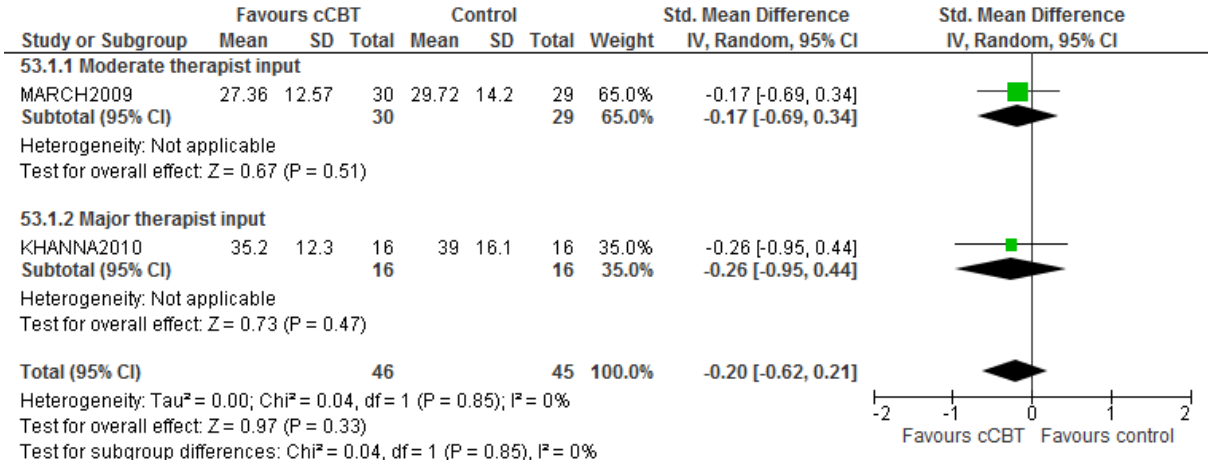


Figure 4.46 Self-rated anxiety in studies of child anxiety cCBT programs compared with control sub-grouped by degree of therapist input

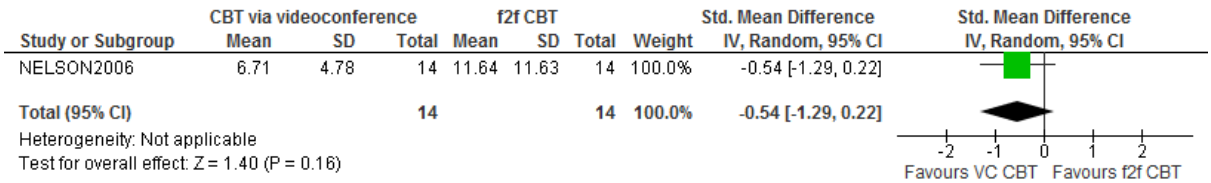


Figure 4.47 Self-rated depression in children and young people for video conference CBT compared with face-to-face CBT for depression

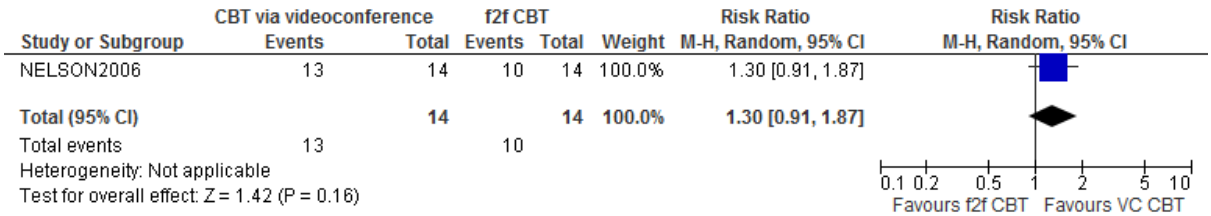


Figure 4.48 Clinician-rated remission in children and young people for video conference CBT compared with face-to-face CBT for depression

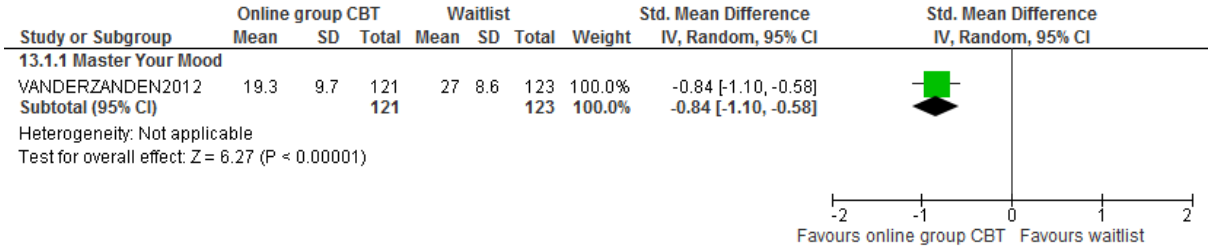


Figure 4.49 Self-rated depression in young people and young adults for online group CBT for depression compared with control

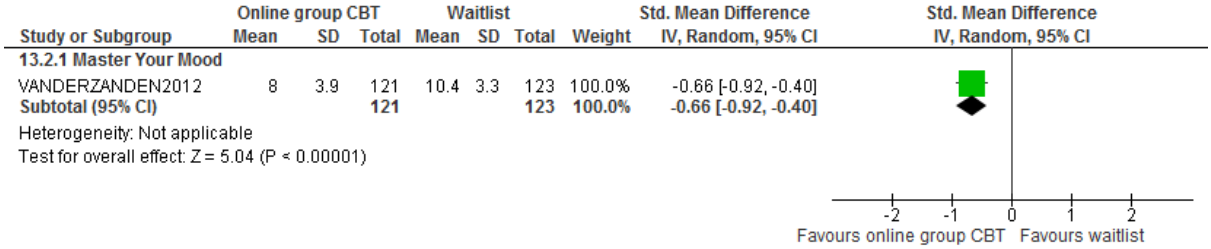


Figure 4.50 Self-rated anxiety in young people and young adults for online group CBT for depression compared with control

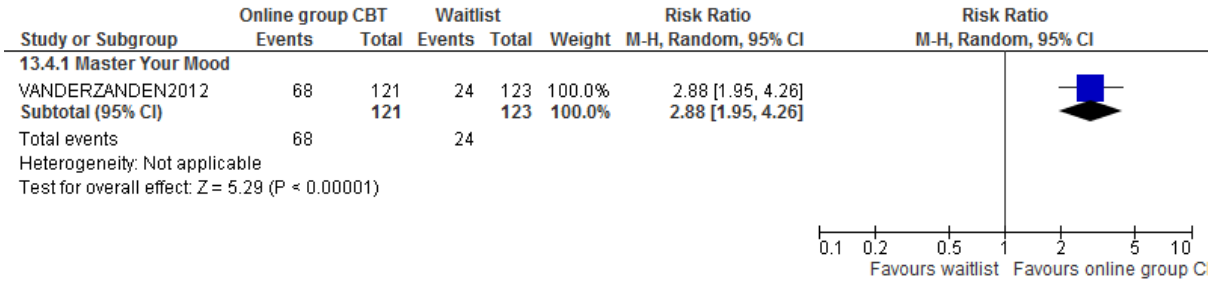


Figure 4.51 Clinically significant change in depression in young people and young adults for online group CBT for depression compared with control

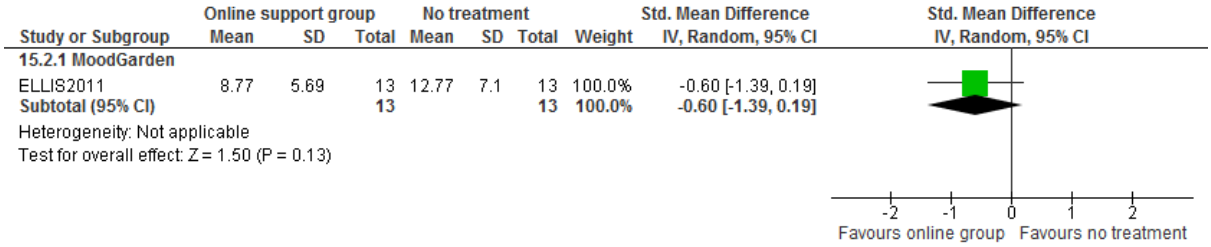


Figure 4.52 Self-rated depression in young adults for online support group for anxiety and depression compared with control

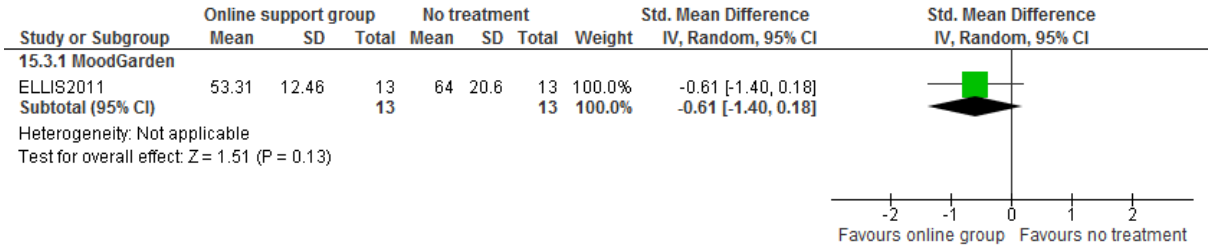


Figure 4.53 Automatic negative thoughts in young adults for online support group for anxiety and depression compared with control

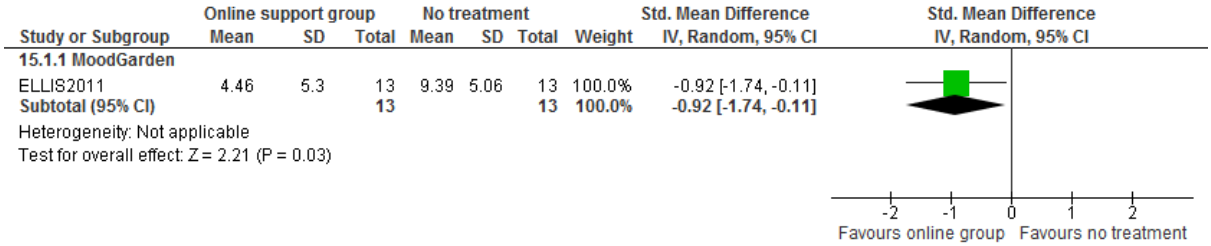


Figure 4.54 Self-rated anxiety in young adults for online support group for anxiety and depression compared with control

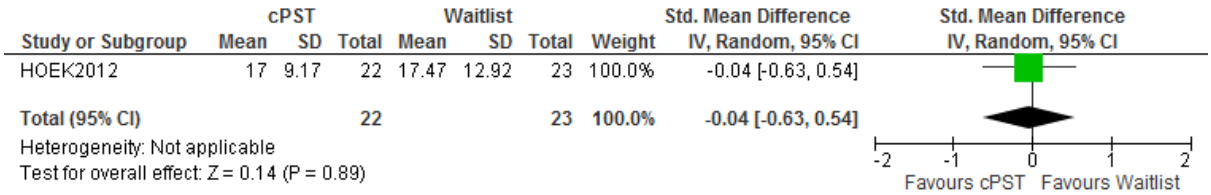


Figure 4.55 Self-rated depression in young people and young adults for computer-based problem solving therapy for anxiety and depression compared with control

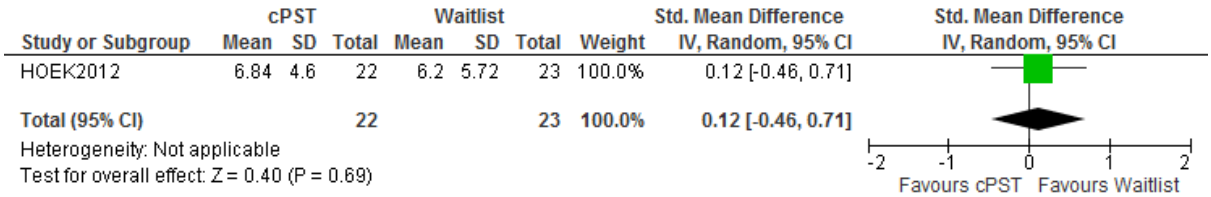


Figure 4.56 Self-rated anxiety in young people and young adults for computer-based problem solving therapy for anxiety and depression compared with control

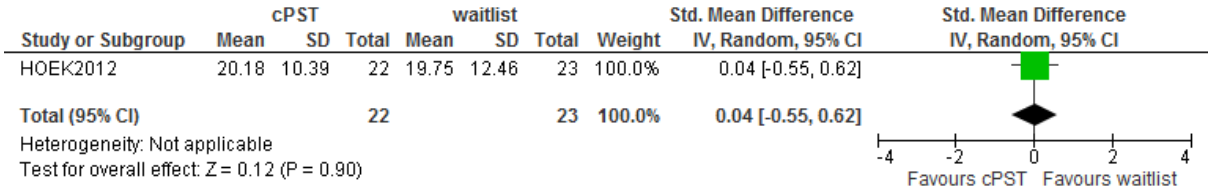


Figure 4.57 Self-rated depression in young people and young adults at follow-up for computer-based problem solving therapy for anxiety and depression compared with control

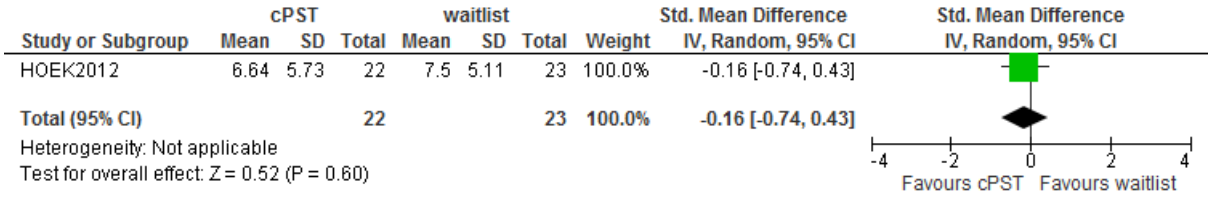


Figure 4.58 Self-rated anxiety in young people and young adults for computer-based problem solving therapy for anxiety and depression compared with control

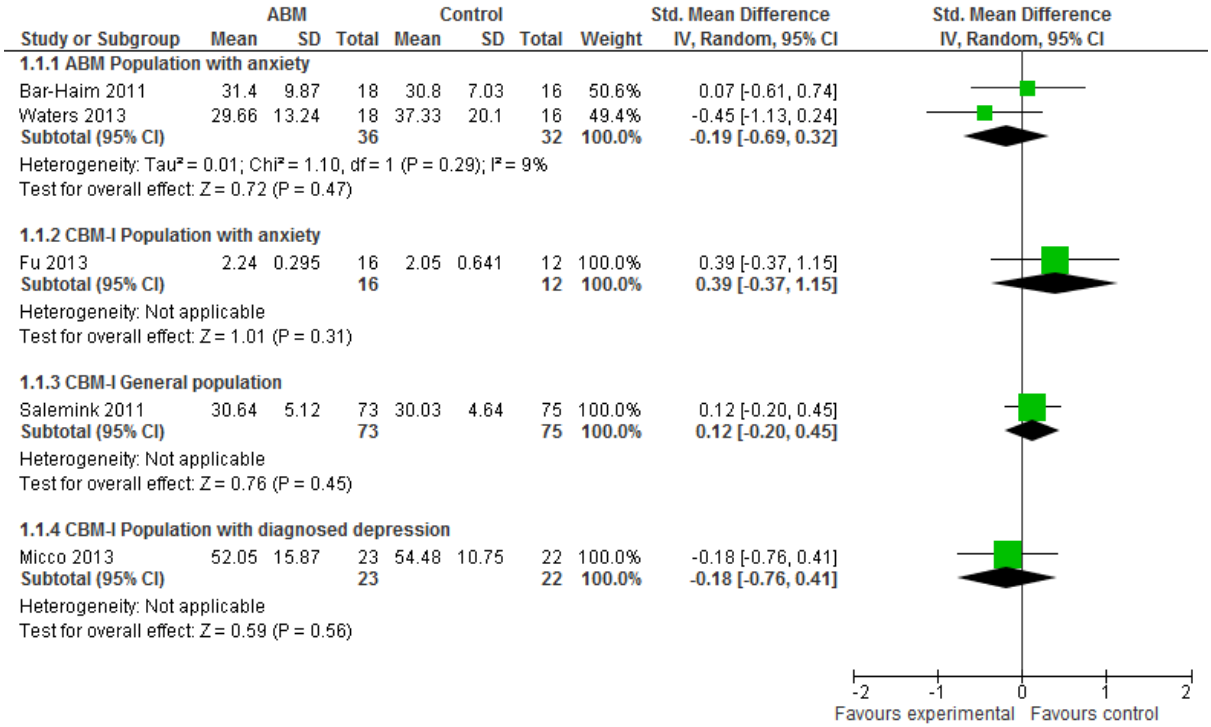


Figure 4.59 Self-rated anxiety for ABM compared with neutral training

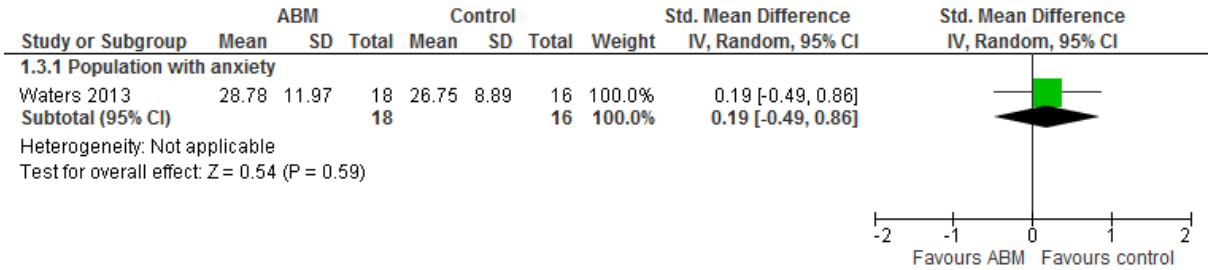


Figure 4.60 Parent-rated anxiety for ABM compared with neutral training

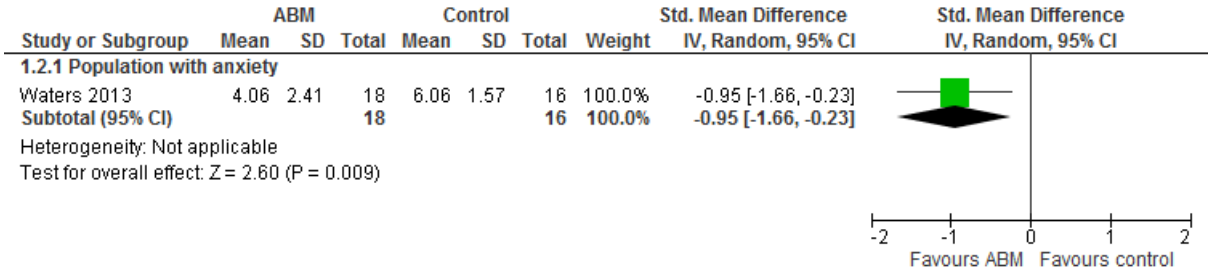


Figure 4.61 Clinician-rated anxiety for ABM compared with neutral training

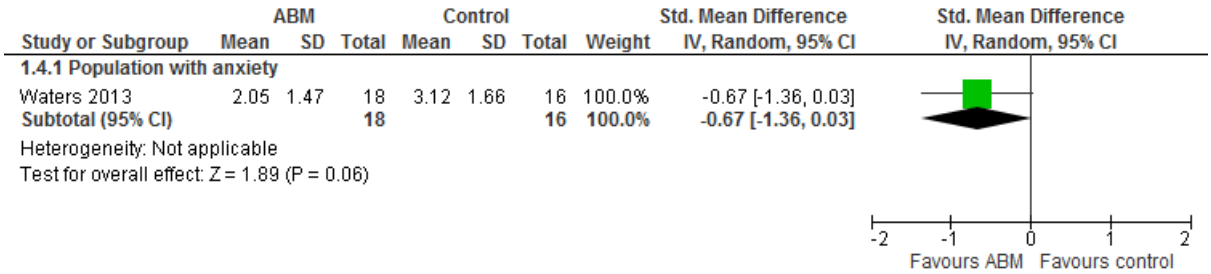


Figure 4.62 Clinician-rated mean number of anxiety disorders for ABM compared with neutral training

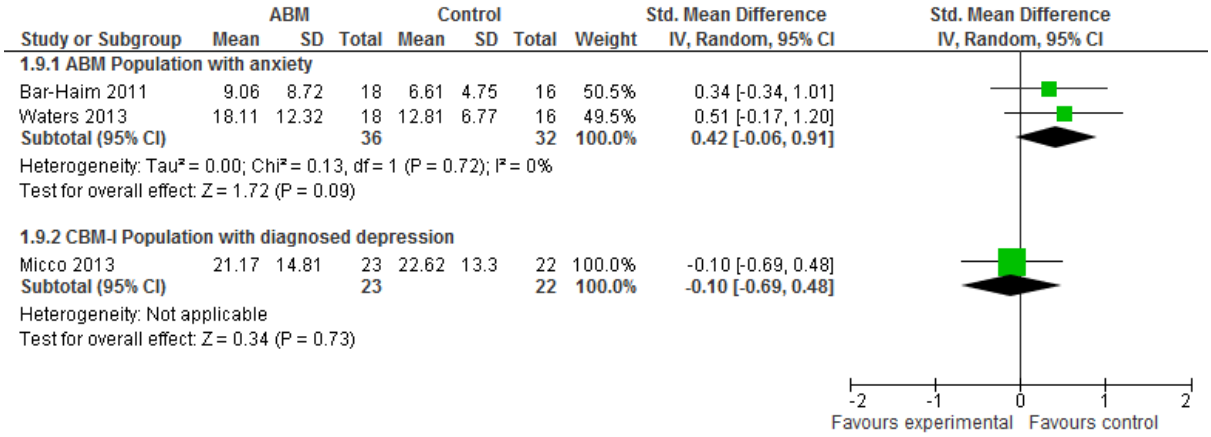


Figure 4.63 Self-rated depression for ABM and CBM-I compared with neutral training

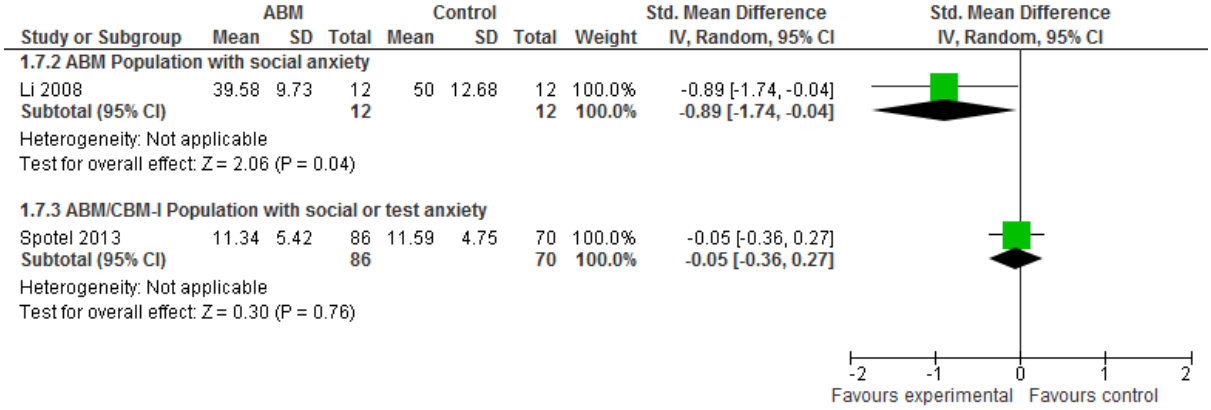


Figure 4.64 Self-rated social anxiety for ABM and ABM/CBM-I compared with neutral training

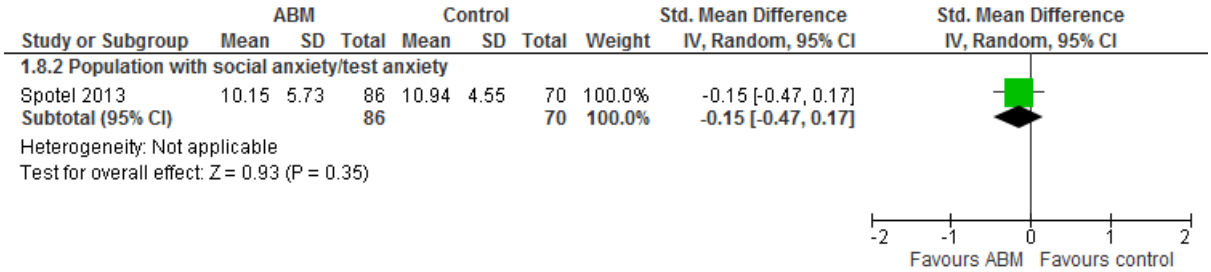


Figure 4.65 Self-rated social anxiety for ABM/CBM-I compared with neutral training at 12 month follow-up

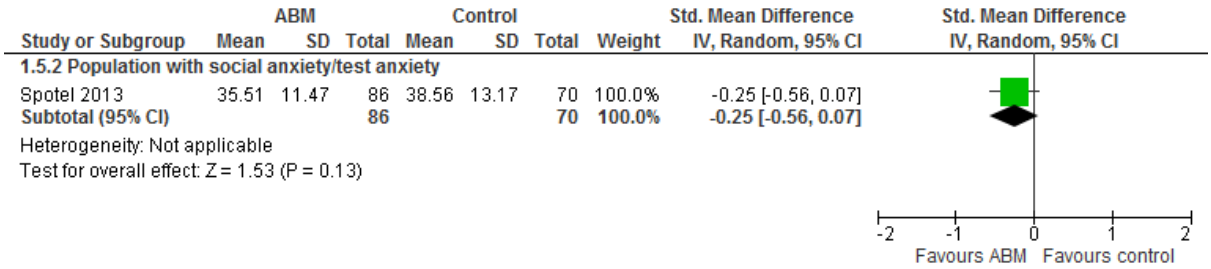


Figure 4.66 Self-rated test anxiety for ABM/CBM-I compared with neutral training

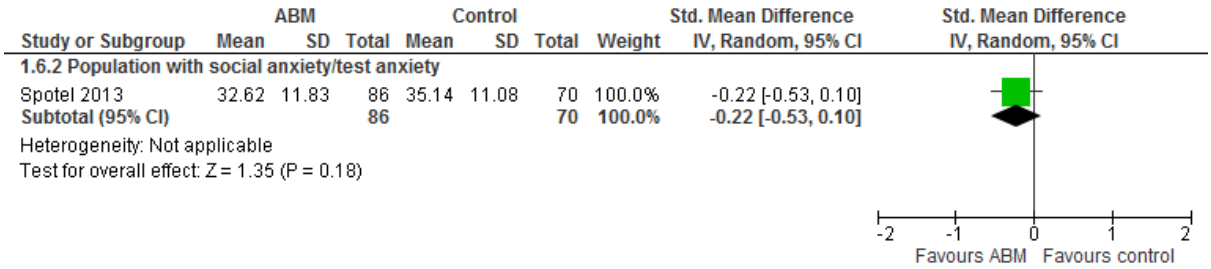


Figure 4.67 Self-rated test anxiety for ABM/CBM-I compared with neutral training at 12 month follow-up

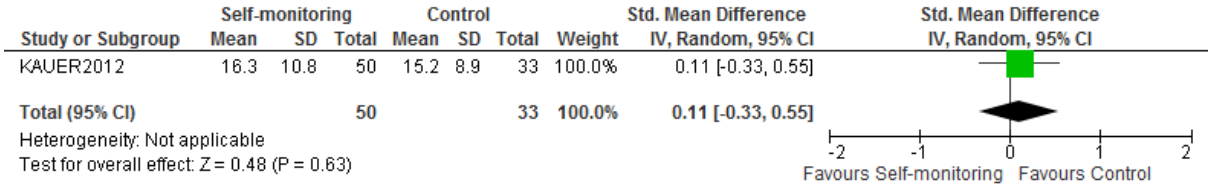


Figure 4.68 Self-rated depression for self-monitoring via mobile phones compared with control in participants with anxiety and/or depression

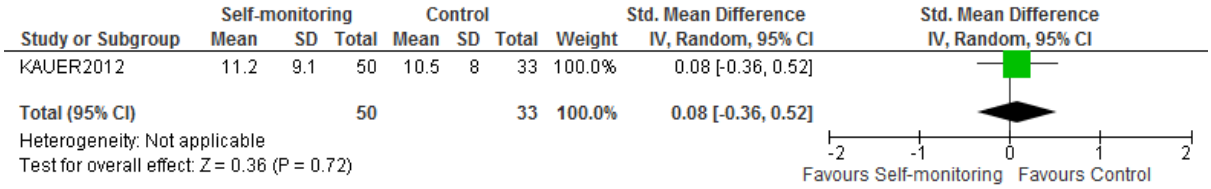


Figure 4.69 Self-rated anxiety for self-monitoring via mobile phones compared with control in participants with anxiety and/or depression

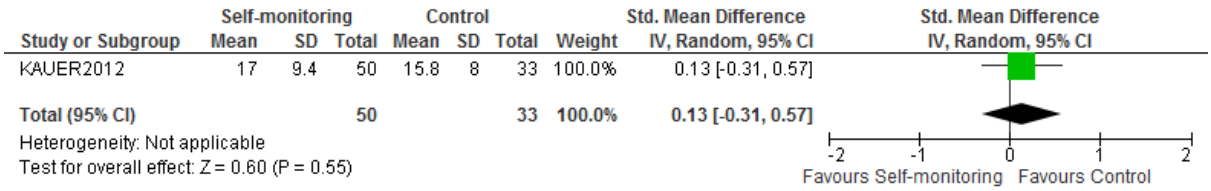


Figure 4.70 Self-rated stress for self-monitoring via mobile phones compared with control in participants with anxiety and/or depression

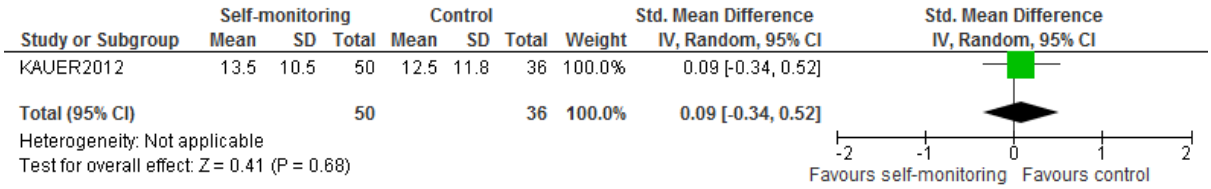


Figure 4.71 Self-rated depression for self-monitoring via mobile phones compared with control in participants with anxiety and/or depression at 6 week follow-up

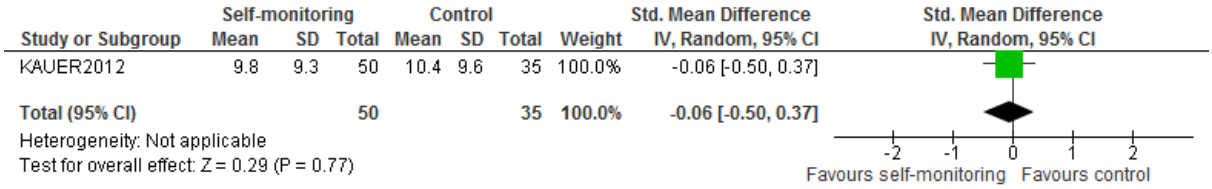


Figure 4.72 Self-rated anxiety for self-monitoring via mobile phones compared with control in participants with anxiety and/or depression at 6 week follow-up

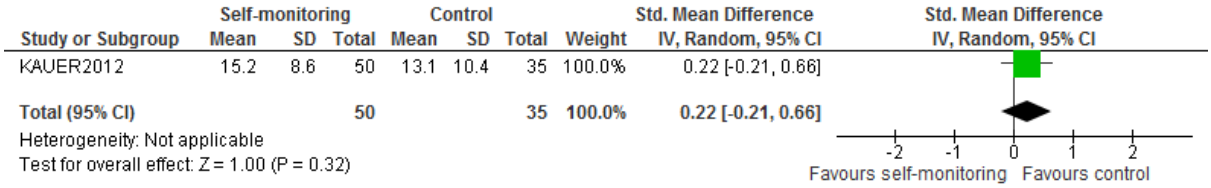


Figure 4.73 Self-rated stress for self-monitoring via mobile phones compared with control in participants with anxiety and/or depression at 6 week follow-up

5 PHOBIA

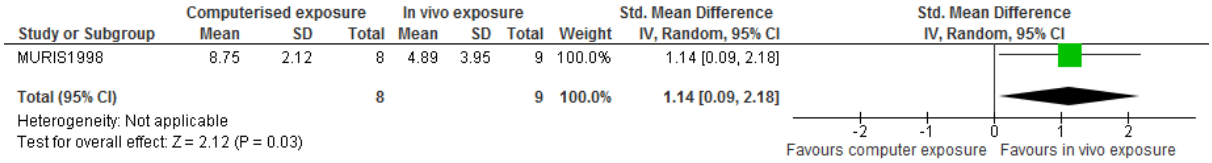


Figure 5.1 Self-rated fear of spiders for computerised exposure compared with in vivo exposure

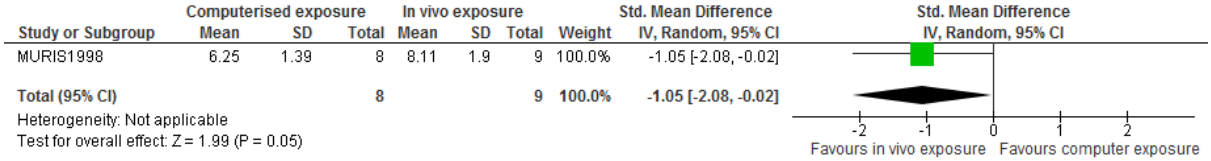


Figure 5.2 Researcher-rated avoidance of spiders for computerised exposure compared with in vivo exposure

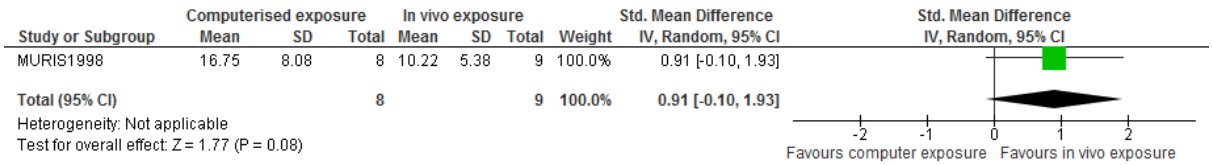


Figure 5.3 Researcher-rated anxiety for computerised exposure compared with in vivo exposure

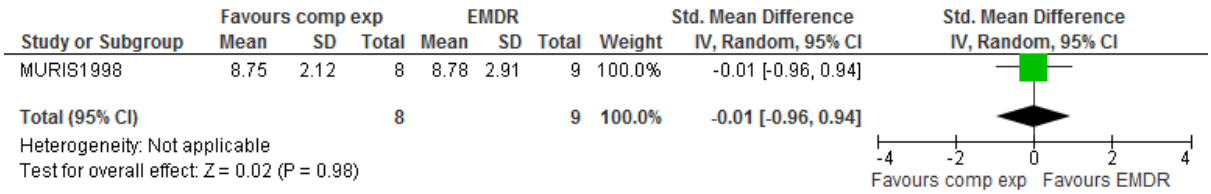


Figure 5.4 Self-rated fear of spiders for computerised exposure compared with EMDR

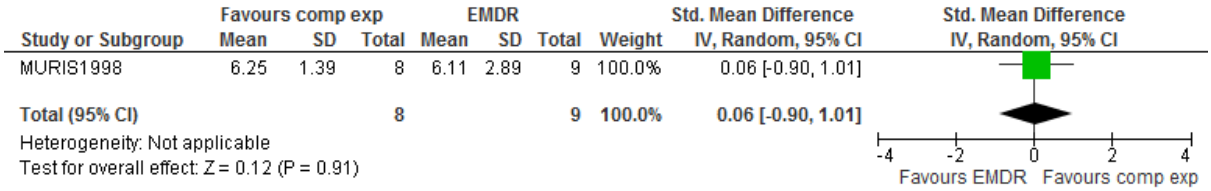


Figure 5.5 Researcher-rated avoidance of spiders for computerised exposure compared with EMDR

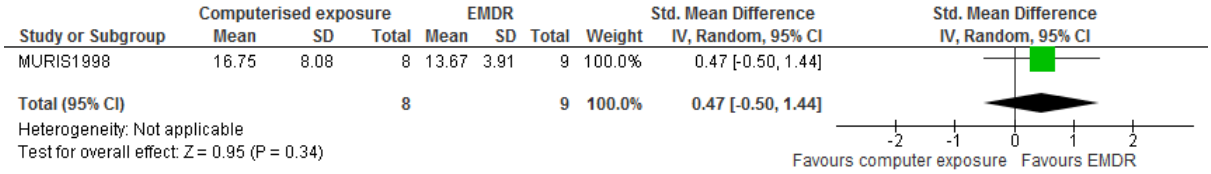


Figure 5.6 Researcher-rated anxiety for computerised exposure compared with in EMDR

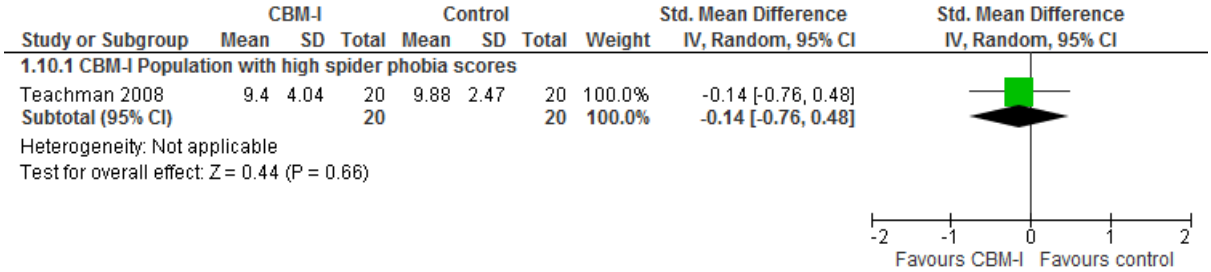


Figure 5.7 Self-rated fear of spiders for CBM-I compared with neutral training

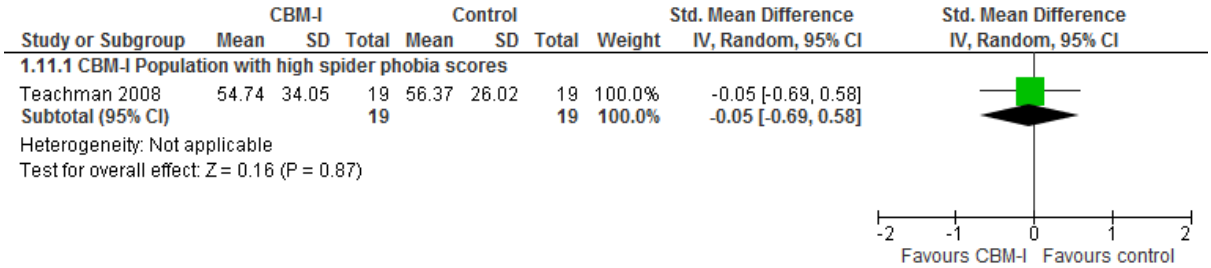


Figure 5.8 Clinician-rated avoidance of spiders for CBM-I compared with neutral training

6 OBSESSIVE COMPULSIVE DISORDER

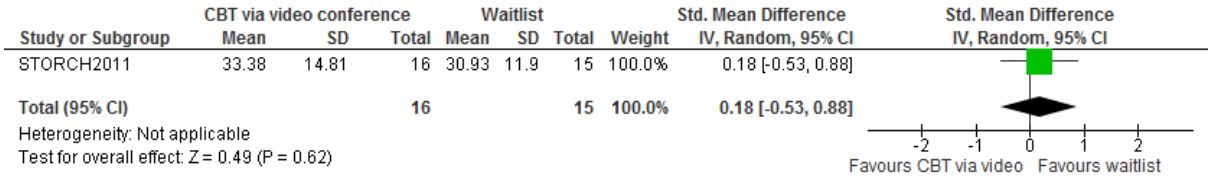


Figure 6.1 Self-rated anxiety for video conference CBT compared with waitlist control in participants with OCD

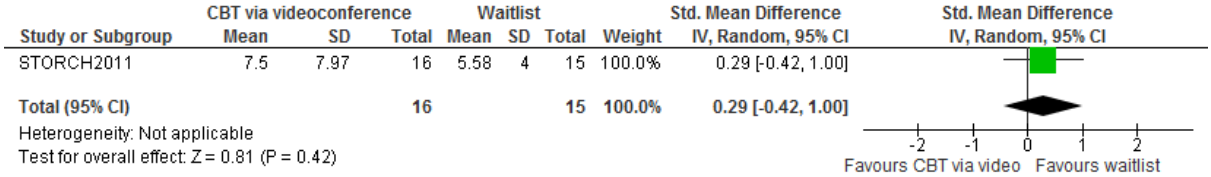


Figure 6.2 Self-rated depression for video conference CBT compared with waitlist control in participants with OCD

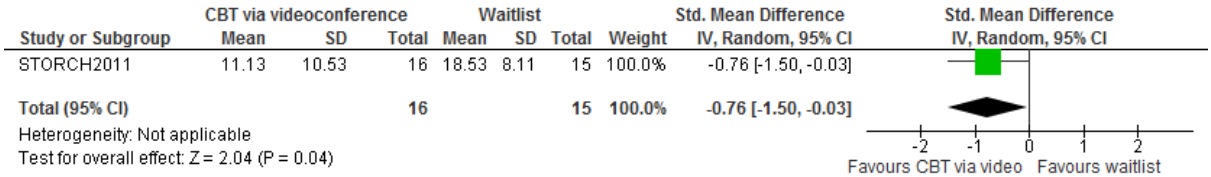


Figure 6.3 Clinician-rated OCD for video conference CBT compared with waitlist control in participants with OCD

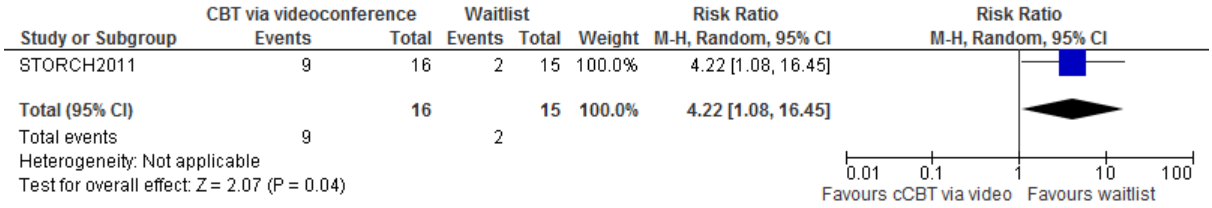


Figure 6.4 Clinician-rated remission (ADIS-IV-C/P ≤3 and CY-BOCS ≤10) for video conference CBT compared with waitlist control in participants with OCD

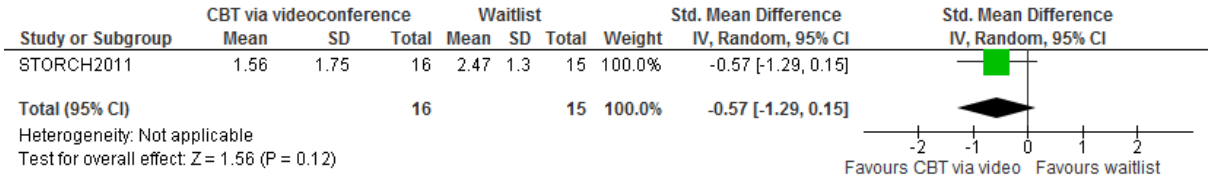


Figure 6.5 Clinician-rated global functioning for video conference CBT compared with waitlist control in participants with OCD

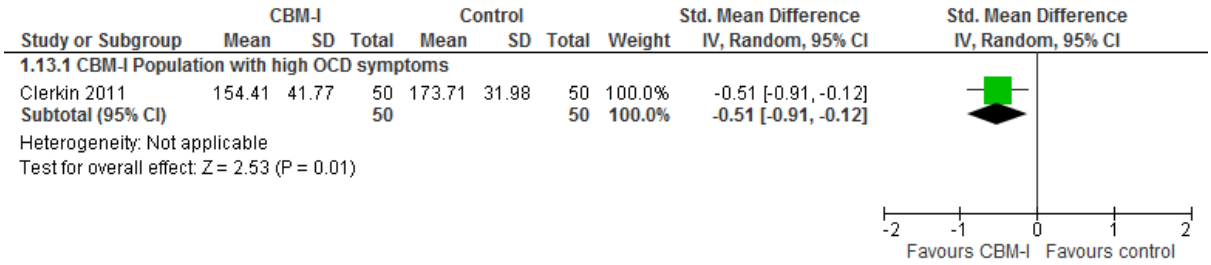


Figure 6.6 Self-rated obsessional beliefs for CBM-I compared to neutral training in participants with symptoms of OCD

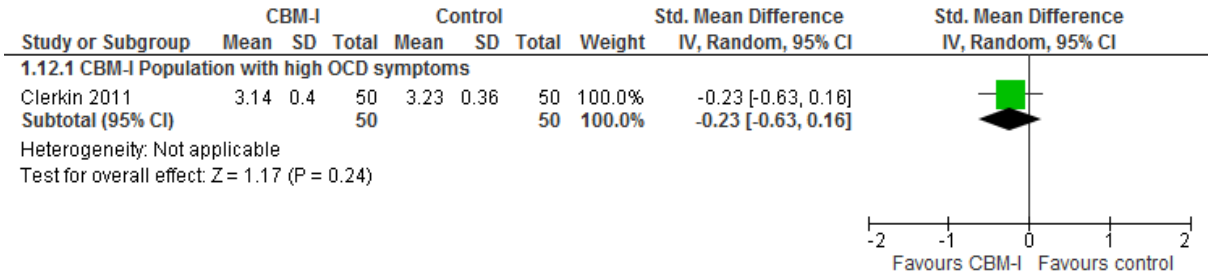


Figure 6.7 Self-rated negative effect for CBM-I compared to neutral training in participants with symptoms of OCD

7 POST TRAUMATIC STRESS DISORDER

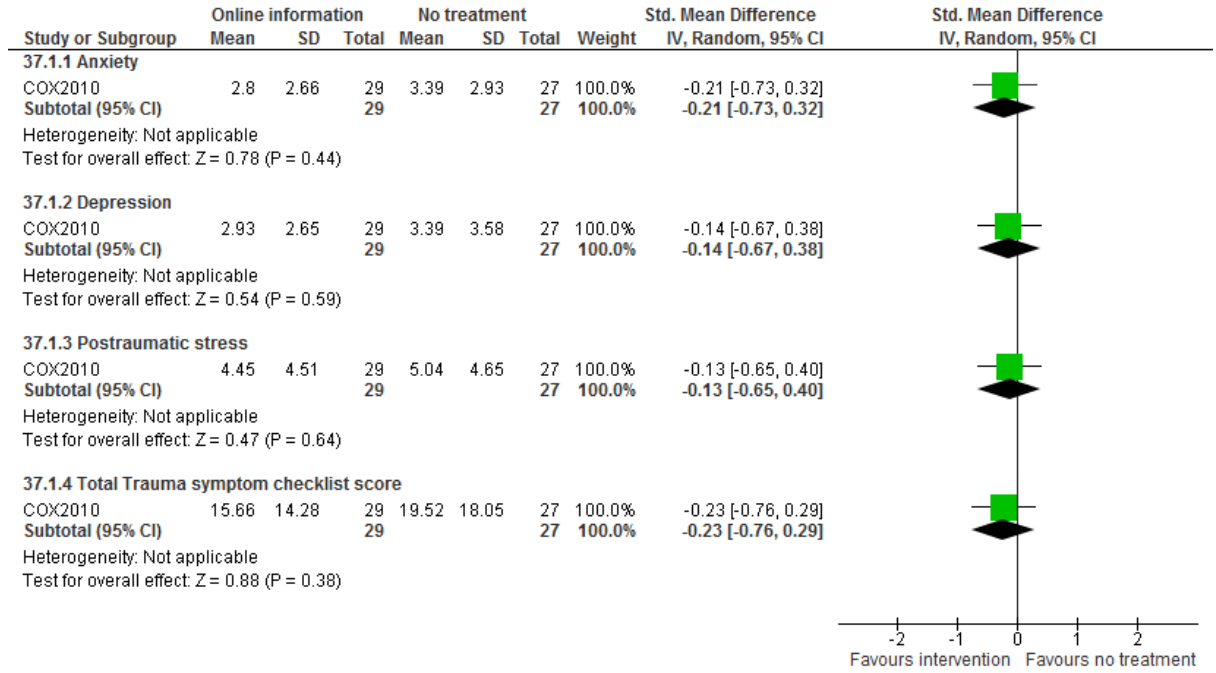


Figure 7.1 Mental health outcomes for information website compared with no treatment in participants with unintentional injury

8 EATING DISORDERS

8.1 STUDENT BODIES VS WAITLIST CONTROL

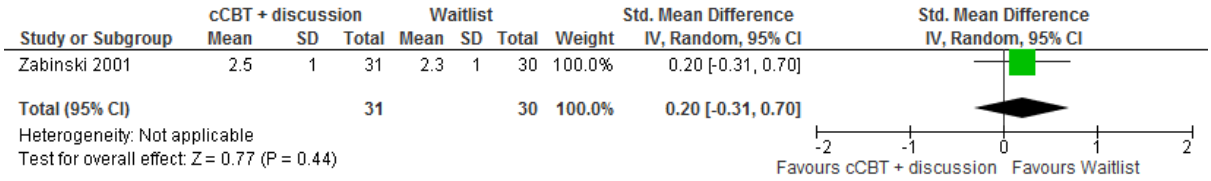


Figure 8.1 Self-rated global eating disorder symptomatology for Student Bodies compared with waitlist control at post-treatment

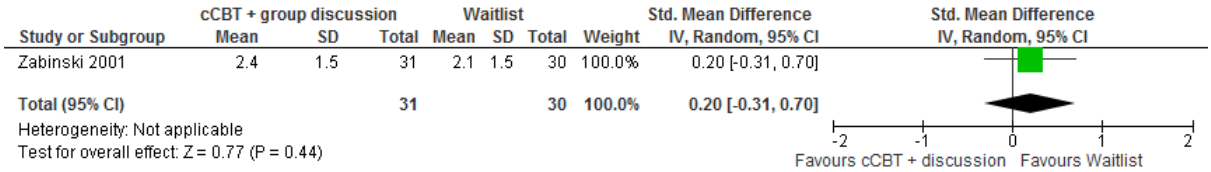


Figure 8.2 Self-rated restraint for Student Bodies compared with waitlist control at post-treatment

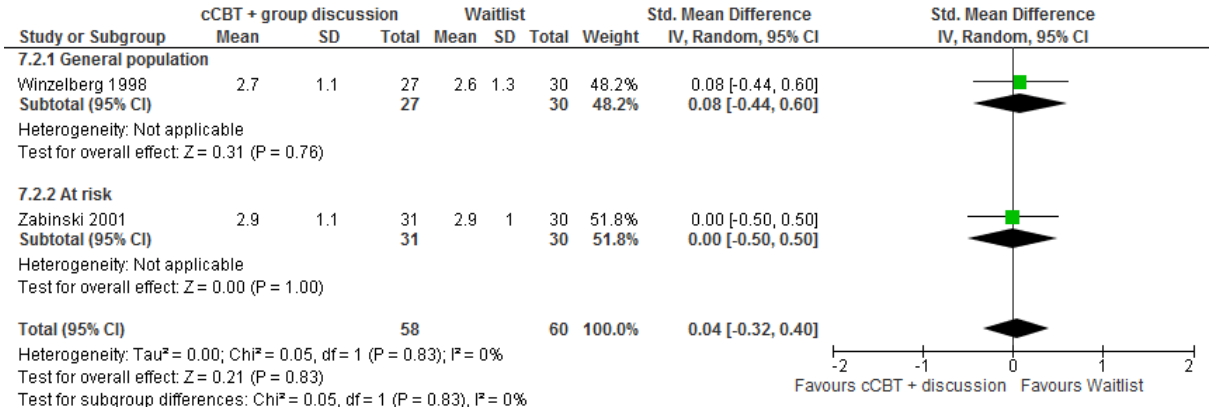


Figure 8.3 Self-rated weight concerns for Student Bodies compared with waitlist control at post-treatment

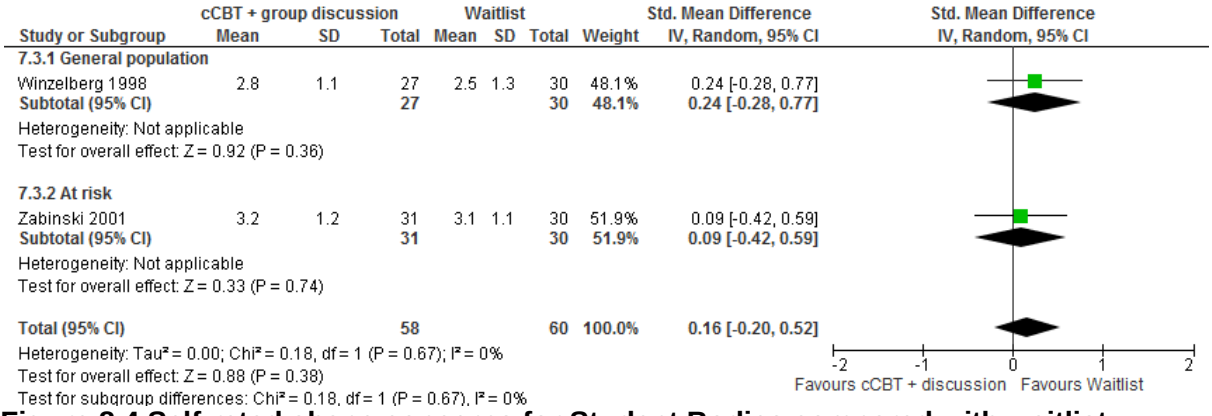


Figure 8.4 Self-rated shape concerns for Student Bodies compared with waitlist control at post-treatment

Figure 8.5 Self-rated drive for thinness for Student Bodies compared with waitlist control at Post-treatment

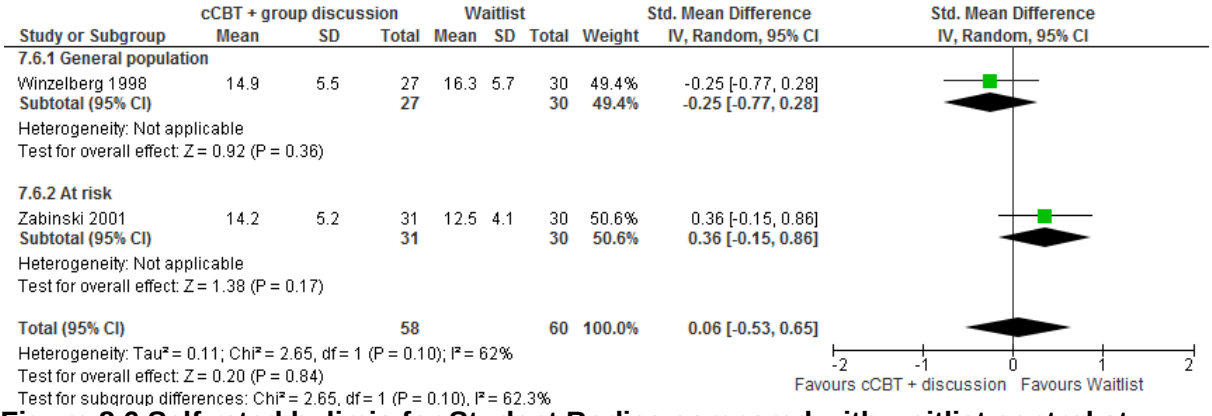


Figure 8.6 Self-rated bulimia for Student Bodies compared with waitlist control at post-treatment

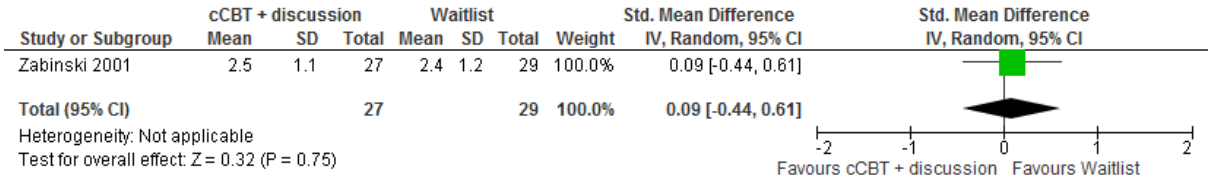


Figure 8.7 Self-rated global eating disorders symptomatology for Student Bodies compared with waitlist control at follow-up

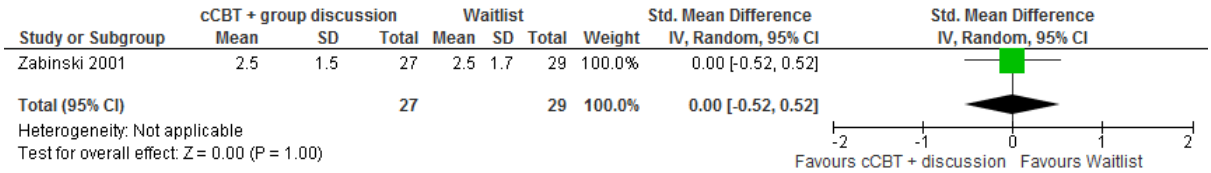


Figure 8.8 Self-rated restraint for Student Bodies compared with waitlist control at follow-up

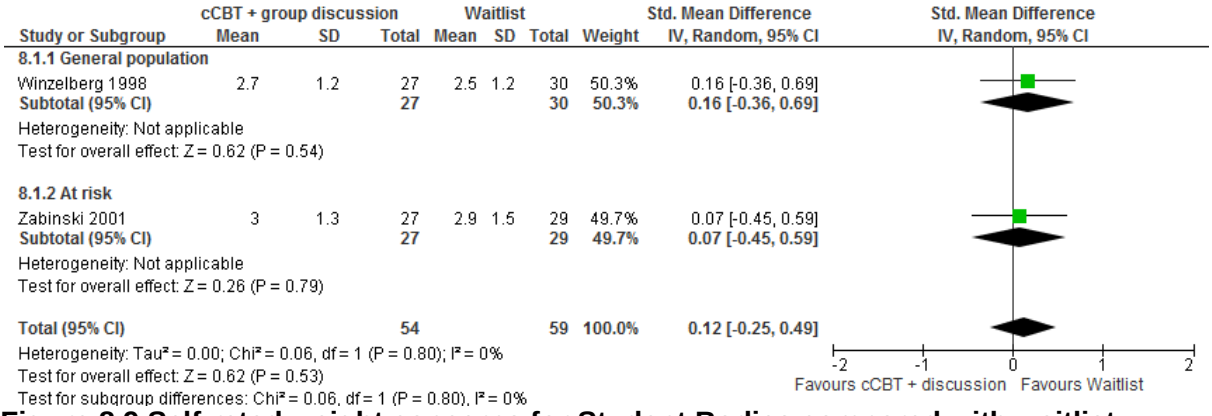


Figure 8.9 Self-rated weight concerns for Student Bodies compared with waitlist control at follow-up

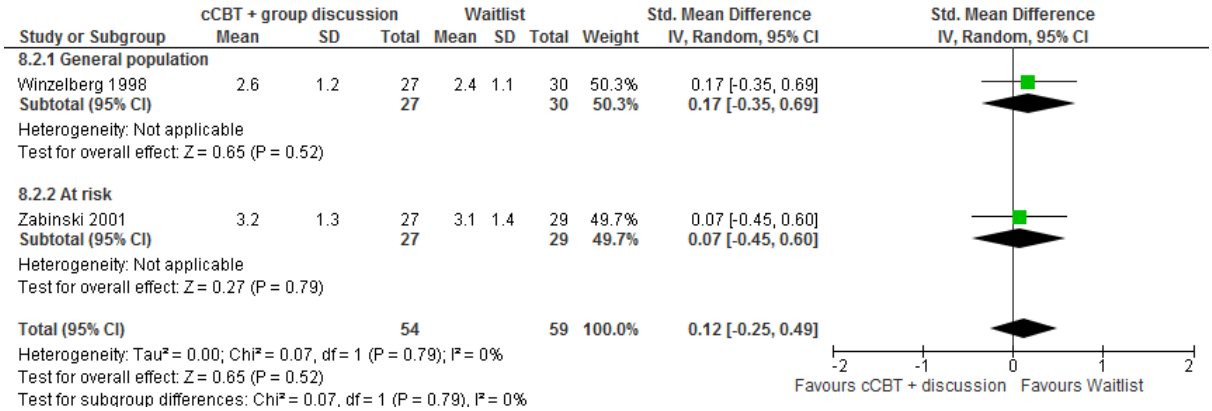


Figure 8.10 Self-rated shape concerns for Student Bodies compared with waitlist control at follow-up

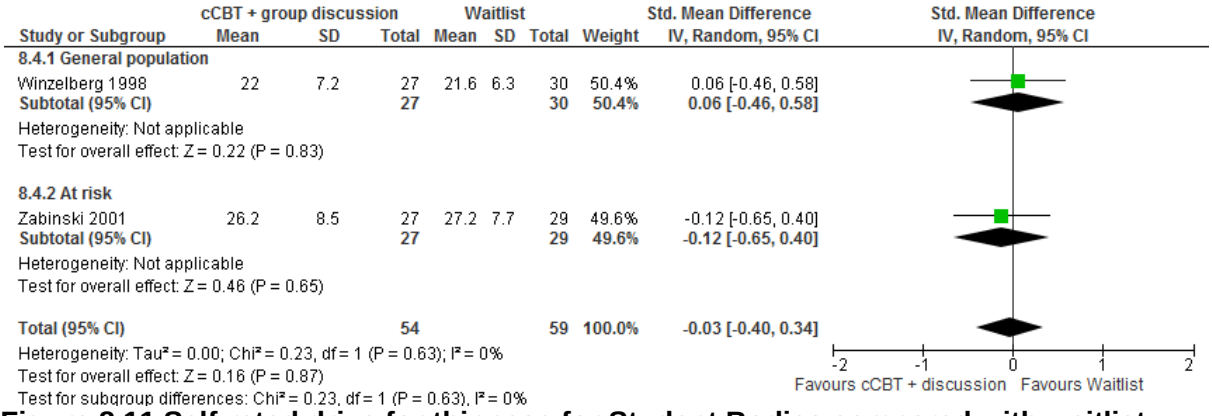


Figure 8.11 Self-rated drive for thinness for Student Bodies compared with waitlist control at follow-up

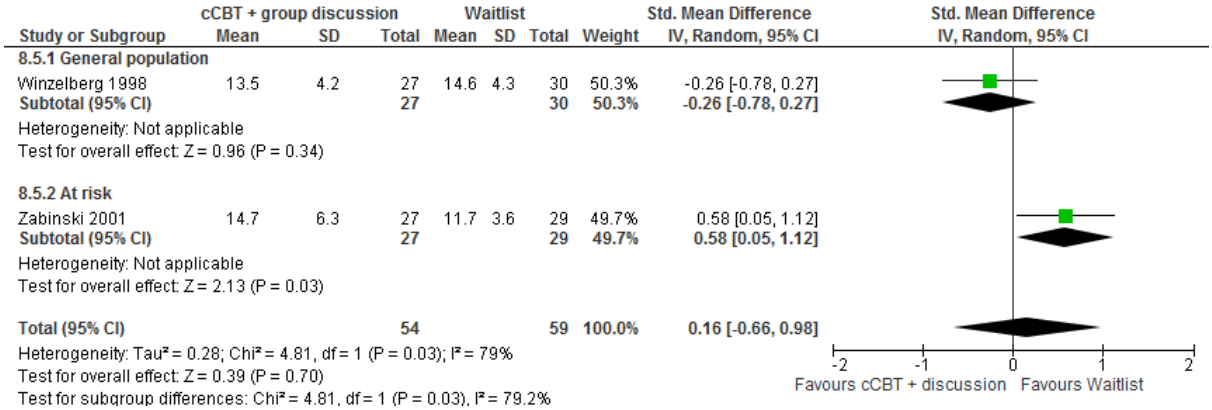


Figure 8.12 Self-rated bulimia for Student Bodies compared with waitlist control at follow-up

8.2 STUDENT BODIES FOR BINGE-EATING DISORDER VS WAITLIST CONTROL

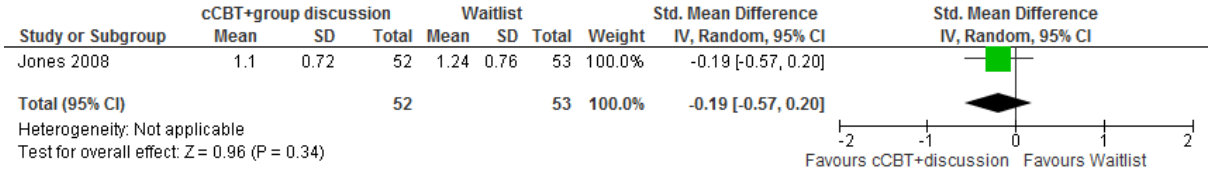


Figure 8.13 Assessor-rated weight and shape concerns at post-treatment for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

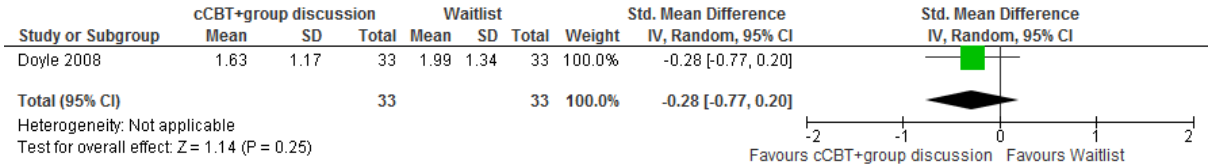


Figure 8.14 Self-rated weight concerns at post-treatment for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

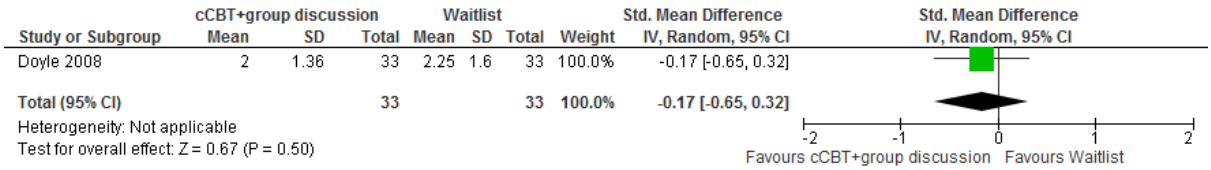


Figure 8.15 Self-rated shape concerns at post-treatment for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

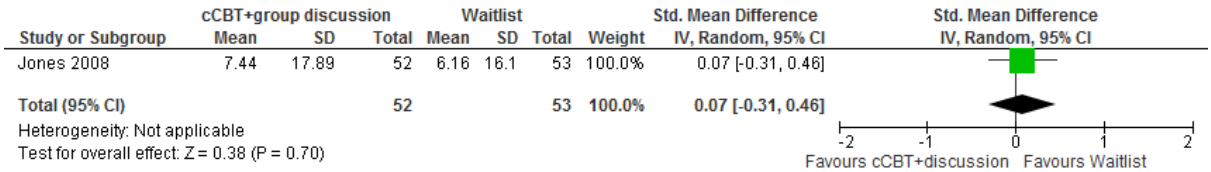


Figure 8.16 Assessor-rated binge episodes at post-treatment for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

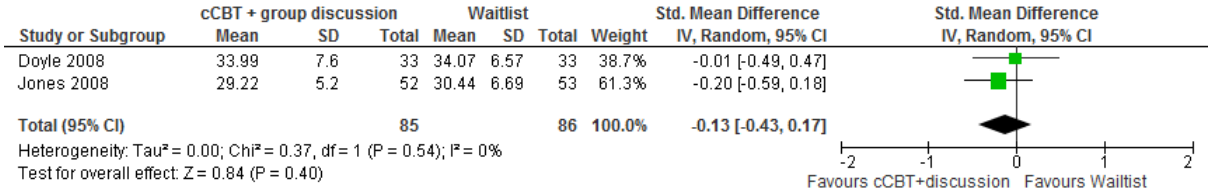


Figure 8.17 Assessor-rated BMI at post-treatment for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

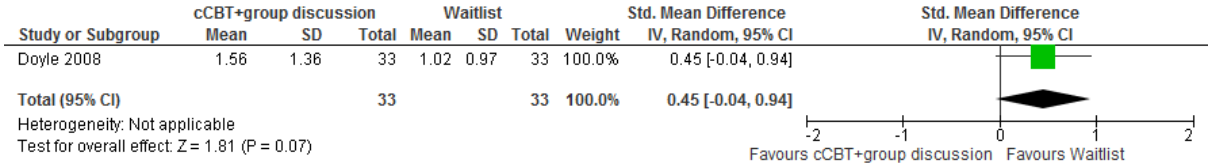


Figure 8.18 Self-rated restraint at post-treatment for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

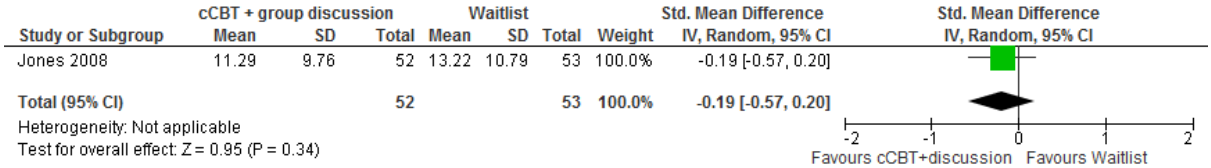


Figure 8.19 Self-rated depression at post-treatment for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

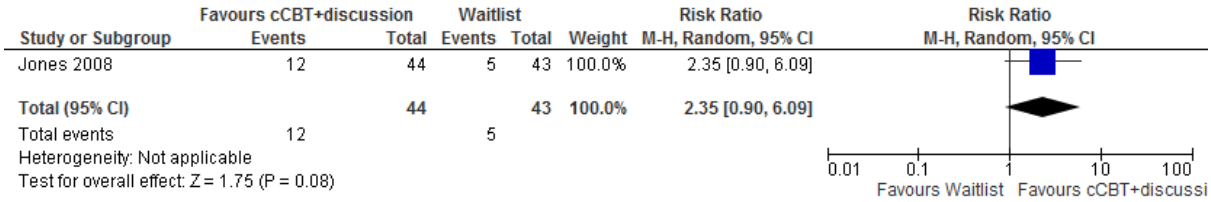


Figure 8.20 Assessor-rated remission (defined as BMI <85th percentile) at post-treatment for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

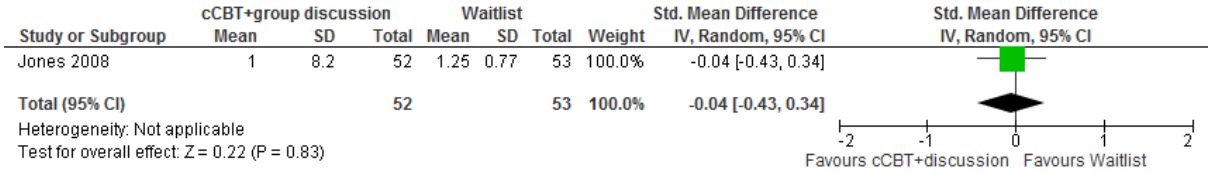


Figure 8.21 Assessor-rated weight and shape concerns at follow-up for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

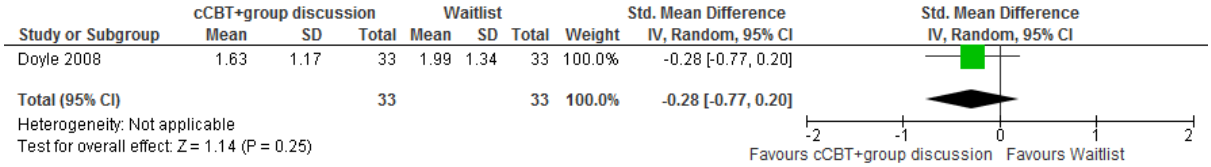


Figure 8.22 Self-rated weight concerns at follow-up for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

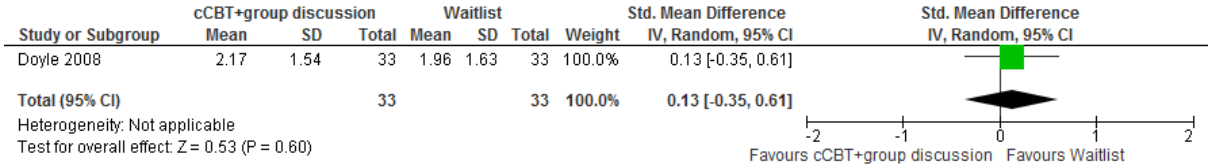


Figure 8.23 Self-rated shape concerns at follow-up for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

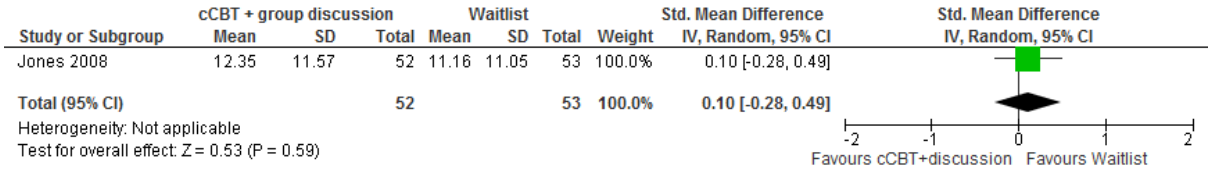


Figure 8.24 Self-rated depression at follow-up for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

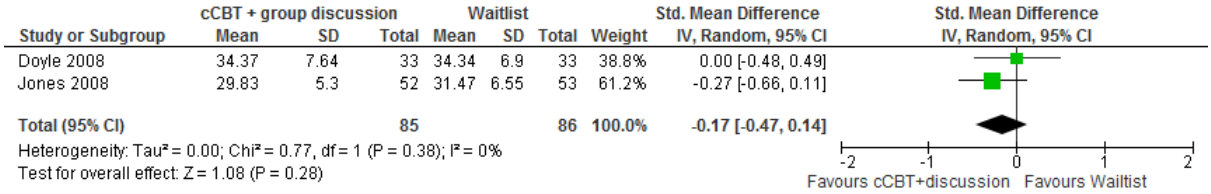


Figure 8.25 Assessor-rated BMI at follow-up for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

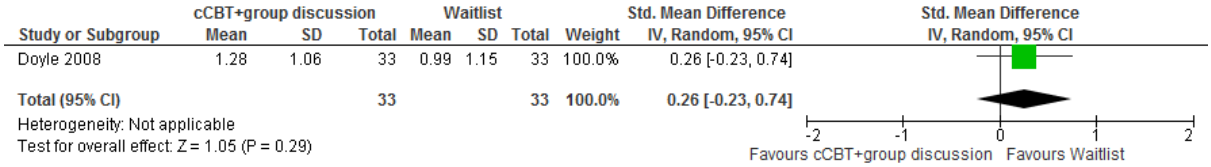


Figure 8.26 Self-rated restraint at follow-up for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

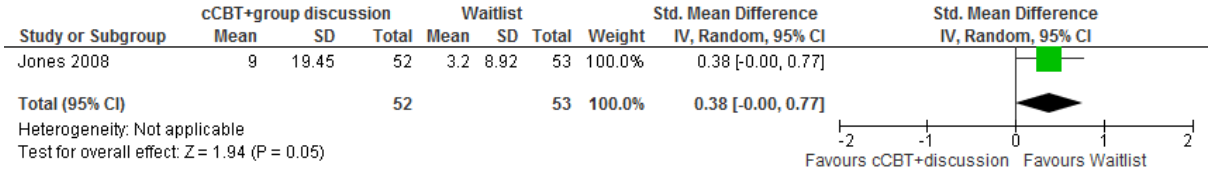


Figure 8.27 Assessor-rated binge episodes at follow-up for Student Bodies compared with Waitlist control in populations at risk of binge-eating disorder

8.3 ONLINE GROUP CBT VS WAITLIST CONTROL

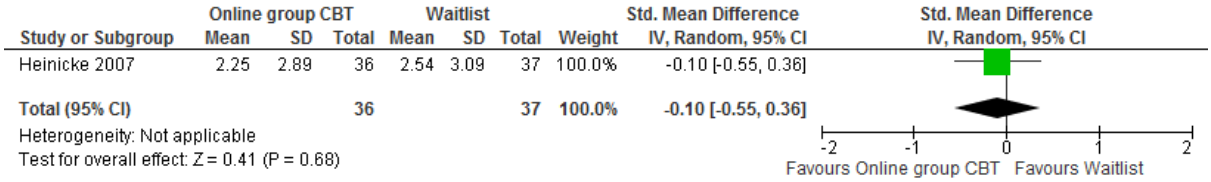


Figure 8.28 Self-rated weight loss behaviour at post-treatment for Online group CBT compared with Waitlist control

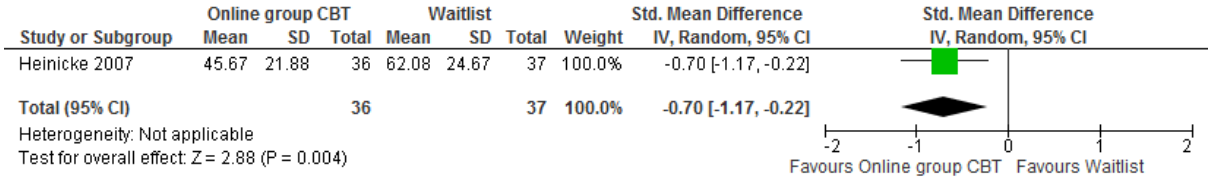


Figure 8.29 Self-rated shape concerns at post-treatment for Online group CBT compared with Waitlist control

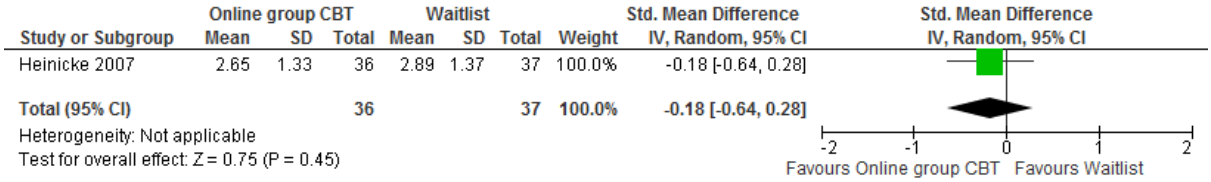


Figure 8.30 Self-rated restraint at post-treatment for Online group CBT compared with Waitlist control

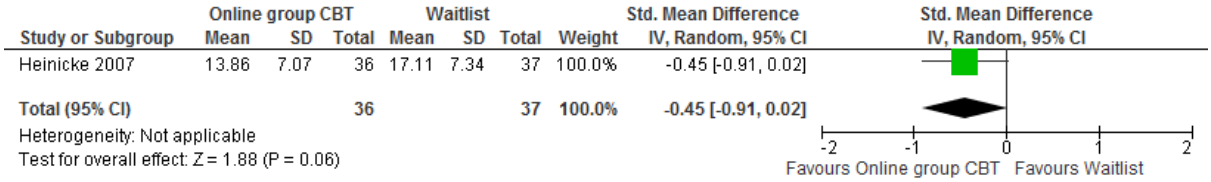


Figure 8.31 Self-rated bulimia at post-treatment for Online group CBT compared with Waitlist control

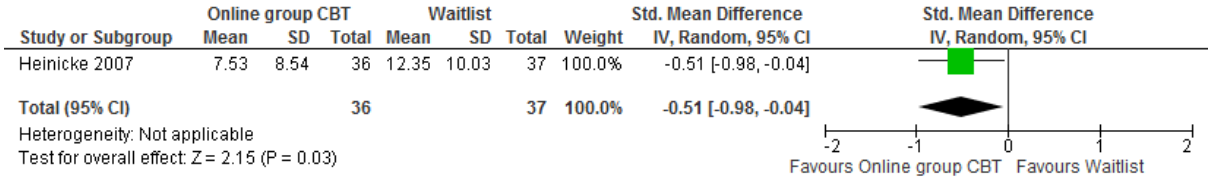


Figure 8.32 Self-rated depression at post-treatment for Online group CBT compared with Waitlist control

Computer-based psychoeducation vs control

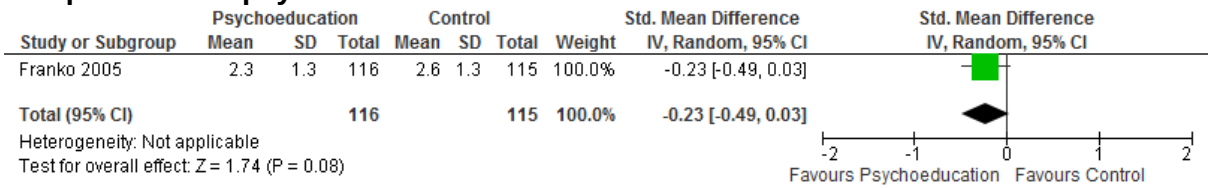


Figure 8.33 Self-rated eating disorder symptomatology at follow-up for computer-based psychoeducation compared with control in mixed population participants (high and low risk of developing an eating disorder)

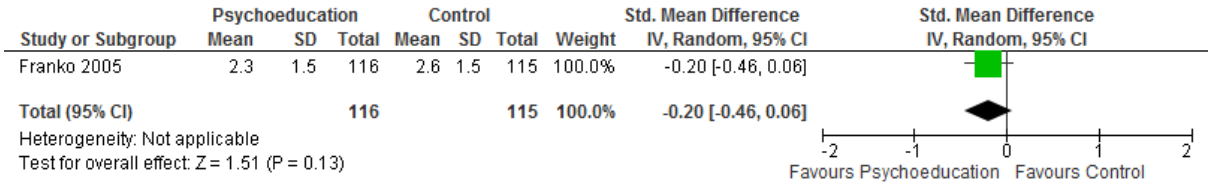


Figure 8.34 Self-rated shape concerns at follow-up for computer-based psychoeducation compared with control in mixed population participants (high and low risk of developing an eating disorder)

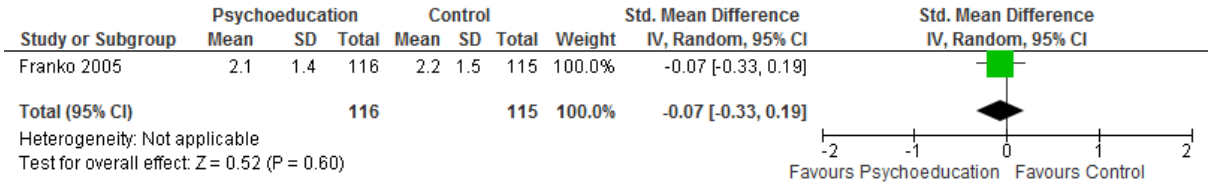


Figure 8.35 Self-rated weight concerns at follow-up for computer-based psychoeducation compared with control in mixed population participants (high and low risk of developing an eating disorder)

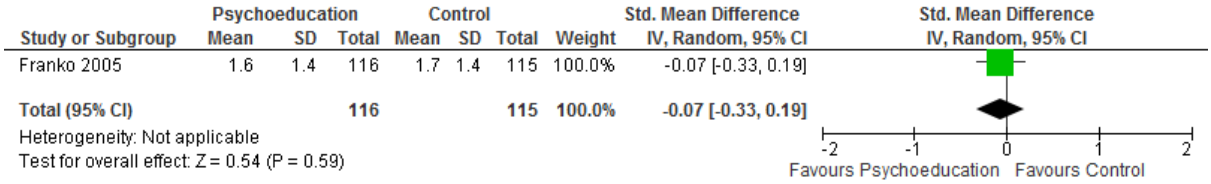


Figure 8.36 Self-rated restraint at follow-up for computer-based psychoeducation compared with control in mixed population participants (high and low risk of developing an eating disorder)

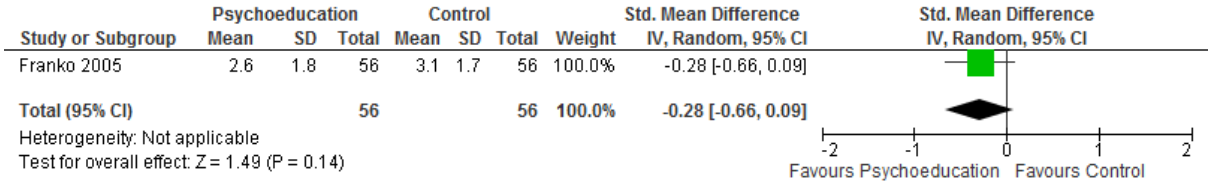


Figure 8.37 Self-rated eating disorder symptomatology at follow-up for computer-based psychoeducation compared with control in at risk population

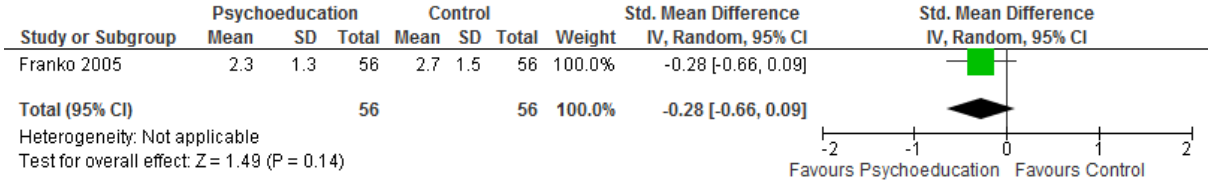


Figure 8.38 Self-rated weight concerns at follow-up for computer-based psychoeducation compared with control in at risk population

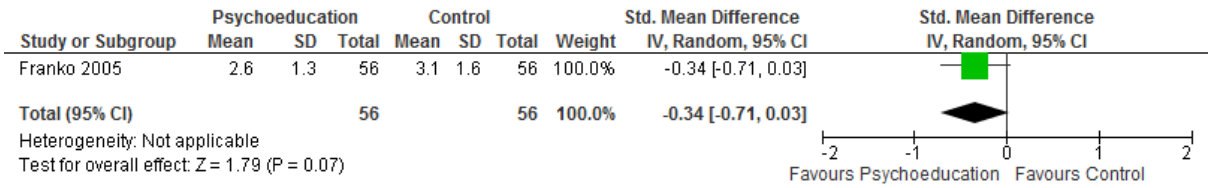


Figure 8.39 Self-rated shape concerns at follow-up for computer-based psychoeducation compared with control in at risk population

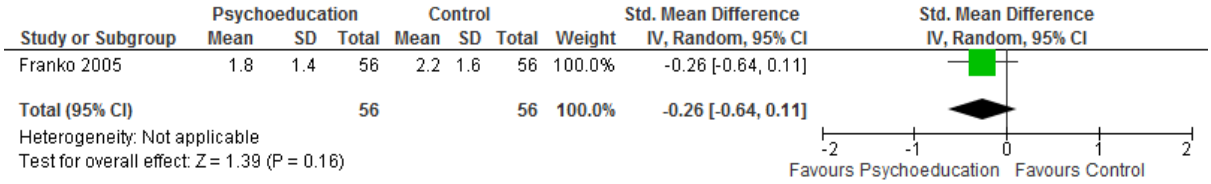


Figure 8.40 Self-rated restraint at follow-up for computer-based psychoeducation compared with control in at risk population

9 ATTENTION DEFICIT HYPERACTIVITY DISODER

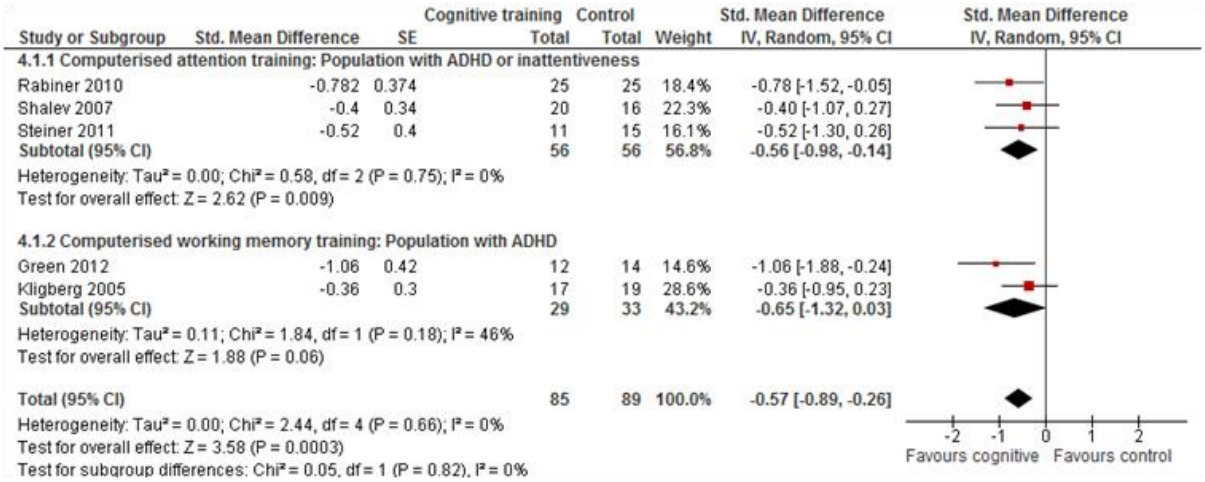


Figure 9.1 Assessor-rated attention for computerised cognitive training compared with control in populations with ADHD or inattentiveness

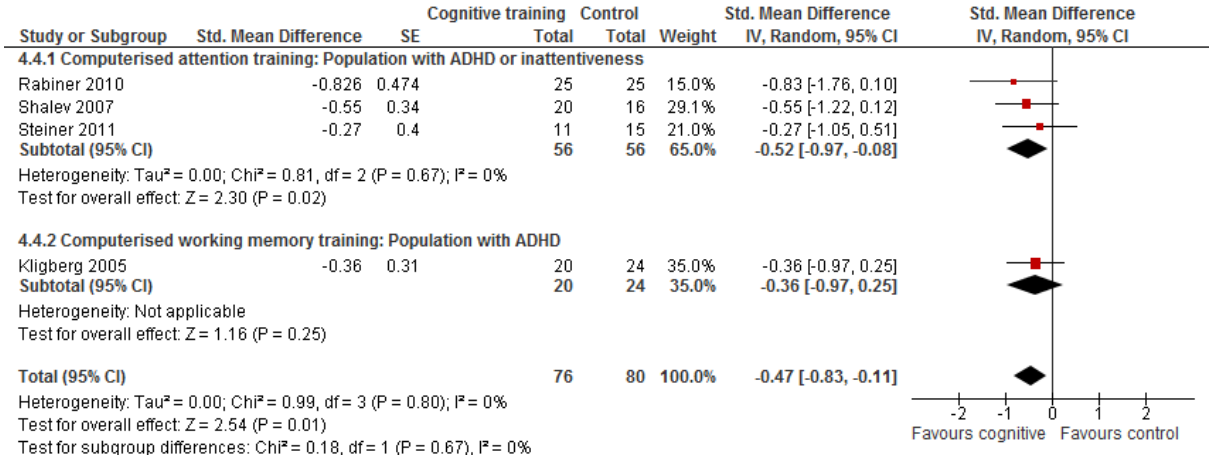


Figure 9.2 Assessor-rated hyperactivity/impulse for computerised cognitive training compared with control in populations with ADHD or inattentiveness

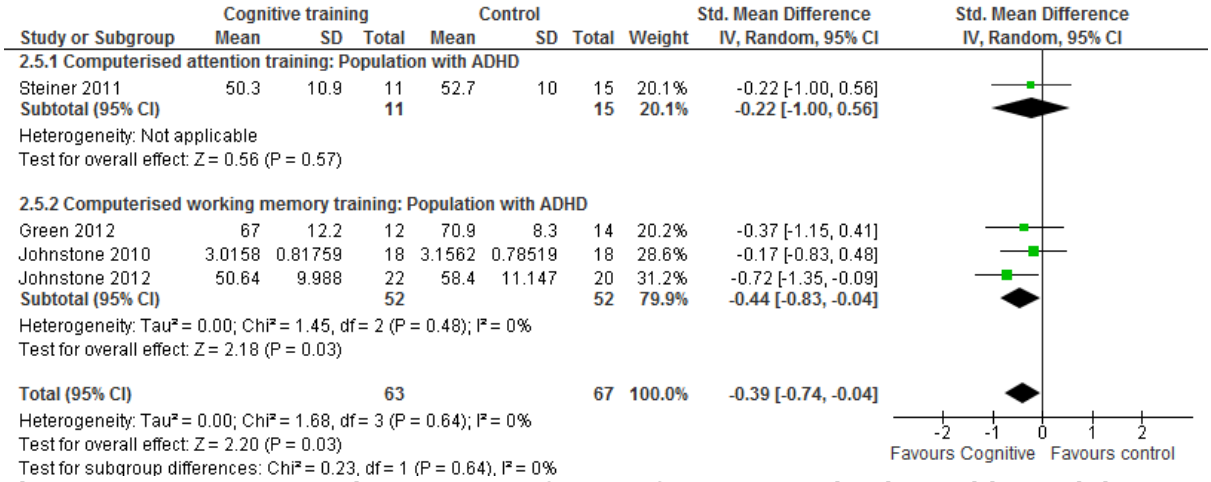


Figure 9.3 Assessor-rated symptoms of ADHD for computerised cognitive training compared with control in populations with ADHD

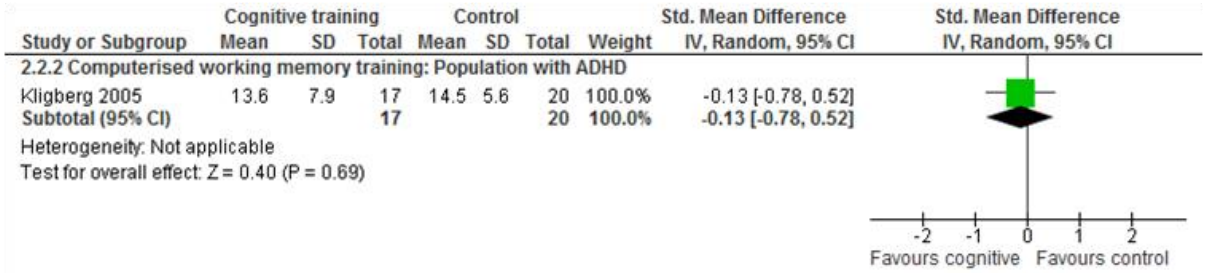


Figure 9.4 Inattention for computerised cognitive training compared with control at 4 month follow-up in population with ADHD

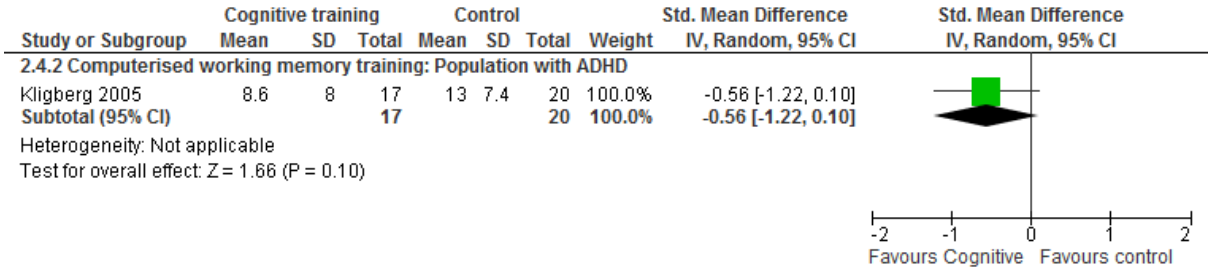


Figure 9.5 Hyperactivity for computerised cognitive training compared with control at 4 month follow-up in population with ADHD

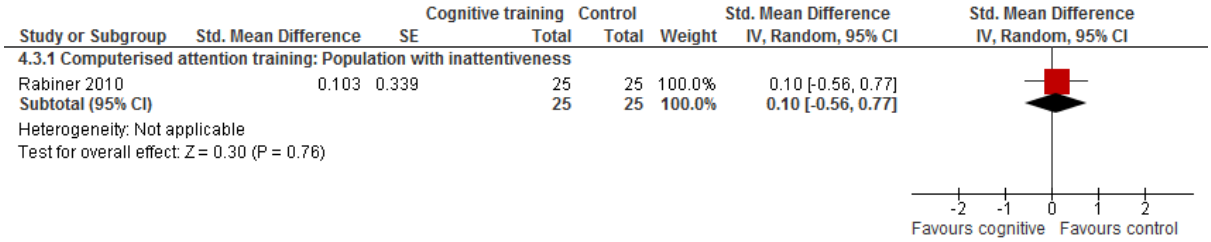


Figure 9.6 Academic productivity for computerised cognitive training compared with control in population with inattentiveness

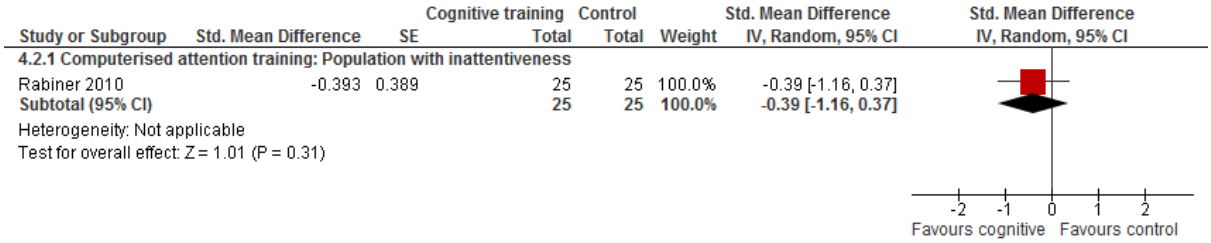


Figure 9.7 Academic success for computerised cognitive training compared with control in population with inattentiveness

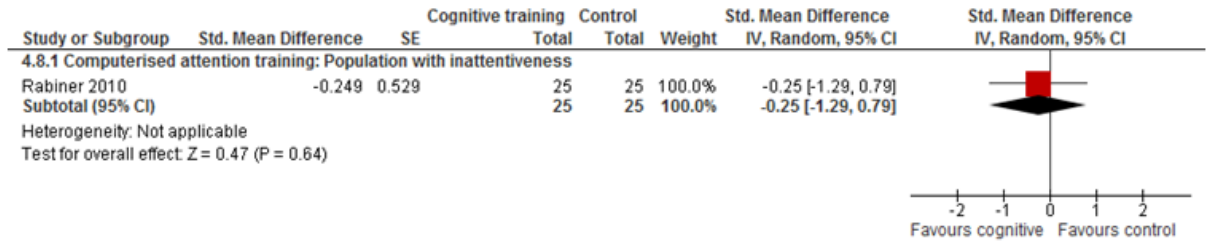


Figure 9.8 Reading ability for computerised cognitive training compared with control in population with inattentiveness

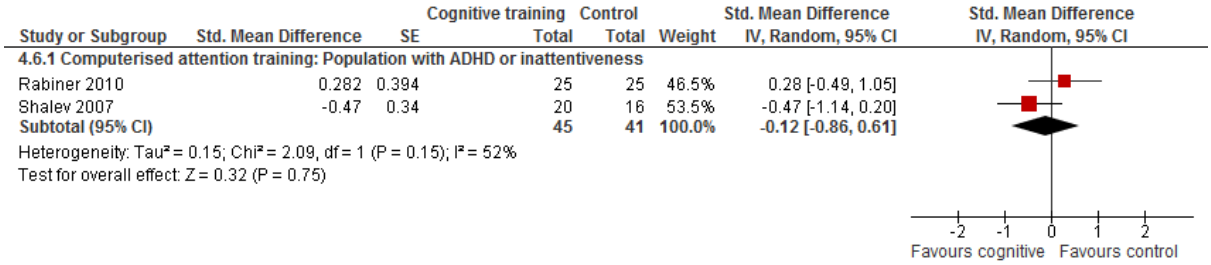


Figure 9.9 Maths ability for computerised cognitive training compared with control in population with ADHD or inattentiveness

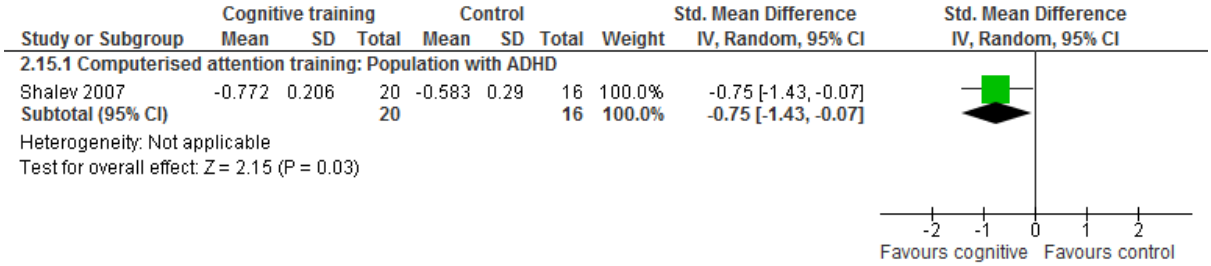


Figure 9.10 Comprehension ability for computerised cognitive training compared with control in population with ADHD

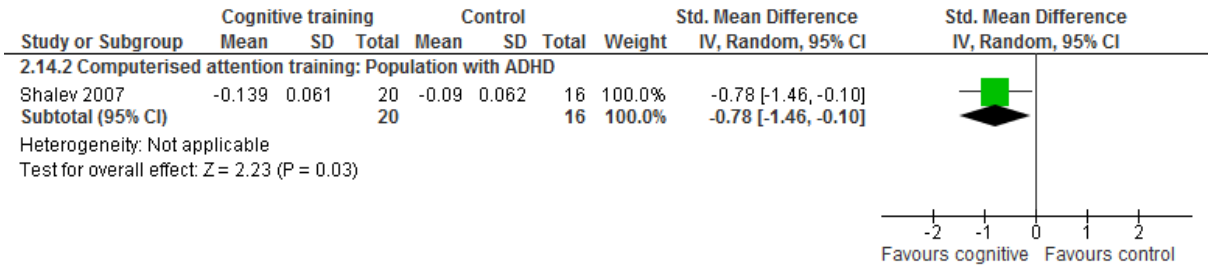


Figure 9.11 Passage copying ability for computerised cognitive training compared with control in population with ADHD

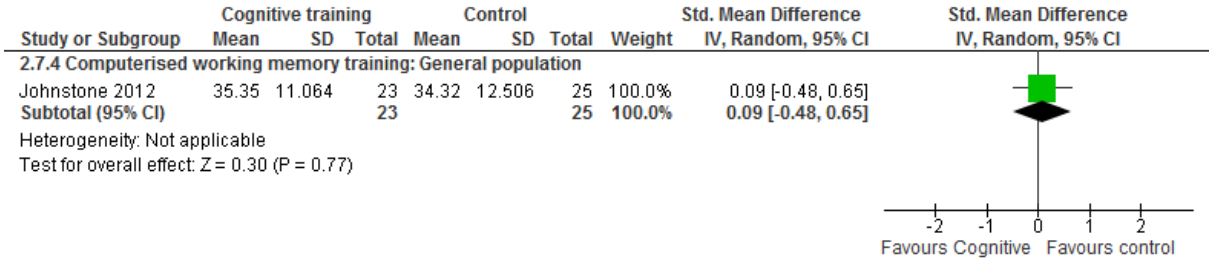


Figure 9.12 Symptoms of ADHD for computerised cognitive training compared with control in general population

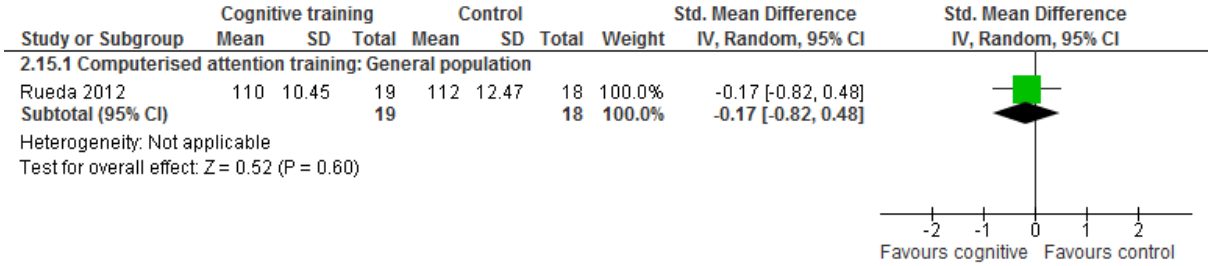


Figure 9.13 Intelligence score for computerised cognitive training compared with control in general population

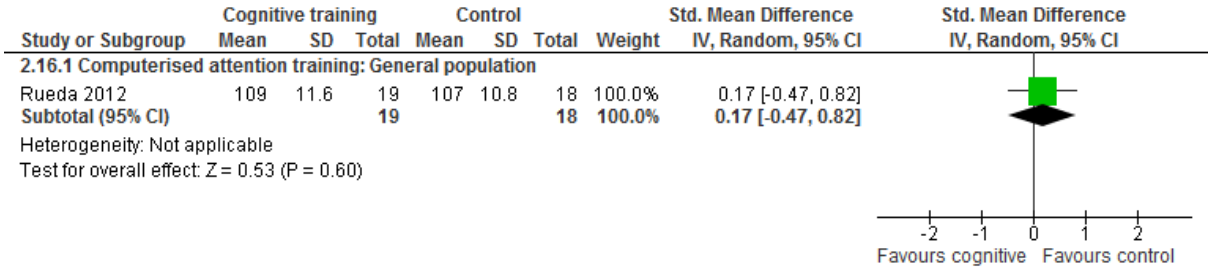


Figure 9.14 Intelligence score for computerised cognitive training compared with control at 3 month follow-up in general population

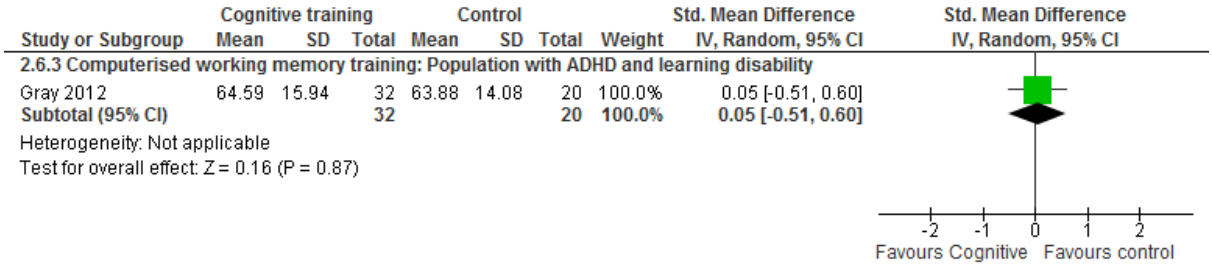


Figure 9.15 Symptoms of ADHD for computerised cognitive training compared with control in population with learning disability

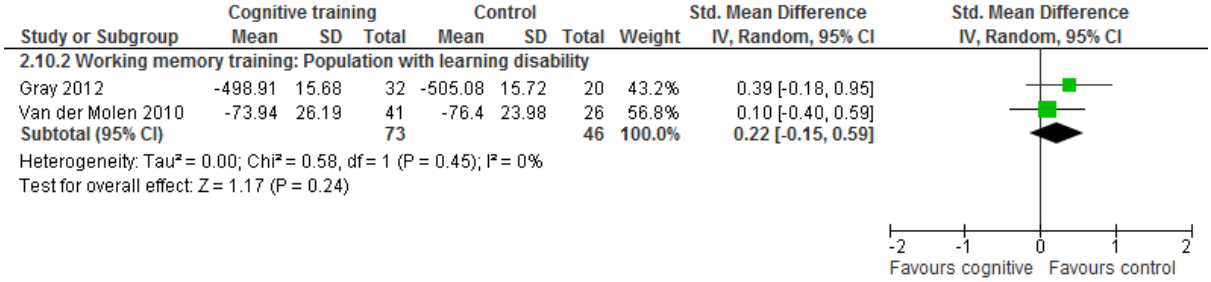


Figure 9.16 Maths ability for computerised cognitive training compared with control in populations with learning disability

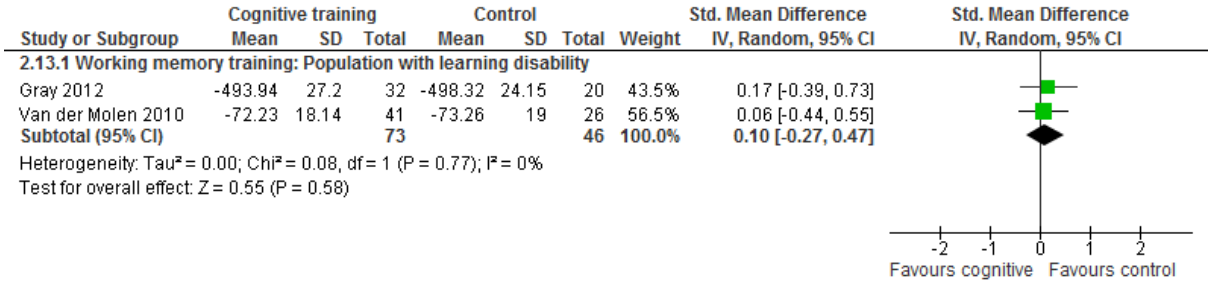


Figure 9.17 Reading ability for computerised cognitive training compared with control in populations with learning disability

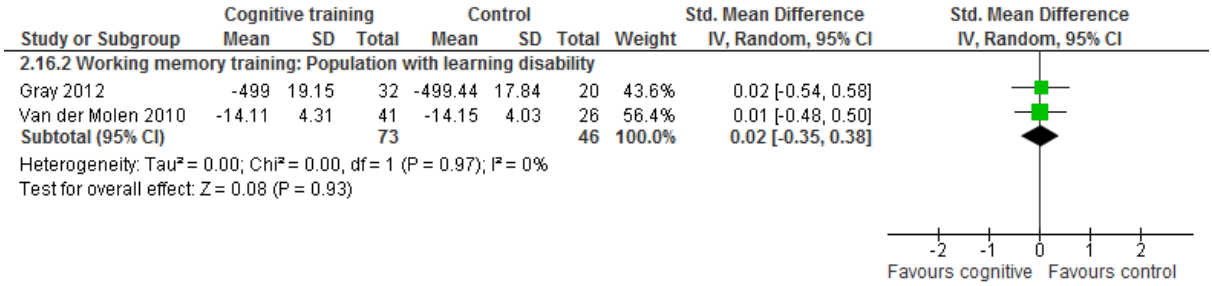


Figure 9.18 Comprehension ability for computerised cognitive training compared with control in populations with learning disability

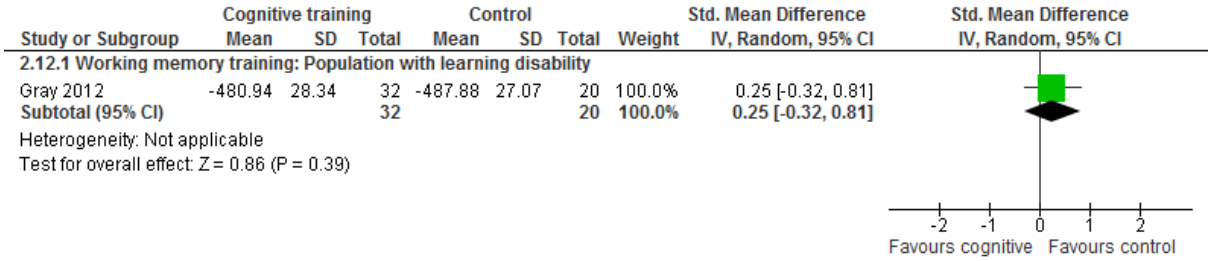


Figure 9.19 Spelling ability for computerised cognitive training compared with control in populations with learning disability

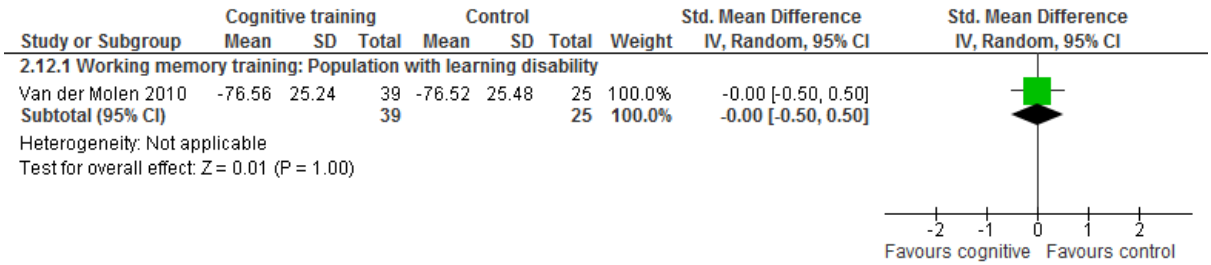


Figure 9.20 Maths ability for computerised cognitive training compared with control in populations with learning disability at 10 week follow-up

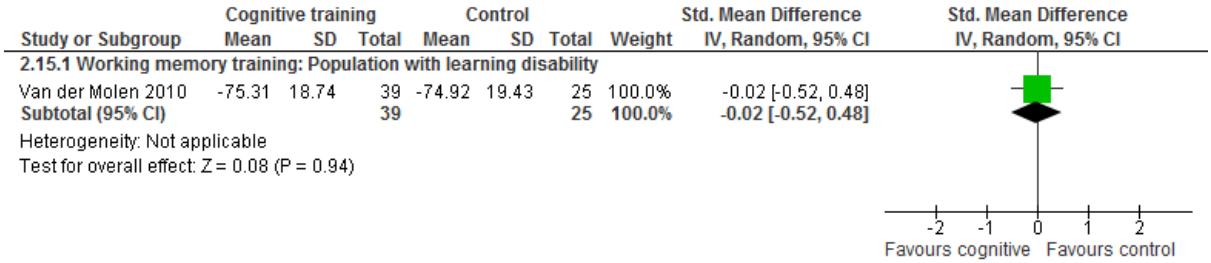


Figure 9.21 Reading ability for computerised cognitive training compared with control in populations with learning disability at 10 week follow-up

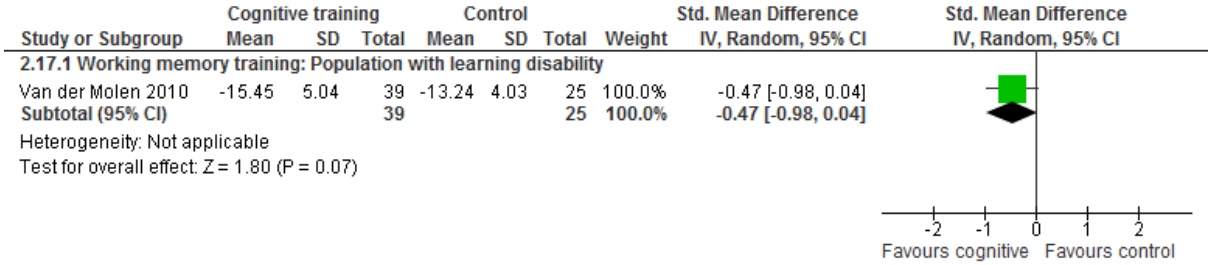


Figure 9.22 Comprehension ability for computerised cognitive training compared with control in populations with learning disability at 10 week follow-up

10 CONDUCT DISORDER

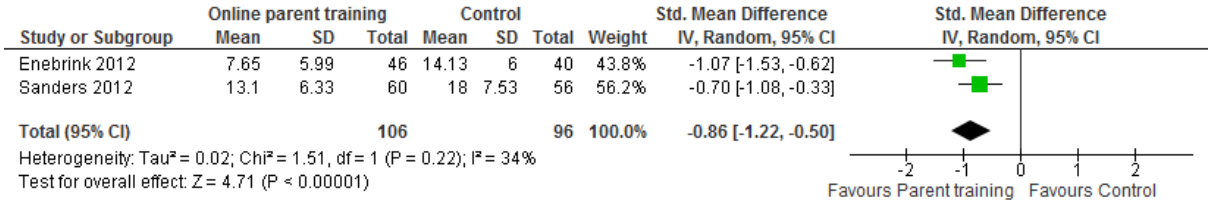


Figure 10.1 Parent-rated number of behaviours viewed as problematic for online parent training compared with control

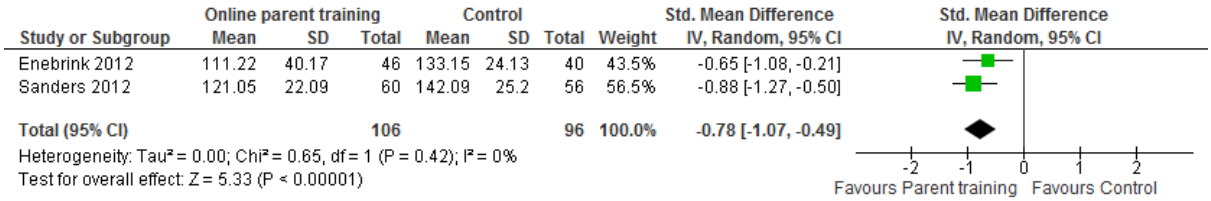


Figure 10.2 Parent-rated frequency of problem for online parent training compared with control

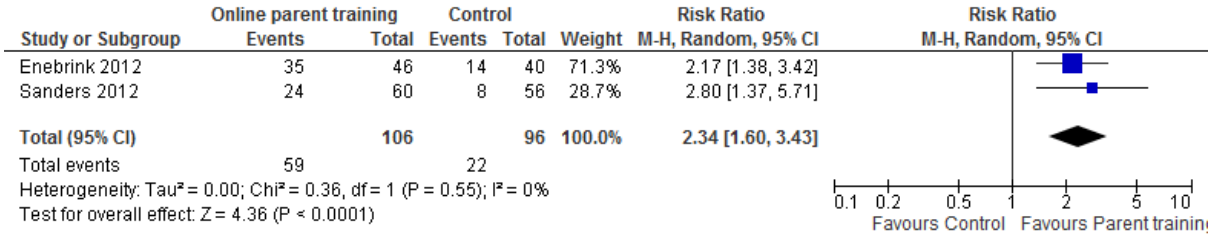


Figure 10.3Parent-assessed remission from problem behaviours for online parent training compared with control

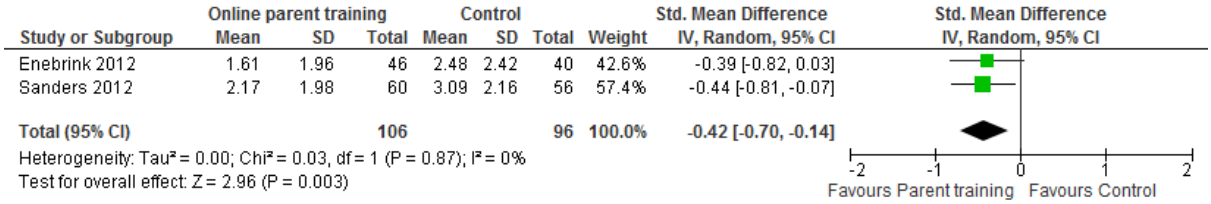


Figure 10.4 Parent-rated emotional problems for online parent training compared with control

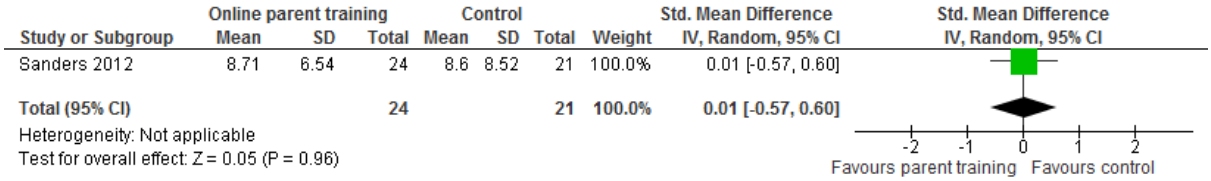


Figure 10.5 Clinician-rated child behaviour during family observation for online parent training compared with control

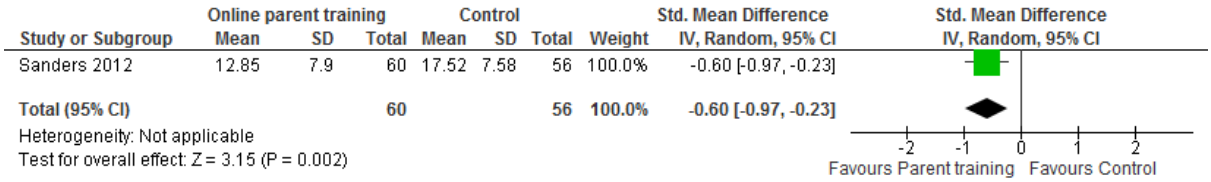


Figure 10.6 Parent-rated number of behaviours viewed as problematic for online parent training compared with control at 6 month follow-up

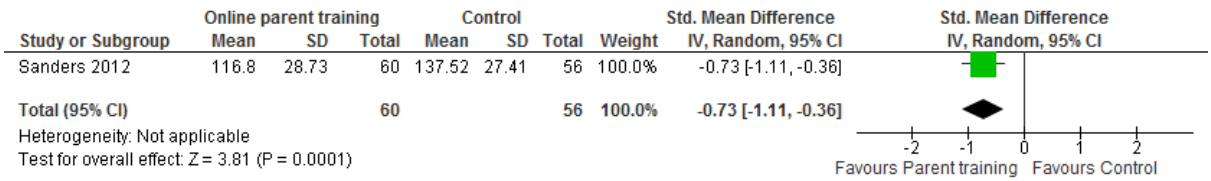


Figure 10.7 Parent-rated frequency of problem for online parent training compared with control at 6 month follow-up

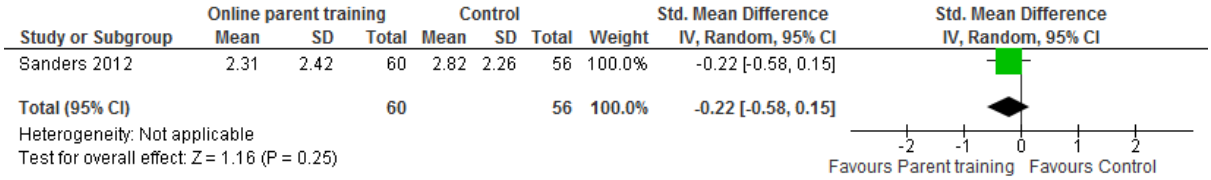


Figure 10.8 Parent-rated emotional problems for online parent training compared with control at 6 month follow-up

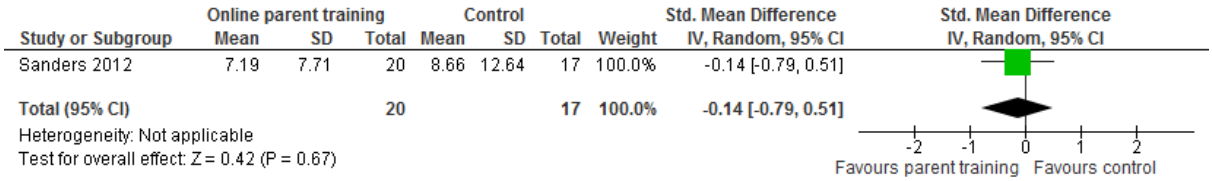


Figure 10.9 Clinician-rated child behaviour during family observation for online parent training compared with control at 6 month follow-up

11 SUBSTANCE MISUSE

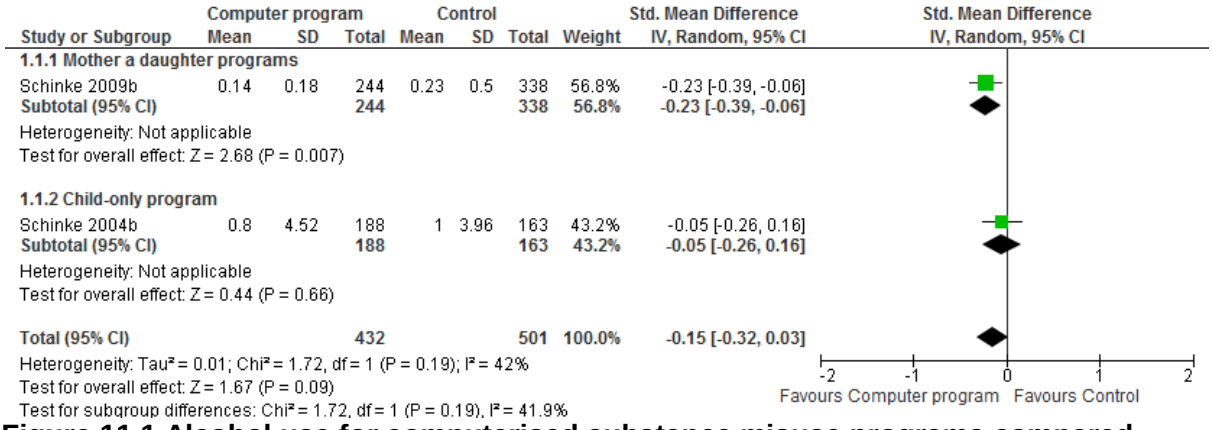


Figure 11.1 Alcohol use for computerised substance misuse programs compared with control at post-treatment

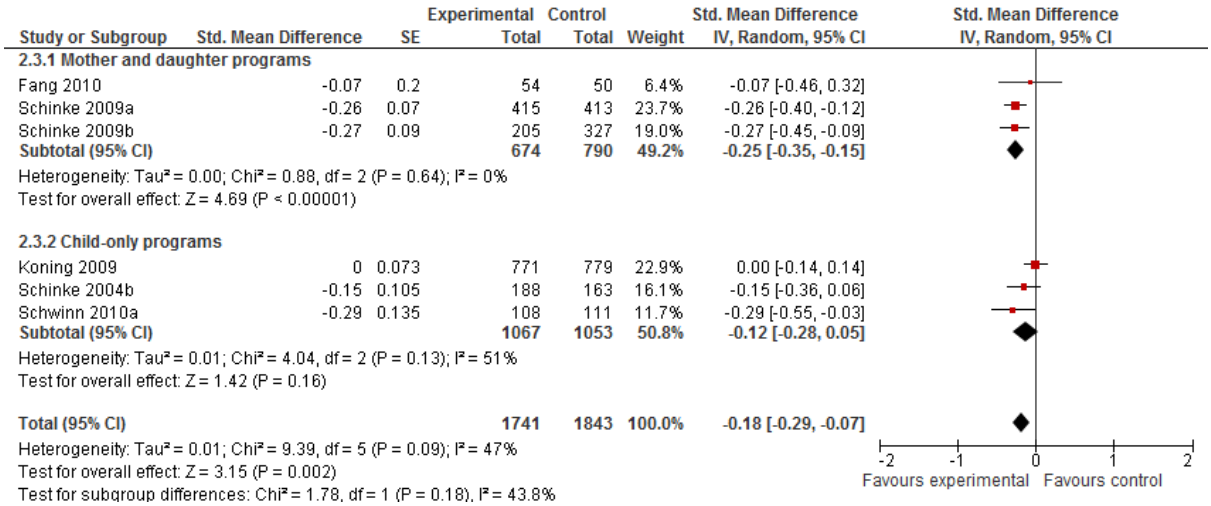


Figure 11.2 Alcohol use for computerised substance misuse programs compared with control at 6 month to 1 year follow-up

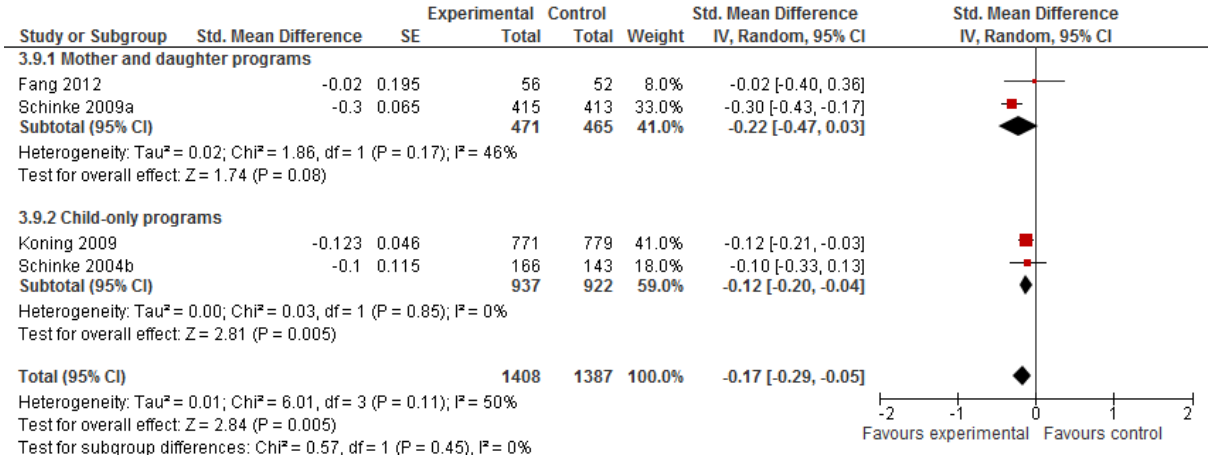


Figure 11.3 Alcohol use for computerised substance misuse programs compared with control at 2 year follow-up

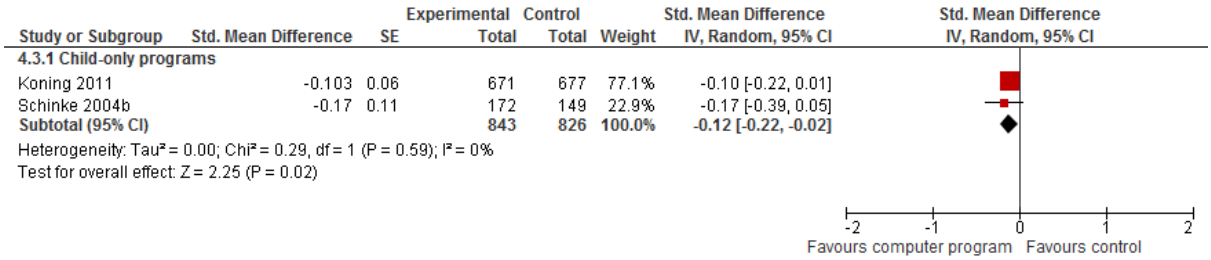


Figure 11.4 Alcohol use for computerised substance misuse programs compared with control at 3 year follow-up

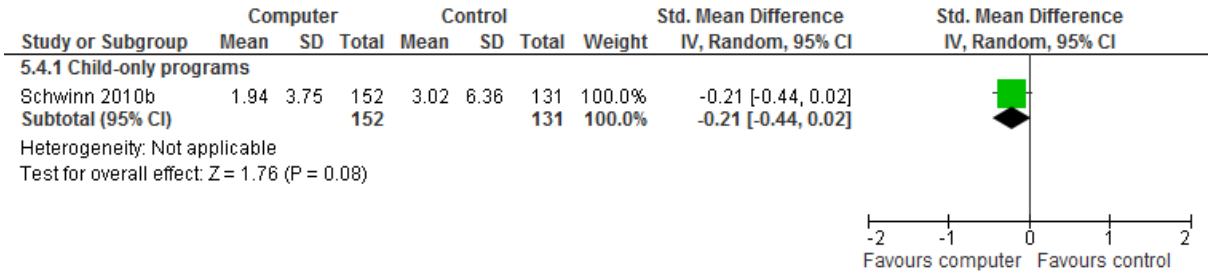


Figure 11.5 Alcohol use for computerised substance misuse programs compared with control at 6 year follow-up

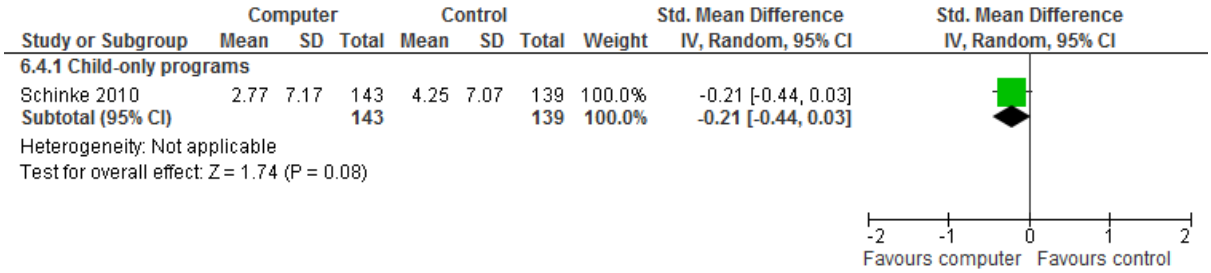


Figure 11.6 Alcohol use for computerised substance misuse programs compared with control at 7 year follow-up

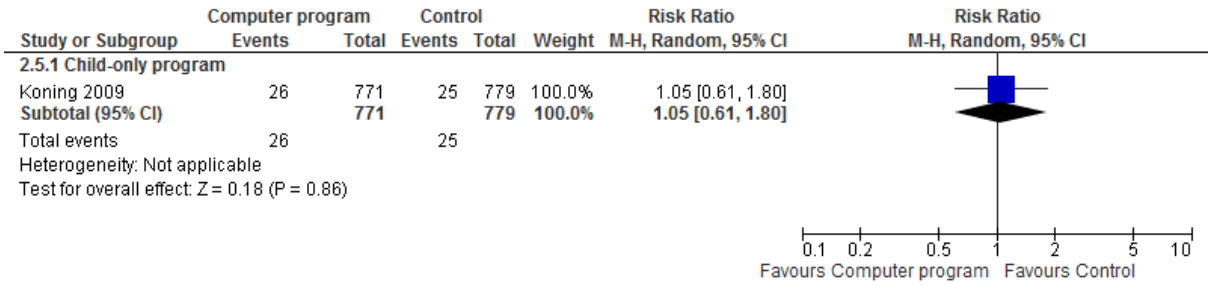


Figure 11.7 Proportion of participants reporting heavy alcohol use for computerised substance misuse programs compared with control at 1 year follow-up

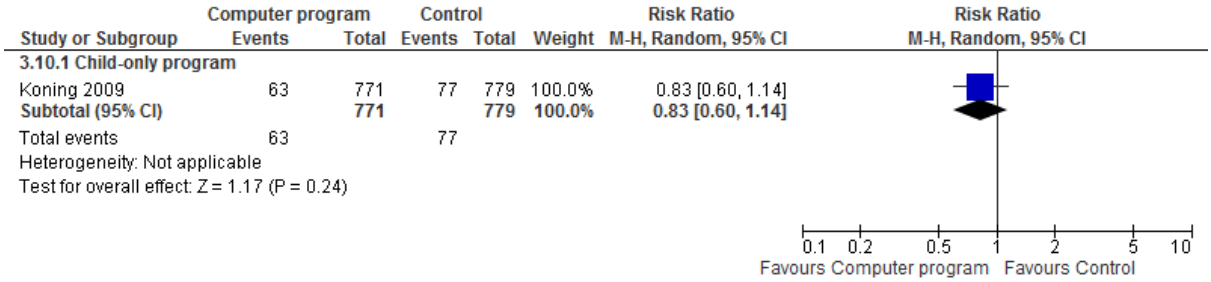


Figure 11.8 Proportion of participants reporting heavy alcohol use for computerised substance misuse programs compared with control at 2 year follow-up

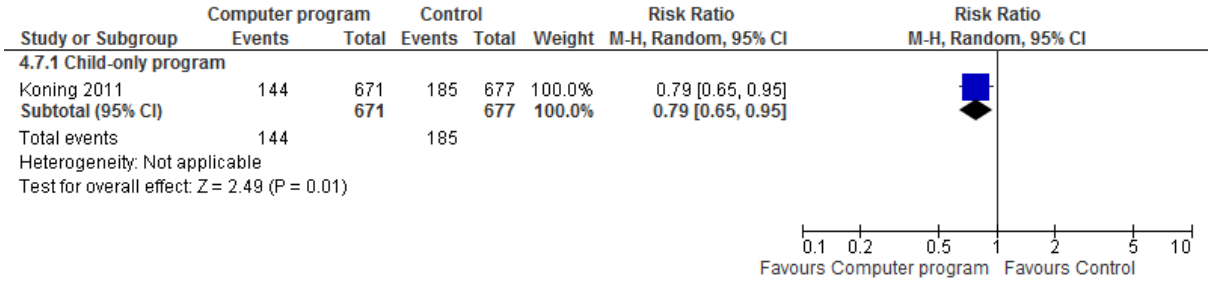


Figure 11.9 Proportion of participants reporting heavy alcohol use for computerised substance misuse programs compared with control at 3 year follow-up

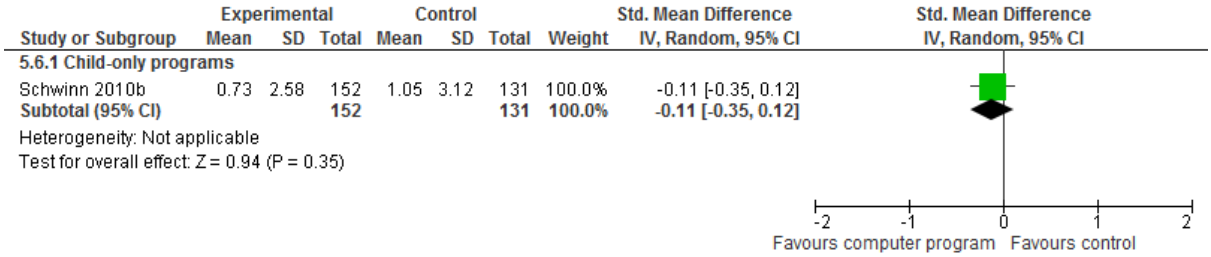


Figure 11.10 Number of alcohol binges (>5 drinks per day) for computerised substance misuse programs compared with control at 6 year follow-up

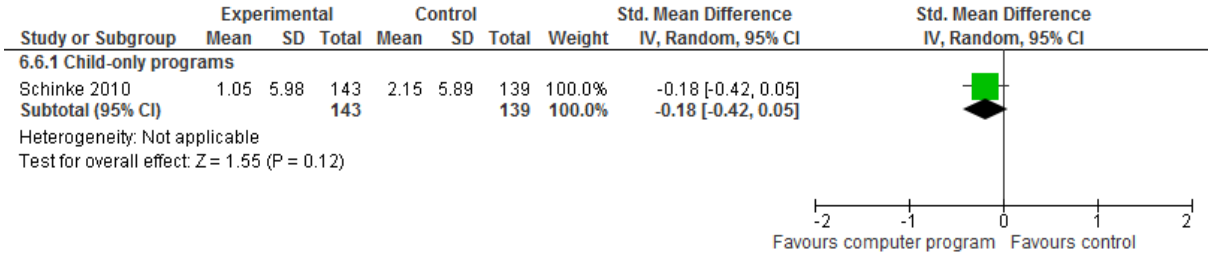


Figure 11.11 Number of alcohol binges (>5 drinks per day) for computerised substance misuse programs compared with control at 7 year follow-up

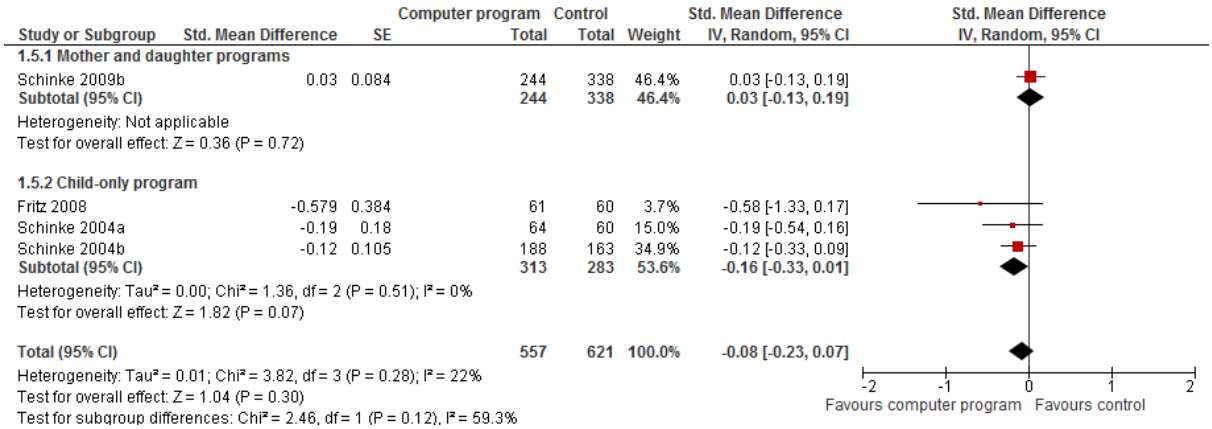


Figure 11.12 Cigarette use for computerised substance misuse programs compared with control at post-treatment

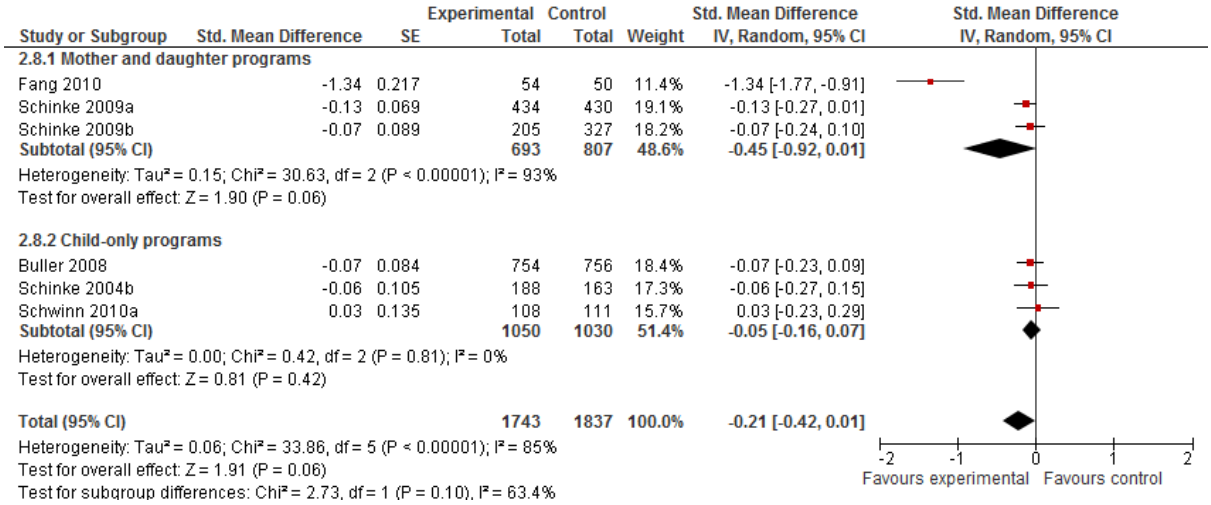


Figure 11.13 Cigarette use for computerised substance misuse programs compared with control at 6 month to 1 year follow-up

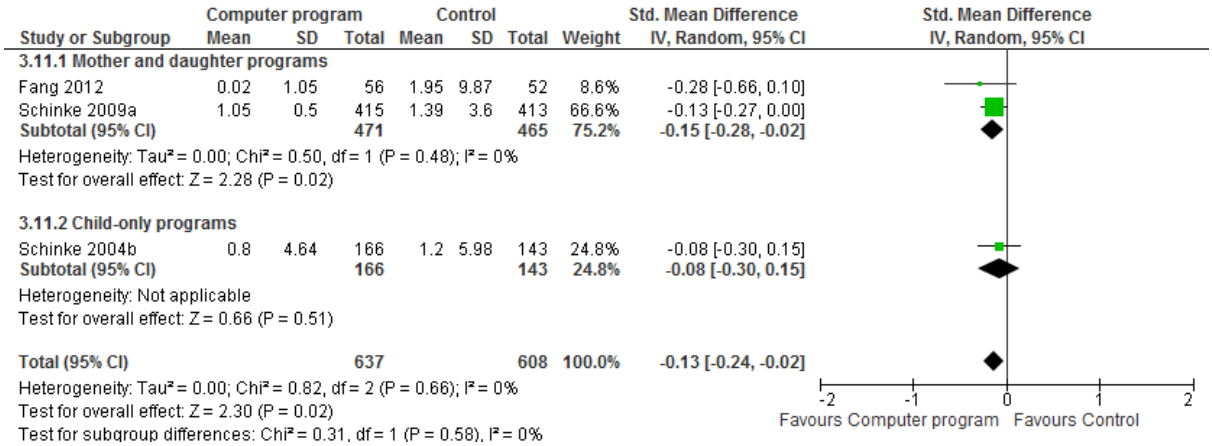


Figure 11.14 Cigarette use for computerised substance misuse programs compared with control at 2 year follow-up

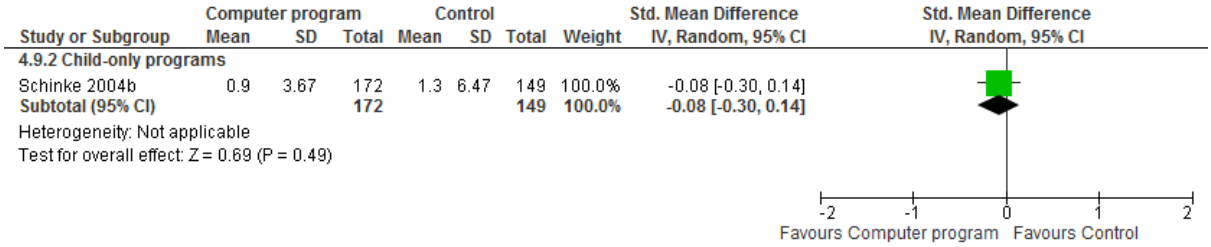


Figure 11.15 Cigarette use for computerised substance misuse programs compared with control at 3 year follow-up

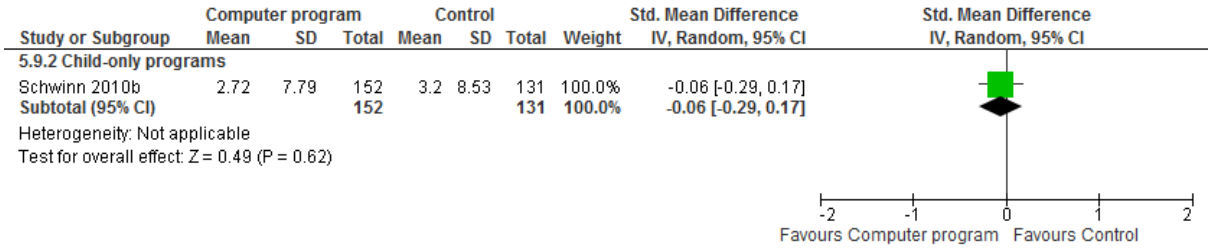


Figure 11.16 Cigarette use for computerised substance misuse programs compared with control at 6 year follow-up

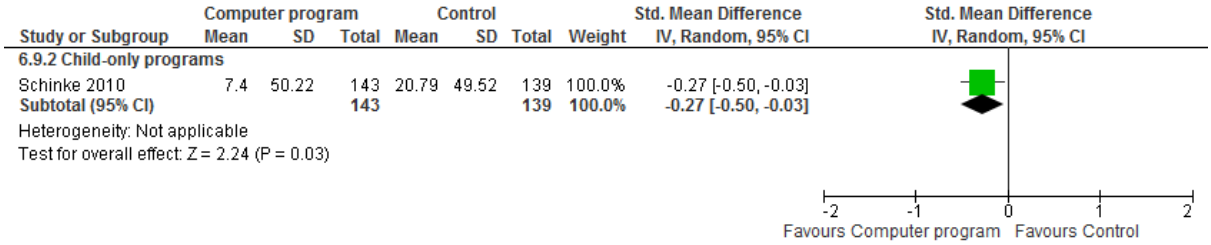


Figure 11.17 Cigarette use for computerised substance misuse programs compared with control at 7 year follow-up

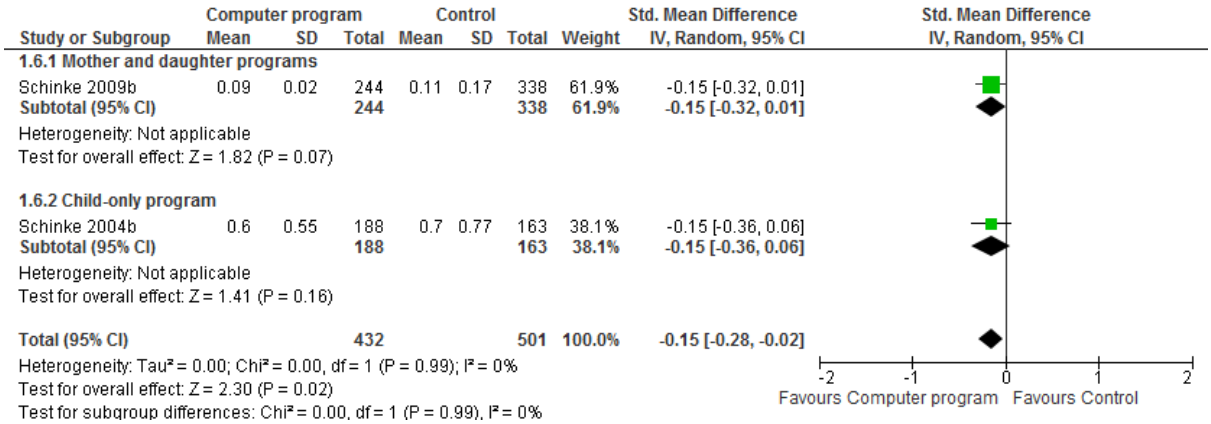


Figure 11.18 Marijuana use for computerised substance misuse programs compared with control at post-treatment

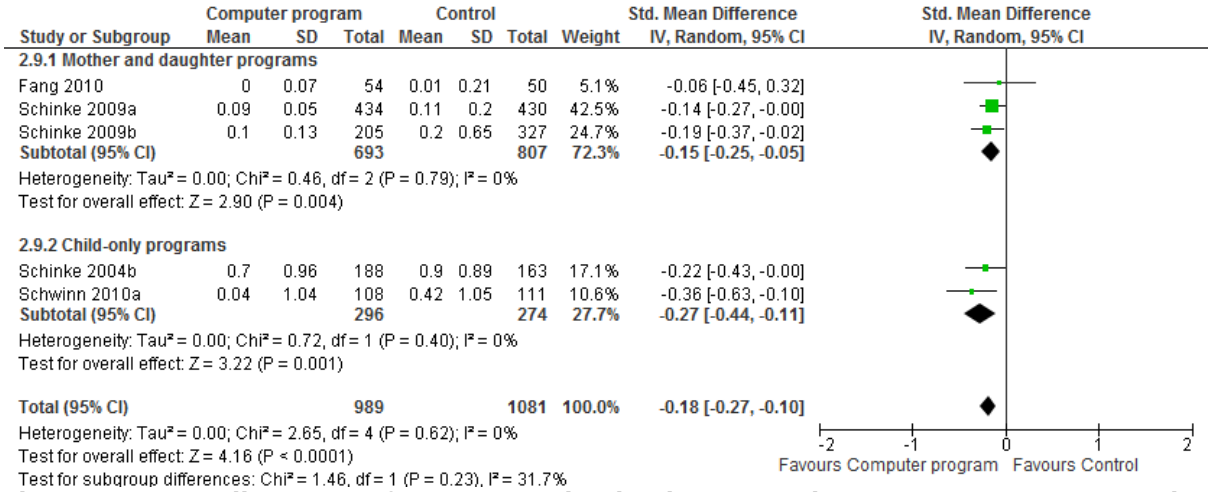


Figure 11.19 Marijuana use for computerised substance misuse programs compared with control at six months to 1 year follow-up

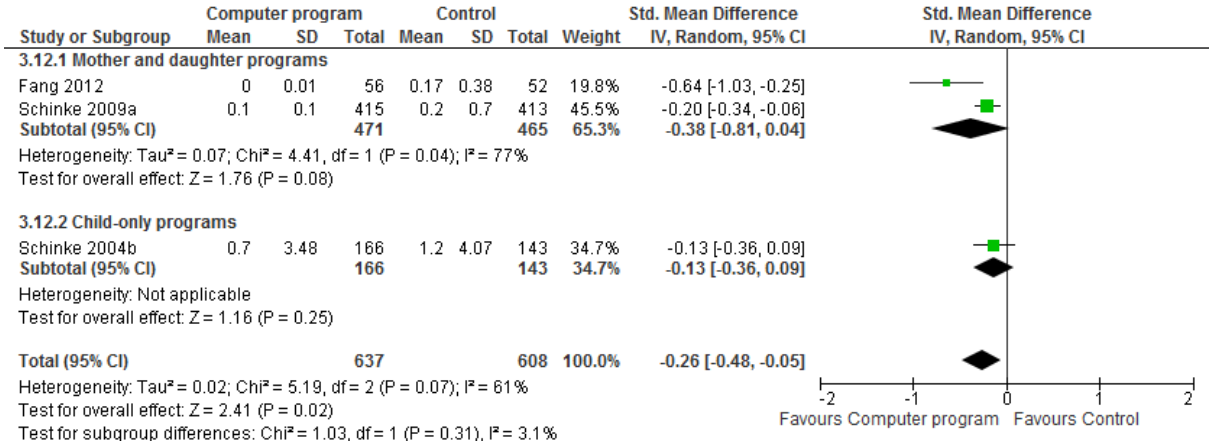


Figure 11.20 Marijuana use for computerised substance misuse programs compared with control at 2 year follow-up

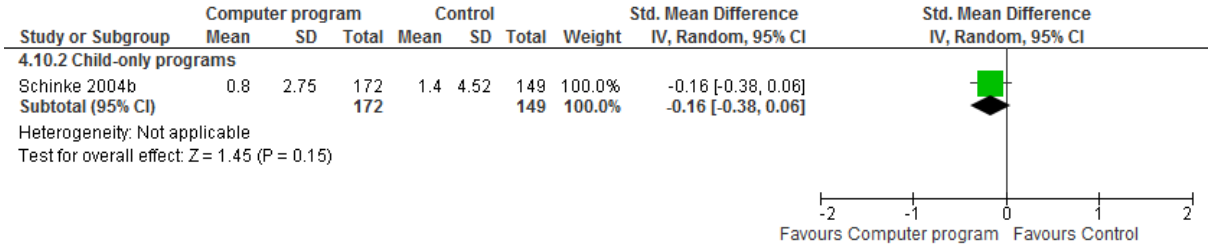


Figure 11.21 Marijuana use for computerised substance misuse programs compared with control at 3 year follow-up

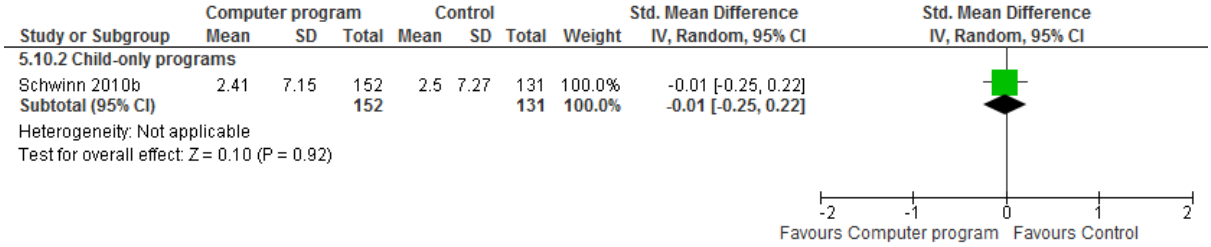


Figure 11.22 Marijuana use for computerised substance misuse programs compared with control at 6 year follow-up

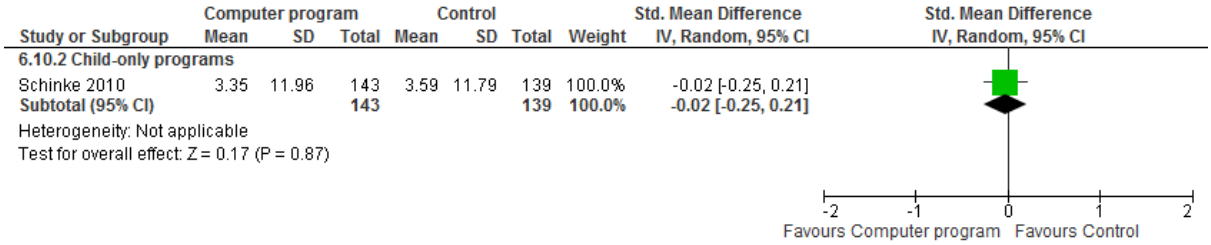


Figure 11.23 Marijuana use for computerised substance misuse programs compared with control at 7 year follow-up

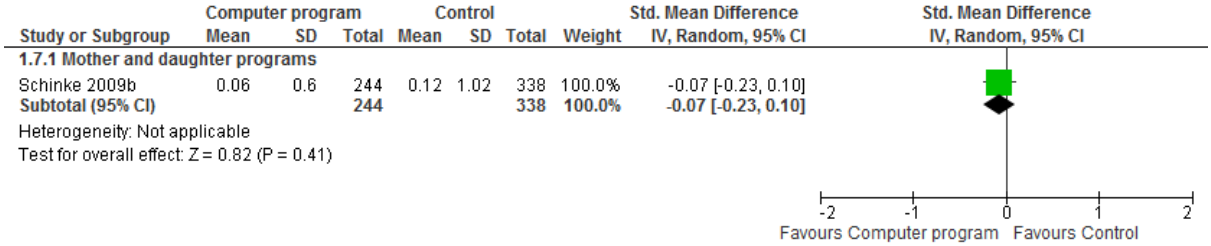


Figure 11.24 Illicit prescription use for computerised substance misuse programs compared with control at post-treatment

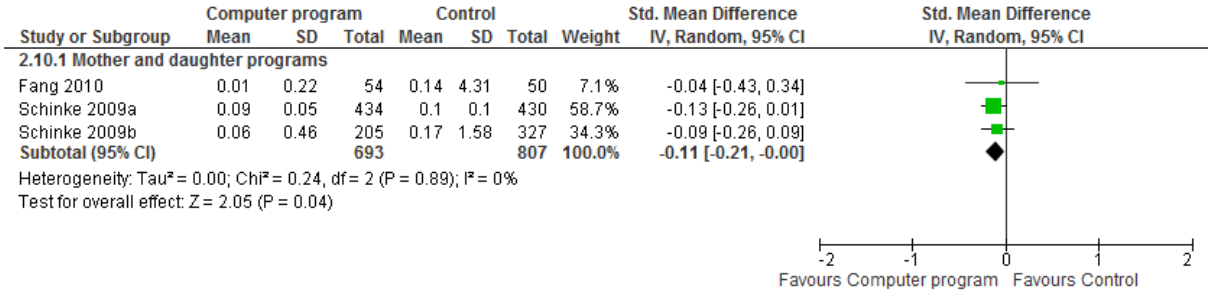


Figure 11.25 Illicit prescription use for computerised substance misuse programs compared with control at 1 year follow-up

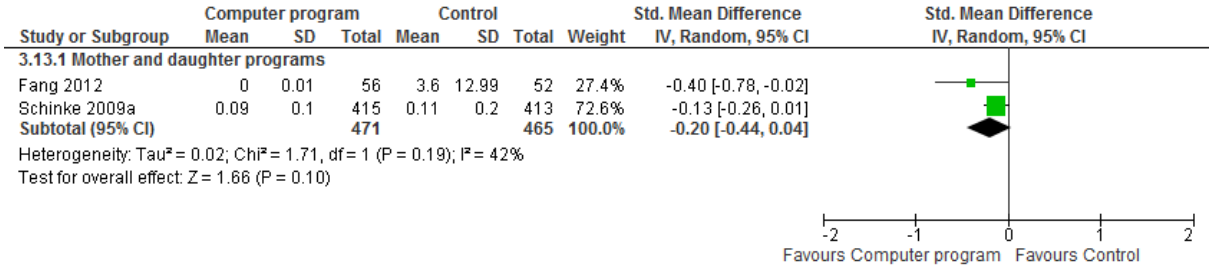


Figure 11.26 Illicit prescription use for computerised substance misuse programs compared with control at 2 year follow-up

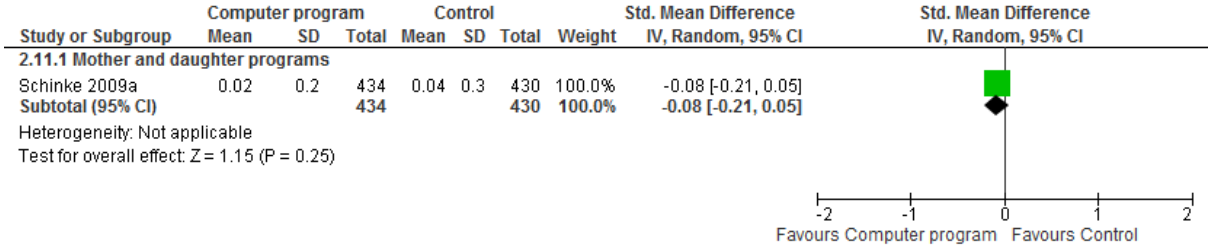


Figure 11.27 Inhalant use for computerised substance misuse programs compared with control at 1 year follow-up

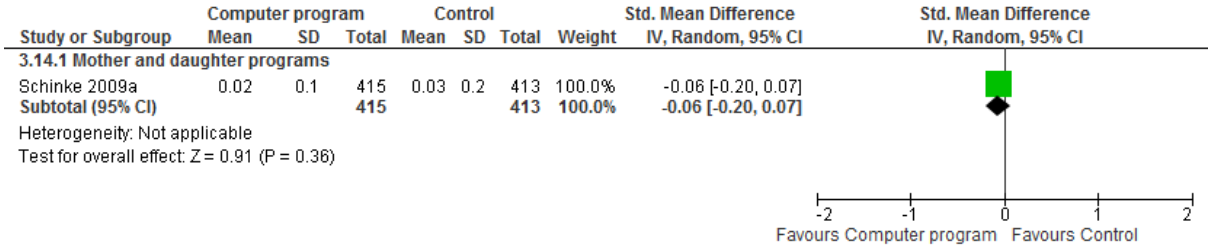


Figure 11.28 Inhalant use for computerised substance misuse programs compared with control at 2 year follow-up

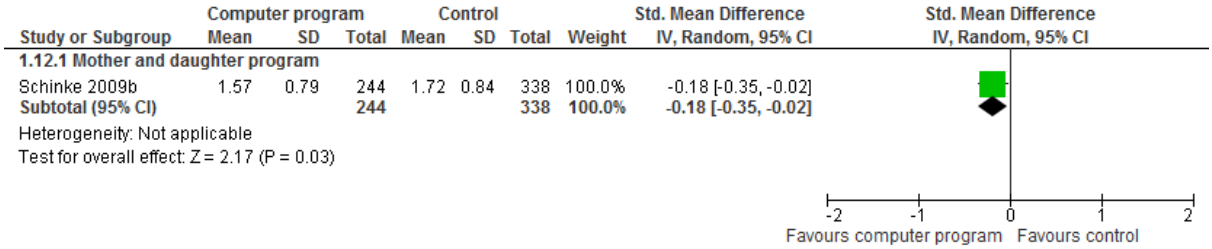


Figure 11.29 Depression for computerised substance misuse programs compared with control at post-treatment

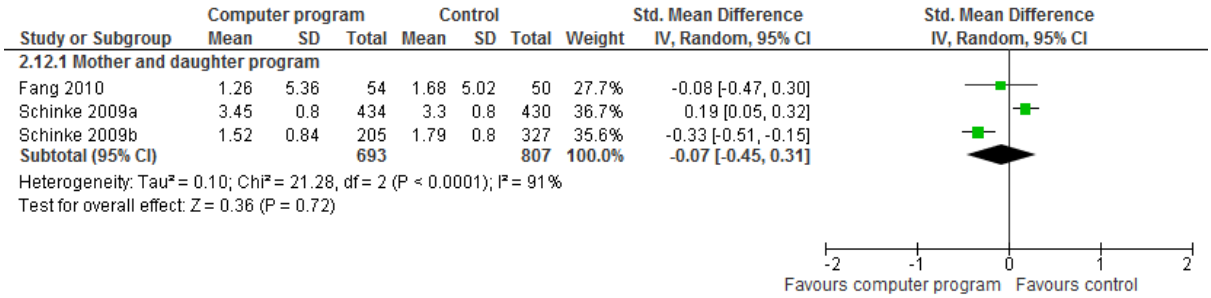


Figure 11.30 Depression for computerised substance misuse programs compared with control at 1 year follow-up

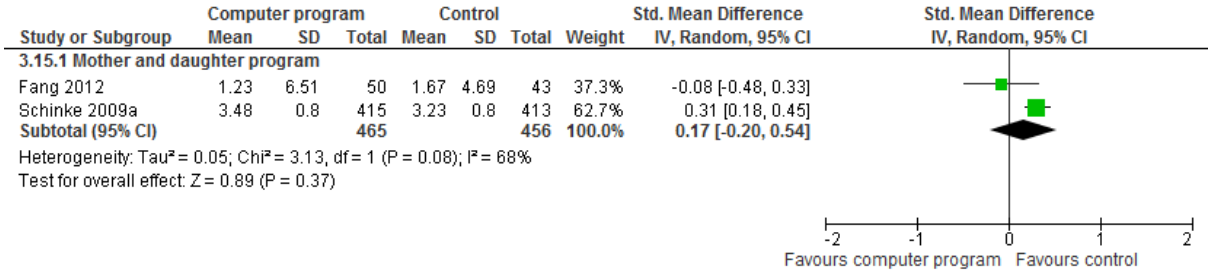


Figure 11.31 Depression for computerised substance misuse programs compared with control at 2 year follow-up

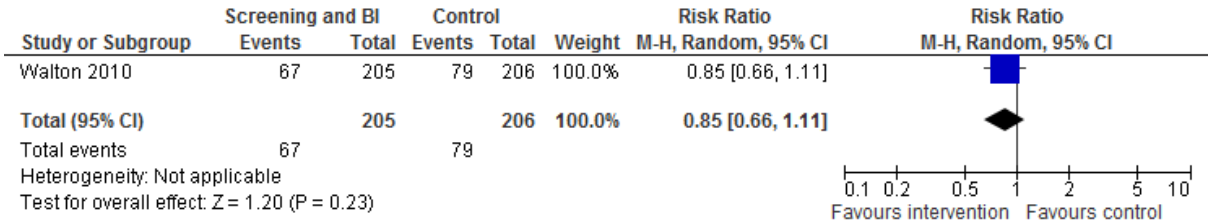


Figure 11.32 Presence of an alcohol use disorder for screening and brief intervention program compared with control at 3 month follow-up

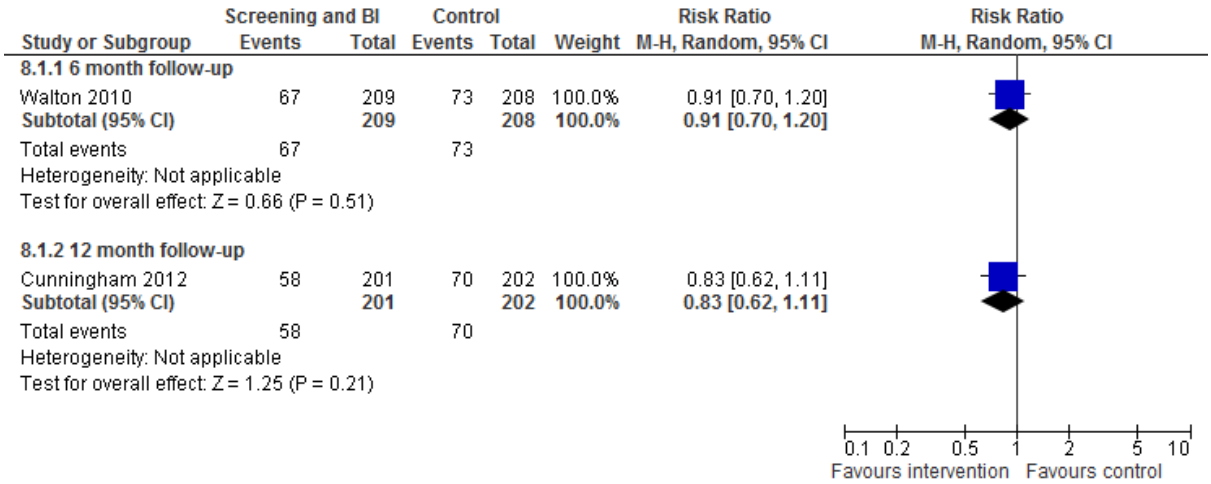


Figure 11.33 Presence of an alcohol use disorder for screening and brief intervention program compared with control at 6 and 12 month follow-up

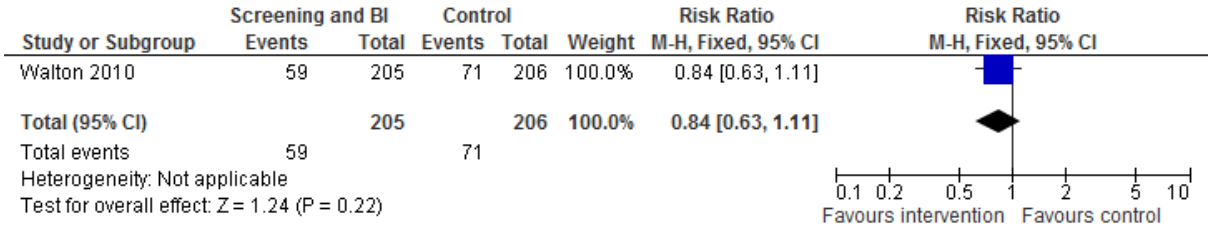


Figure 11.34 Presence of binge drinking (>5 drinks on one occasion) for screening and brief intervention program compared with control at 3 month follow-up

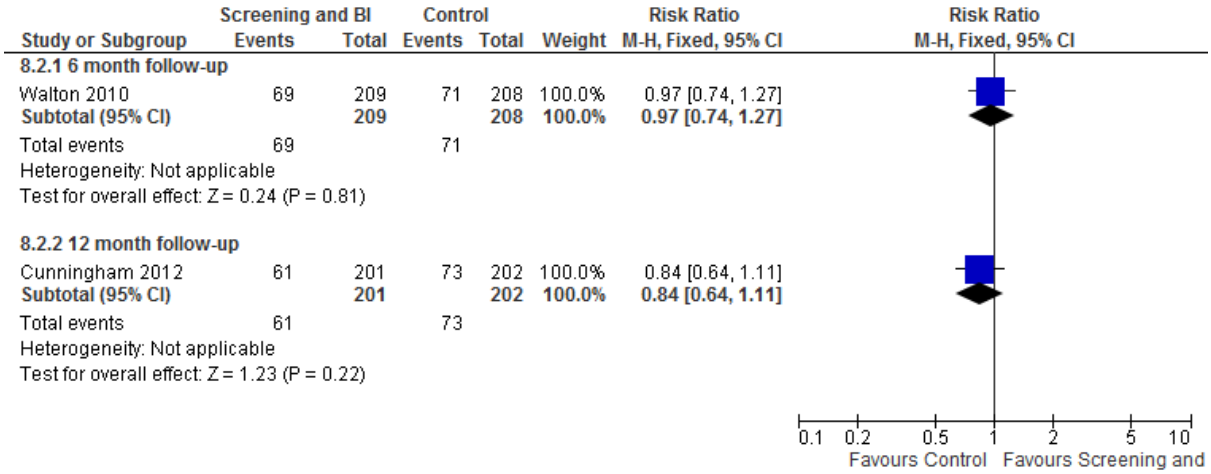


Figure 11.35 Presence of binge drinking (>5 drinks on one occasion) for screening and brief intervention program compared with control at 6 and 12 month follow-up

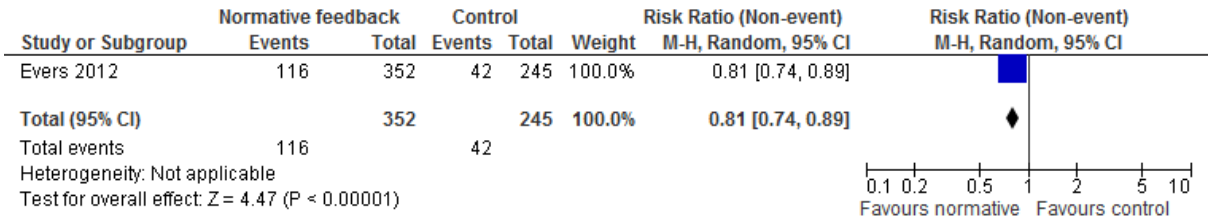


Figure 11.36 Rates of remission for computerised normative feedback program compared with control at post-treatment

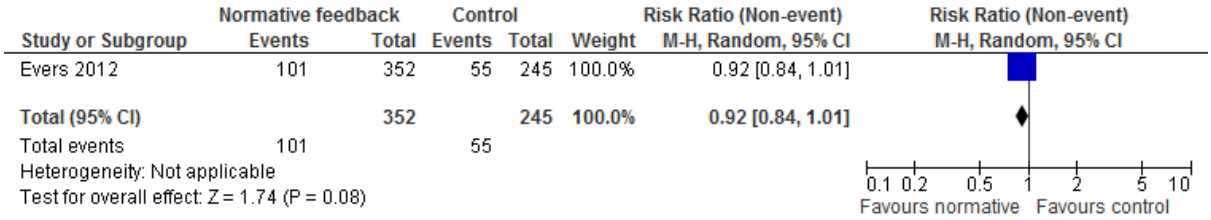


Figure 11.37 Rates of remission from any substance use for computerised normative feedback program compared with control at 14 month follow-up

12 AUTISM

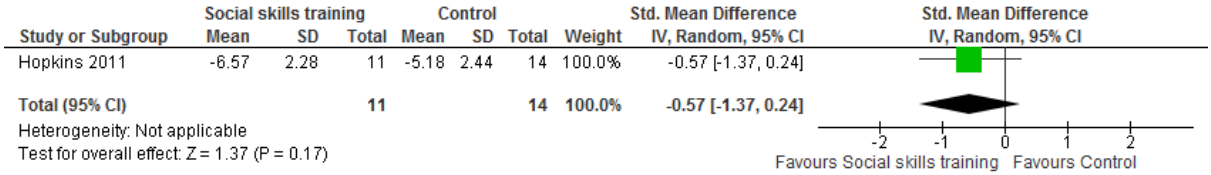


Figure 12.1 Emotion recognition for computer-based social skills training program compared with control in children with low-functioning autism

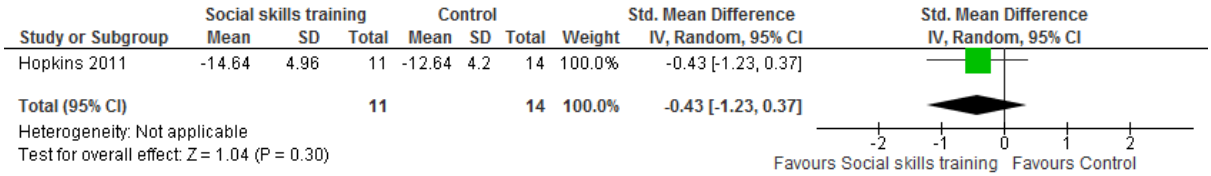


Figure 12.2 Facial recognition for computer-based social skills training program compared with control in children with low-functioning autism

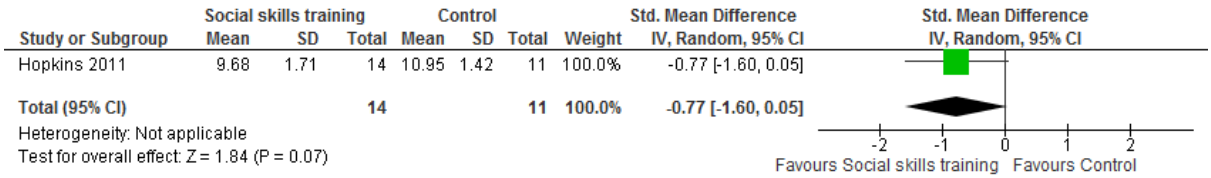


Figure 12.3 Researcher-rated social skills for computer-based social skills training program compared with control in children with low-functioning autism

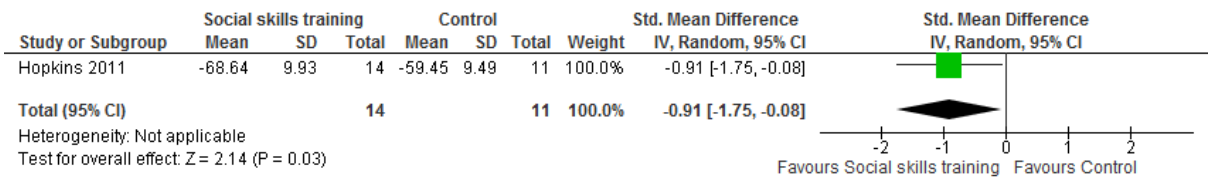


Figure 12.4 Parent-rated social skills for computer-based social skills training program compared with control in children with low-functioning autism

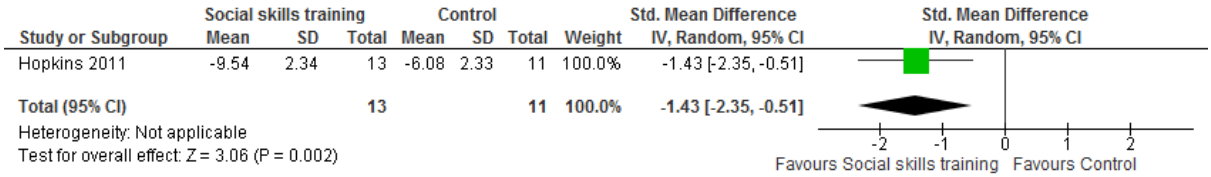


Figure 12.5 Emotion recognition for computer-based social skills training program compared with control in children with high-functioning autism

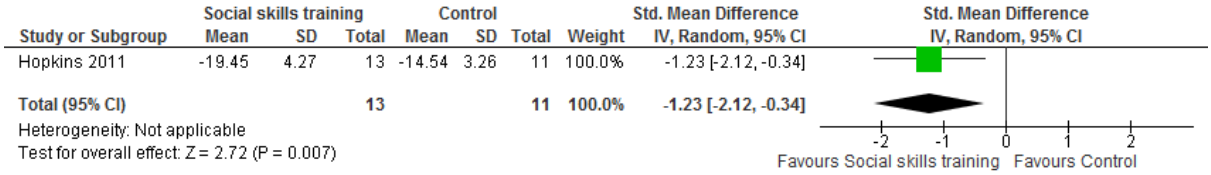


Figure 12.6 Facial recognition for computer-based social skills training program compared with control in children with high-functioning autism

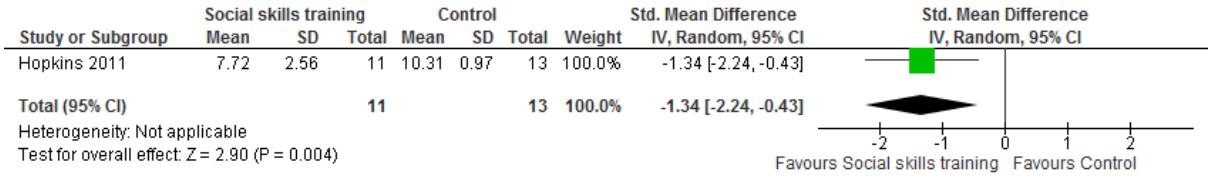


Figure 12.7 Researcher-rated social skills for computer-based social skills training program compared with control in children with high-functioning autism

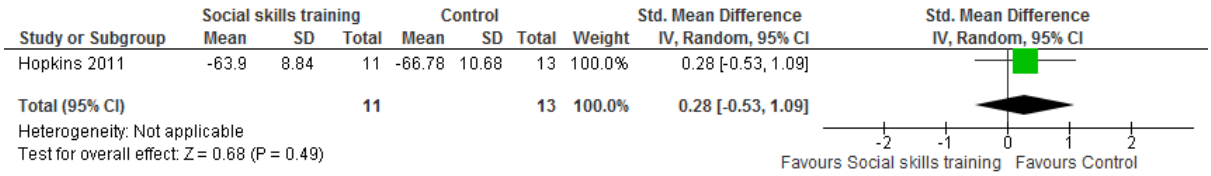


Figure 12.8 Parent-rated social skills for computer-based social skills training program compared with control in children with high-functioning autism

13 TOURETTE SYNDROME

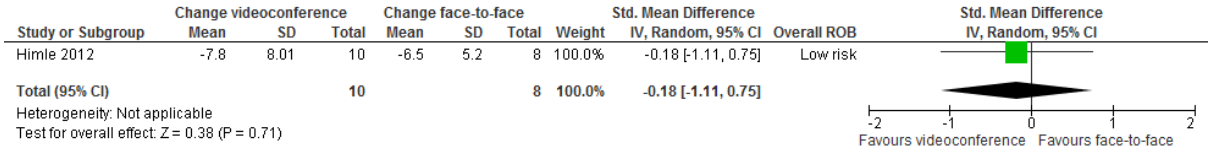


Figure 13.1 Total tic score for video conference CBIT compared with face-to-face CBIT for Tourette syndrome

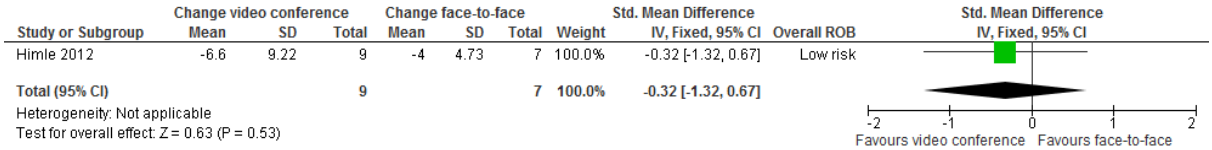


Figure 13.2 Total tic score for video conference CBIT compared with face-to-face CBIT for Tourette syndrome at four month follow-up

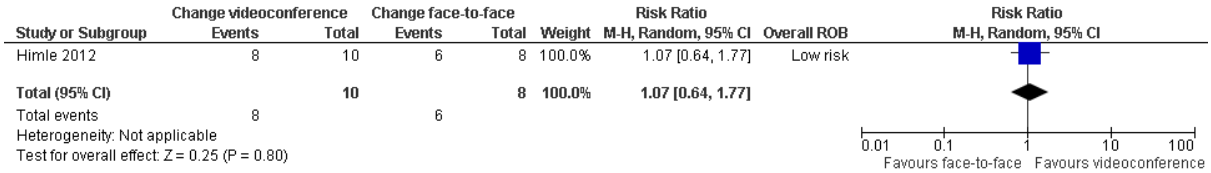


Figure 13.3 Proportion of children with clinical global impression much or very much improved for video conference CBIT compared with face-to-face CBIT for Tourette syndrome

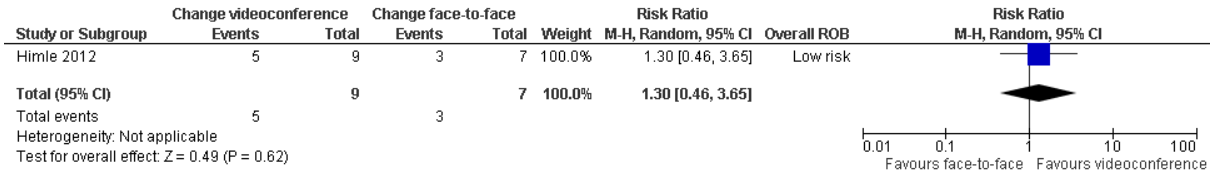


Figure 13.4 Proportion of children with clinical global impression much or very much improved for video conference CBIT compared with face-to-face CBIT for Tourette syndrome at four month follow-up

14 PSYCHOSIS

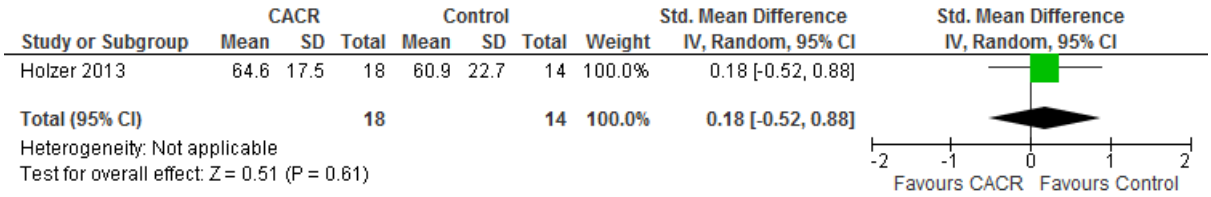


Figure 14.1 Total symptoms of schizophrenia at post-treatment, for computer-assisted cognitive remediation therapy (CACR) compared with computer games control, for individuals who have a diagnosis of psychosis or are at high risk of psychosis

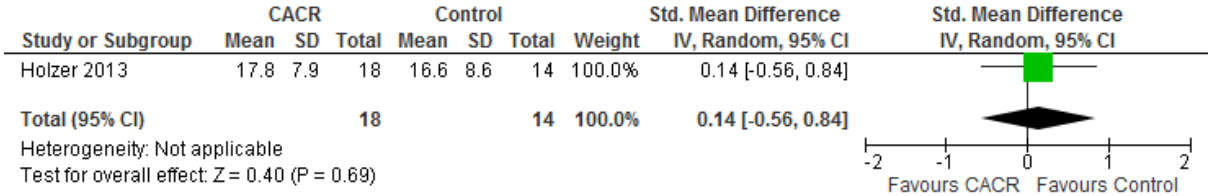


Figure 14.2 Negative symptoms of schizophrenia at post-treatment, for computer-assisted cognitive remediation therapy (CACR) compared with computer games control, for individuals who have a diagnosis of psychosis or are at high risk of psychosis

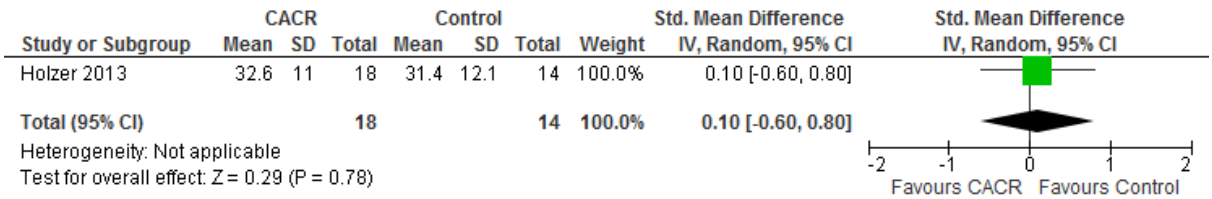


Figure 14.3 Global psychopathology at post-treatment, for computer-assisted cognitive remediation therapy (CACR) compared with computer games control, for individuals who have a diagnosis of psychosis or are at high risk of psychosis

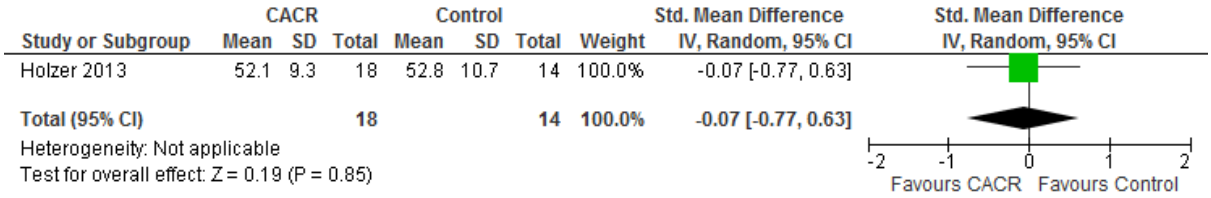


Figure 14.4 Psychosocial functioning at post-treatment, for computer-assisted cognitive remediation therapy (CACR) compared with computer games control, for individuals who have a diagnosis of psychosis or are at high risk of psychosis

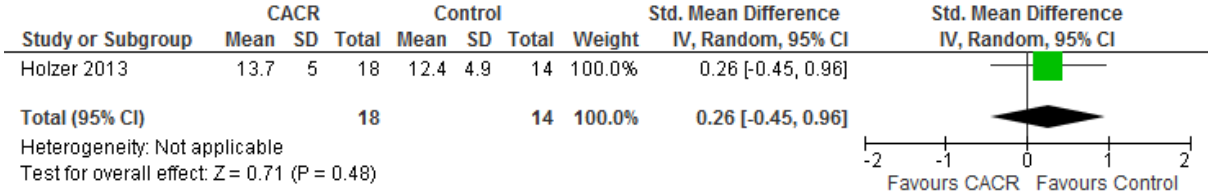


Figure 14.5 Positive symptoms of schizophrenia at post-treatment, for computer-assisted cognitive remediation therapy (CACR) compared with computer games control, for individuals who have a diagnosis of psychosis or are at high risk of psychosis

APPENDIX 12: GRADE EVIDENCE PROFILES

4 ANXIETY AND DEPRESSION

Table 4.1: cCBT for anxiety in young people and young adults versus control at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	CCBT for anxiety	Control PT	Relative (95% CI)	Absolute		
Anxiety (self-rated) - BRAVE for Teenagers-ONLINE (follow-up mean 12 weeks; measured with: SCAS-C; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1,2]	serious[3]	none	44	27	-	SMD 0.08 higher (0.4 lower to 0.56 higher)	⊕⊕OO LOW	CRITICAL
Anxiety (self-rated) - Cool Teens (follow-up mean 12 weeks; measured with: ADIS-C/P; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1,2]	serious[3]	none	24	19	-	SMD 0.73 lower (1.35 to 0.11 lower)	⊕⊕OO LOW	CRITICAL
Anxiety (self-rated) - MoodGYM depressed/anxious population (follow-up 3-5 weeks; measured with: DASS-21; Better indicated by lower values)												
3	randomised trials	no serious risk of bias	no serious inconsistency	serious[2,4]	serious[3]	none	45	46	-	SMD 1.42 lower (2.04 to 0.81 lower)	⊕⊕OO LOW	CRITICAL
Anxiety (self-rated) - MoodGYM general population (follow-up mean 5 weeks; measured with: RCMAS (Revised Children's Manifest Anxiety Scale); Better indicated by lower values)												
1	randomised trials	no serious risk of bias[5]	no serious inconsistency	serious[1]	no serious imprecision	none	473	800	-	SMD 0.15 lower (0.26 to 0.03 lower)	⊕⊕⊕O MODERATE	CRITICAL

Anxiety (self-rated) - Think Feel Do (follow-up mean 6 weeks; measured with: SCAS-C; Better indicated by lower values)												
1	randomised trials	serious[6]	no serious inconsistency	no serious indirectness[1,2]	serious[3]	none	6	9	-	SMD 0.15 higher (0.88 lower to 1.19 higher)	⊕⊕OO LOW	CRITICAL
Anxiety (clinician-rated) - BRAVE for teenagers - ONLINE (follow-up mean 12 weeks; measured with: ADIS-C/P; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1,2]	serious[3]	none	44	27	-	SMD 0.94 lower (1.44 to 0.43 lower)	⊕⊕OO LOW	CRITICAL
Anxiety (clinician-rated) - Cool Teens (measured with: ADIS-C/P; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1,2]	serious[3]	none	24	19	-	SMD 1.35 lower (2.02 to 0.68 lower)	⊕⊕OO LOW	CRITICAL
Remission Anxiety (clinician-rated) - BRAVE for teenagers-ONLINE (follow-up mean 12 weeks; assessed with: ADIS-C/P)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1,2]	serious[3]	none	8/44 (18.2%)	1/27 (3.7%)	RR 4.91 (0.65 to 37.11)	145 more per 1000 (from 13 fewer to 1000 more)	⊕⊕OO LOW	CRITICAL
								3.7%		145 more per 1000 (from 13 fewer to 1000 more)		
Global functioning - BRAVE for teenagers - ONLINE (follow-up mean 12 weeks; measured with: Children's global assessment scale (C-GAS); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1,2]	serious[3]	none	44	27	-	SMD 0.77 lower (1.27 to 0.28 lower)	⊕⊕OO LOW	CRITICAL
Global functioning - Cool teens (self-rated) (follow-up mean 12 weeks; measured with: Adolescent life interference scale; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1,2]	serious[3]	none	24	19	-	SMD 0.64 lower (1.26 to 0.02 lower)	⊕⊕OO LOW	CRITICAL

[1] Waitlist control
[2] Some additional therapist input
[3] Sample size does not reach optimal information size
[4] High additional therapist input

[5] Cluster randomised. Contributed to downgrading for indirectness
[6] High attrition. Contributed to grading down for indirectness

Table 4.2: cCBT for anxiety in young people and young adults versus control at follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	CCBT for anxiety	Control FU	Relative (95% CI)	Absolute		
Anxiety (self-reported) - MoodGYM general population (follow-up mean 6 months; measured with: RCMAS (Revised Children's Manifest Anxiety Scale); Better indicated by lower values)												
1	randomised trials	no serious risk of bias[1]	no serious inconsistency	serious[2]	no serious imprecision	none	455	734	-	SMD 0.25 lower (0.37 to 0.13 lower)	⊕⊕⊕O MODERATE	CRITICAL

[1] Cluster randomised. Contributed to downgrading for indirectness
[2] Waitlist control

Table 4.3: cCBT for anxiety in young people and young adults versus face-to-face CBT at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	CCBT for anxiety	F2f therapy PT	Relative (95% CI)	Absolute		

Anxiety (self-rated) - Brave for teenagers-Online (follow-up mean 12 weeks; measured with: SCAS-C; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	44	44	-	SMD 0.22 lower (0.64 lower to 0.2 higher)	⊕⊕OO LOW	CRITICAL
Anxiety (self-rated) - MoodGYM (follow-up 3-5 weeks; measured with: DASS-21; Better indicated by lower values)												
2	randomised trials	no serious risk of bias	serious[3]	serious[1,4]	serious[2]	none	32	31	-	SMD 0.81 higher (0.39 lower to 2.01 higher)	⊕OOO VERY LOW	CRITICAL
Anxiety (clinician-rated) - Brave for teenagers-Online (follow-up mean 12 weeks; measured with: ADIS-C/P; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	44	44	-	SMD 0.13 lower (0.55 lower to 0.29 higher)	⊕⊕OO LOW	CRITICAL
Remission Anxiety (clinician-rated) - BRAVE for teenagers-Online (follow-up mean 12 weeks; assessed with: ADIS-C/P)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	8/44 (18.2%)	9/44 (20.5%)	RR 0.89 (0.38 to 2.09)	23 fewer per 1000 (from 127 fewer to 223 more)	⊕⊕OO LOW	CRITICAL
								20.5%		23 fewer per 1000 (from 127 fewer to 223 more)		
Global functioning (clinician-rated) - Brave for teenagers-Online (follow-up mean 12 weeks; measured with: Children's global assessment scale (C-GAS); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	44	44	-	SMD 0.16 higher (0.25 lower to 0.58 higher)	⊕⊕OO LOW	CRITICAL

[1] Some additional therapist input
[2] Sample size does not reach optimal information size
[3] I^2 78%
[4] High additional therapist input

Table 4.4: cCBT for anxiety in young people and young adults versus face-to-face CBT at follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	cCBT for anxiety	F2f therapy	Relative (95% CI)	Absolute		
Anxiety - 12m FU (self-rated) - Brave for teenagers-Online (follow-up mean 12 months; measured with: SCAS-C; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	44	44	-	SMD 0.14 higher (0.28 lower to 0.56 higher)	⊕⊕OO LOW	CRITICAL
Anxiety - 12m FU (clinician-rated) - Brave for teenagers-Online (follow-up mean 12 months; measured with: ADIS-C/P; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	44	44	-	SMD 0.07 higher (0.35 lower to 0.49 higher)	⊕⊕OO LOW	CRITICAL
Remission Anxiety (clinician-rated) - BRAVE for teenagers-ONLINE (follow-up mean 12 months; assessed with: ADIS-C/P)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	24/44 (54.5%)	26/44 (59.1%)	RR 0.92 (0.64 to 1.33)	47 fewer per 1000 (from 213 fewer to 195 more)	⊕⊕OO LOW	CRITICAL
								59.1%		47 fewer per 1000 (from 213 fewer to		

										195 more)		
Global functioning 12m FU (clinician-rated) - Brave for teenagers-Online (follow-up mean 12 months; measured with: Children's global assessment scale (C-GAS); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	44	44	-	SMD 0.04 lower (0.46 lower to 0.38 higher)	⊕⊕OO LOW	CRITICAL

[1] Some additional therapist input
[2] Sample size does not reach optimal information size

Table 4.5: cCBT for depression in young people and young adults versus control at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**CCBT for depression**	**Control PT**	**Relative (95% CI)**	**Absolute**		
Depression (self-rated) - The Journey (follow-up 4-10 weeks; measured with: Reynolds adolescent depression scale 2nd Ed; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious[1]	none	17	17	-	SMD 0 higher (0.67 lower to 0.67 higher)	⊕⊕OO LOW	CRITICAL
Depression (self-rated) - SPARX (follow-up mean 5 weeks; measured with: Reynolds adolescent depression scale; Better indicated by lower values)												
1	randomised trials	no serious risk of	no serious inconsistency	serious[2]	serious[1]	none	20	12	-	SMD 0.47 lower (1.2 lower to 0.25	⊕⊕OO LOW	CRITICAL

		bias								higher)		
Depression (self-rated) - Clarke 2009 (follow-up mean 32 weeks; measured with: PHQ-8; Better indicated by lower values)												
1	randomised trials	serious[3]	no serious inconsistency	no serious indirectness	serious[1]	none	56	53	-	SMD 0.31 lower (0.69 lower to 0.06 higher)	⊕⊕OO LOW	CRITICAL
Depression (self-rated) - MoodGYM depressed/anxious population (follow-up mean 3 weeks; measured with: DASS-21; Better indicated by lower values)												
2	randomised trials	no serious risk of bias	no serious inconsistency[4]	serious[5,6]	serious[1]	none	22	23	-	SMD 0.22 lower (0.81 lower to 0.36 higher)	⊕⊕OO LOW	CRITICAL
Depression (self-rated) - MoodGYM General population (follow-up 5 weeks; measured with: Center for epidemiologic scale - depression (CES-D); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[2]	no serious imprecision	none	475	805	-	SMD 0.15 lower (0.27 to 0.03 lower)	⊕⊕⊕O MODERATE	CRITICAL
Depression (self-rated) - Think Feel Do (follow-up mean 6 weeks; measured with: Adolescent well-being scale (AWS); Better indicated by lower values)												
1	randomised trials	no serious risk of bias[7]	no serious inconsistency	serious[2,5]	serious[1]	none	6	9	-	SMD 0.71 lower (1.79 lower to 0.36 higher)	⊕⊕OO LOW	CRITICAL
Depression (clinician-rated) - The Journey (follow-up 4-10 weeks; measured with: Child's depression rating scale - revised (CDRS-R); Better indicated by lower values)												
1	randomised trials	no serious risk of	no serious inconsistency	no serious indirectness	very serious[1]	none	17	17	-	SMD 0.52 lower (1.2 lower to 0.17	⊕⊕OO LOW	CRITICAL

		bias								higher)		
Depression (clinician-rated) - SPARX (follow-up mean 5 weeks; measured with: Child's depression rating scale - revised (CDRS-R); Better indicated by lower values)												
1	randomised trials	serious[8]	no serious inconsistency	serious[2]	serious[1]	none	19	11	-	SMD 2.13 lower (3.08 to 1.19 lower)	⊕OOO VERY LOW	CRITICAL
Remission from depression (clinician-rated) - SPARX (follow-up mean 5 weeks; assessed with: Child's depression rating scale - revised (CDRS-R))												
1	randomised trials	serious[8]	no serious inconsistency	serious[2]	serious[1]	none	15/20 (75%)	5/12 (41.7%)	RR 1.8 (0.88 to 3.68)	333 more per 1000 (from 50 fewer to 1000 more)	⊕OOO VERY LOW	CRITICAL
								1.7%		more per 1000 (from 50 fewer to 1000 more)		
Remission from depression (clinician-rated) - The Journey (follow-up mean 4-10 weeks; assessed with: Child's depression rating scale - revised (CDRS-R))												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious[1]	none	8/17 (47.1%)	6/17 (35.3%)	RR 1.33 (0.59 to 3.02)	116 more per 1000 (from 145 fewer to 713 more)	⊕⊕OO LOW	CRITICAL
								5.3%		more per 1000 (from 145 fewer to 713 more)		
Total side effects - SPARX (follow-up mean 5 weeks)												
1	randomised trials	serious[8]	no serious inconsistency	no serious indirectness	serious[1]	none	2/19 (10.5%)	4/11 (36.4%)	RR 0.29 (0.06 to 1.33)	258 fewer per 1000 (from 342 fewer to 120 more)	⊕⊕OO LOW	CRITICAL

								6.4%		fewer per 1000 (from 342 fewer to 120 more)		

[1] Sample size does not reach optimal information size
[2] Waitlist control
[3] High attrition and possible selective outcome reporting
[4] I^2 86%
[5] Some additional therapist input
[6] High additional therapist input
[7] High attrition. Contributed to grading down for indirectness
[8] Unclear outcome assessor blinding possible attrition bias

Table 4.6: cCBT for depression in young people and young adults versus control at follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**CCBT for depression**	**Control FU**	**Relative (95% CI)**	**Absolute**		
Depression (self-reported) - The Journey (follow-up mean 14 weeks; measured with: Reynolds adolescent depression scale 2nd Ed; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious[1]	none	17	17	-	SMD 0.3 higher (0.38 lower to 0.97 higher)	⊕⊕OO LOW	CRITICAL
Depression (self-reported) - MoodGYM general population (follow-up mean 6 months; measured with: Center for epidemiologic scale - depression (CES-D); Better indicated by lower values)												
1	randomised trials	serious[2]	no serious inconsistency	no serious indirectness	no serious imprecision	none	454	735	-	SMD 0.13 lower (0.24 to	⊕⊕⊕O MODERATE	CRITICAL

										0.01 lower)		
Depression (clinician-rated) - The Journey (follow-up mean 14 weeks; measured with: Child's depression rating scale - revised (CDRS-R); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious[1]	none	17	17	-	SMD 0.18 lower (0.85 lower to 0.5 higher)	⊕⊕OO LOW	CRITICAL
Remission from depression (clinician-rated) - The Journey (follow-up mean 14 weeks; assessed with: Child's depression rating scale - revised (CDRS-R))												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious[1]	none	8/17 (47.1%)	7/17 (41.2%)	RR 1.14 (0.53 to 2.44)	58 more per 1000 (from 194 fewer to 593 more)	⊕⊕OO LOW	CRITICAL
								1.2%		more per 1000 (from 194 fewer to 593 more)		

[1] Sample size does not reach optimal information size
[2] Cluster randomised

Table 4.7: cCBT for depression in young people and young adults versus face-to-face therapy (CBT or counselling) at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**CCBT for depression**	**F2f therapy PT**	**Relative (95% CI)**	**Absolute**		

Depression (self-rated) - SPARX (follow-up mean 7 weeks; measured with: Reynolds adolescent depression scale; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	94	93	-	SMD 0.23 lower (0.51 lower to 0.06 higher)	⊕⊕OO LOW	CRITICAL
Depression (self-rated) - MoodGYM (follow-up 3-5 weeks; measured with: DASS-21; Better indicated by lower values)												
2	randomised trials	no serious risk of bias	serious[3]	serious[4]	serious[2]	none	32	31	-	SMD 1.16 higher (0.78 lower to 3.09 higher)	⊕OOO VERY LOW	CRITICAL
Depression (clinician-rated) - SPARX (follow-up mean 7 weeks; measured with: Child's depression rating scale - revised (CDRS-R); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	94	93	-	SMD 0.11 lower (0.4 lower to 0.18 higher)	⊕⊕OO LOW	CRITICAL
Total side effects - SPARX (follow-up mean 7 weeks)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[2]	none	28/94 (29.8%)	21/93 (22.6%)	RR 1.32 (0.81 to 2.15)	72 more per 1000 (from 43 fewer to 260 more)	⊕⊕⊕O MODERATE	CRITICAL
								2.6%		more per 1000 (from 43 fewer to 260 more)		
Remission from depression (clinician-rated) - SPARX (follow-up mean 7 weeks; assessed with: Child's depression rating scale - revised (CDRS-R))												
1	randomised trials	no serious risk of	no serious inconsistency	serious[1]	serious[2]	none	42/94 (44.7%)	33/93 (35.5%)	RR 1.26 (0.88 to	92 more per 1000 (from 43 fewer to 284	⊕⊕OO	CRITICAL

		bias							1.8)	more)	LOW	
								5.5%		nore per 1000 (from 43 fewer to 284 more)		
Global functioning depression (clinician-rated) - SPARX (follow-up mean 7 weeks; measured with: Clinical global impressions-Improvement (CGI-I) scale; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	94	93	-	SMD 0.23 lower (0.56 lower to 0.1 higher)	⊕⊕OO LOW	CRITICAL

[1] TAU does not fully constitute face-to-face treatment
[2] Sample size does not reach optimal information size
[3] I^2 88%
[4] High additional therapist input

Table 4.8: cCBT for depression in young people and young adults versus treatment as usual (mainly face-to-face counselling) at follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**CCBT for depression**	**F2f therapy FU**	**Relative (95% CI)**	**Absolute**		
Depression (self-rated) - SPARX (follow-up mean 3 months; measured with: Reynolds adolescent depression scale; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	94	93	-	SMD 0.06 lower (0.34 lower to 0.23 higher)	⊕⊕OO LOW	CRITICAL

Depression (clinician-rated) - SPARX (follow-up mean 3 months; measured with: Child's depression rating scale - revised (CDRS-R); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	94	93	-	SMD 0.04 lower (0.33 lower to 0.24 higher)	⊕⊕OO LOW	CRITICAL
Remission Depression (clinician-rated)) - SPARX (follow-up mean 3 months; assessed with: Child's depression rating scale - revised (CDRS-R))												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	55/94 (58.5%)	49/93 (52.7%)	RR 1.11 (0.86 to 1.44)	58 more per 1000 (from 74 fewer to 232 more)	⊕⊕OO LOW	CRITICAL
								52.7%		more per 1000 (from 74 fewer to 232 more)		

[1] TAU does not fully constitute face-to-face treatment
[2] Sample size does not reach optimal information size

Table 4.9: cCBT for social anxiety in young people and young adults versus control at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**CCBT for social anxiety**	**Waitlist**	**Relative (95% CI)**	**Absolute**		
Social anxiety (follow-up mean 9 weeks; measured with: Social anxiety screening questionnaire; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	9	9	-	SMD 1.22 lower (2.25 to 0.19	⊕⊕OO	CRITICAL

										lower)	LOW	
Depression (follow-up mean 9 weeks; measured with: MADRS-S (self-report); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	9	9	-	SMD 1.33 lower (2.37 to 0.28 lower)	⊕⊕OO LOW	CRITICAL
Quality of life (follow-up mean 9 weeks; measured with: Quality of life inventory; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	9	9	-	SMD 0.46 lower (1.4 lower to 0.48 higher)	⊕⊕OO LOW	CRITICAL

[1] Waitlist control, some additional therapist input (email feedback on homework)
[2] Sample size does not reach optimal information size

Table 4.10: cCBT for child anxiety versus control at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**cCBT for anxiety**	**Control**	**Relative (95% CI)**	**Absolute**		
Anxiety (clinician-rated) - Camp Cope-A-Lot (follow-up mean 12 weeks; measured with: ADIS-C/P; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	16	16	-	SMD 1.09 lower (1.84 to 0.34 lower)	⊕⊕OO LOW	CRITICAL
Anxiety (clinician-rated) - BRAVE - ONLINE (follow-up 10; measured with: ADIS-C/P; Better indicated by lower values)												

1	randomised trials	serious[3]	no serious inconsistency	serious[4]	serious[2]	none	30	29	-	SMD 0.55 lower (1.07 to 0.03 lower)	⊕OOO VERY LOW	CRITICAL
Anxiety (self-rated) - Camp Cope-A-Lot (follow-up mean 12 weeks; measured with: Multidimensional Anxiety Scale for children (MASC); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	16	16	-	SMD 0.26 lower (0.95 lower to 0.44 higher)	⊕⊕OO LOW	CRITICAL
Anxiety (self-rated) - BRAVE - ONLINE (follow-up mean 10 weeks; measured with: SCAS-C; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[4]	serious[2]	none	30	29	-	SMD 0.17 lower (0.69 lower to 0.34 higher)	⊕⊕OO LOW	CRITICAL
Remission - Camp Cope-A-Lot (follow-up mean 12 weeks; assessed with: ADIS-C/P)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	13/16 (81.3%)	3/16 (18.8%)	RR 4.33 (1.52 to 12.34)	624 more per 1000 (from 97 more to 1000 more)	⊕⊕OO LOW	CRITICAL
								18.8%		626 more per 1000 (from 98 more to 1000 more)		
Remission - BRAVE - ONLINE (follow-up mean 10 weeks; assessed with: ADIS-C/P)												
1	randomised trials	serious[3]	no serious inconsistency	serious[4]	serious[2]	none	5/30 (16.7%)	1/29 (3.4%)	RR 4.83 (0.6 to 38.9)	132 more per 1000 (from 14 fewer to 1000 more)	⊕OOO VERY LOW	CRITICAL

								3.5%		134 more per 1000 (from 14 fewer to 1000 more)		
Global functioning - Camp Cope-A-Lot (follow-up mean 12 weeks; measured with: Children's Global assessment scale (C-GAS); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	16	16	-	SMD 0.48 lower (1.18 lower to 0.22 higher)	⊕⊕OO LOW	CRITICAL
Global functioning - BRAVE - ONLINE (follow-up mean 10 weeks; measured with: Children's Global assessment scale (C-GAS); Better indicated by lower values)												
1	randomised trials	serious[3]	no serious inconsistency	serious[4]	serious[2]	none	30	29	-	SMD 0.76 lower (1.29 to 0.23 lower)	⊕OOO VERY LOW	CRITICAL

[1] High therapist input- last six sessions were facilitated by a therapist
[2] Sample size does not reach optimal information size
[3] Unclear blinded clinician-rated outcome assessment
[4] Waitlist control and some additional therapist input

Table 4.11: cCBT for child anxiety versus face-to-face CBT at post-treatment

Quality assessment	No of patients	Effect	Quality	Importance

No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	cCBT for anxiety	f2f therapy	Relative (95% CI)	Absolute		
Anxiety (self-rated) - Camp Cope-A-Lot (follow-up mean 12 weeks; measured with: Multidimensional Anxiety Scale for children (MASC); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	16	17	-	SMD 0.05 lower (0.73 lower to 0.64 higher)	⊕⊕OO LOW	CRITICAL
Anxiety (clinician-rated) - Camp Cope-A-Lot (follow-up mean 12 weeks; measured with: ADIS-C/P; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	16	17	-	SMD 0.15 lower (0.83 lower to 0.54 higher)	⊕⊕OO LOW	CRITICAL
Remission - Camp Cope-A-Lot (follow-up mean 12 weeks; assessed with: ADIS-C/P)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	13/16 (81.3%)	12/17 (70.6%)	RR 1.15 (0.78 to 1.69)	106 more per 1000 (from 155 fewer to 487 more)	⊕⊕OO LOW	CRITICAL
								70.6%		106 more per 1000 (from 155 fewer to 487 more)		
Global functioning - Camp Cope-A-Lo (follow-up mean 12 weeks; measured with: Children's Global assessment scale (C-GAS); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	16	17	-	SMD 0.23 higher (0.46 lower to 0.91 higher)	⊕⊕OO LOW	CRITICAL

[1] Last six sessions were facilitated by a therapist and the degree of therapist input was considered to reduce the applicability of study findings
[2] Sample size does not reach optimal information size

Table 4.12: cCBT for child anxiety versus face-to-face CBT at follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	cCBT for anxiety	f2f therapy	Relative (95% CI)	Absolute		
Anxiety 6m FU (self-rated) - Camp Cope-A-Lot (follow-up mean 6 months; measured with: Multidimensional Anxiety Scale for children (MASC); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	12	14	-	SMD 0.07 lower (0.84 lower to 0.7 higher)	⊕⊕OO LOW	CRITICAL
Anxiety 6m FU (clinician-rated) - Camp Cope-A-Lot (follow-up mean 6 months; measured with: ADIS-C/P; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	12	14	-	SMD 0.87 lower (1.68 to 0.06 lower)	⊕⊕OO LOW	CRITICAL
Global functioning 6m FU - Camp Cope-A-Lot (follow-up mean 6 months; measured with: Children's Global assessment scale (C-GAS); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	12	14	-	SMD 0.19 higher (0.58 lower to 0.97 higher)	⊕⊕OO LOW	CRITICAL

[1] Last six sessions were facilitated by a therapist and the degree of therapist input was considered to reduce the applicability of study findings
[2] Sample size does not reach optimal information size

Table 4.13: Combined results: cCBT for anxiety in young people and young adults versus control at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	CCBT	Control PT	Relative (95% CI)	Absolute		
Anxiety MH population (self-rated) (follow-up 3-12 weeks; measured with: Numerous scales; Better indicated by lower values)												
6	randomised trials	no serious risk of bias	no serious inconsistency[1]	serious[2]	serious[3]	none	119	101	-	SMD 0.77 lower (1.45 to 0.09 lower)	⊕⊕OO LOW	CRITICAL
Anxiety MH population (clinician-rated) (follow-up mean 12 weeks; measured with: ADIS-C/P; Better indicated by lower values)												
2	randomised trials	no serious risk of bias	no serious inconsistency	serious[2]	serious[3]	none	68	46	-	SMD 1.09 lower (1.49 to 0.68 lower)	⊕⊕OO LOW	CRITICAL
Global functioning (self/clinician-rated) (follow-up mean 12 weeks; measured with: Children's Global assessment scale (C-GAS); Better indicated by lower values)												
2	randomised trials	no serious risk of bias	no serious inconsistency	serious[2]	serious[3]	none	68	46	-	SMD 0.72 lower (1.11 to 0.33 lower)	⊕⊕OO LOW	CRITICAL

[1] I^2 80%, contributed to downgrading for indirectness
[2] All studies had some additional therapist input
[3] Sample size does not reach optimal information size

Table 4.14: Combined results: cCBT for anxiety in young people and young adults versus face-to-face CBT at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	CCBT	F2f therapy PT	Relative (95% CI)	Absolute		
Anxiety (self-rated) (follow-up 3-12 weeks; measured with: SCAS-A and DASS-21; Better indicated by lower values)												
3	randomised trials	no serious risk of bias	serious[1]	serious[2]	serious[3]	none	76	75	-	SMD 0.43 lower (0.62 lower to 1.48 higher)	⊕OOO VERY LOW	CRITICAL

[1] I^2 88%
[2] All studies had some additional therapist input
[3] Sample size does not reach optimal information size

Table 4.15: Combined results: cCBT for depression in young people and young adults versus control at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	CCBT	Control PT	Relative (95% CI)	Absolute		

Depression MH population (self-rated) (follow-up 3-32 weeks; measured with: Numerous scales; Better indicated by lower values)												
7	randomised trials	no serious risk of bias	serious[1]	no serious indirectness	serious[2]	none	144	137	-	SMD 0.49 lower (0.73 to 0.24 lower)	⊕⊕OO LOW	CRITICAL
Depression (clinician-rated) (follow-up 4-10 weeks; measured with: Child's depression rating scale - revised (CDRS-R); Better indicated by lower values)												
2	randomised trials	no serious risk of bias[3]	serious[4]	no serious indirectness	serious[2]	none	23	11	-	SMD 1.08 lower (1.63 to 0.52 lower)	⊕⊕OO LOW	CRITICAL
Remission (clinician-rated) (follow-up 4-10 weeks; assessed with: Child's depression rating scale - revised (CDRS-R))												
2	randomised trials	serious[3]	no serious inconsistency	no serious indirectness	serious[2]	none	23/37 (62.2%)	11/29 (37.9%)	RR 1.58 (0.92 to 2.71)	220 more per 1000 (from 30 fewer to 649 more)	⊕⊕OO LOW	CRITICAL
								8.5%		3 more per 1000 (from 31 fewer to 658 more)		

[1] I^2 71%
[2] Sample size does not reach optimal information size
[3] For one study, there was lack of outcome assessor blinding and high attrition
[4] I^2 86%

Table 4.16: Combined results: cCBT for depression in young people and young adults versus face-to-face CBT at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of	**Design**	**Risk of**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other**	**CCBT**	**F2f therapy**	**Relative (95%**	**Absolute**		

studies		bias				considerations		PT	CI)			
Depression (self-rated) (follow-up 3-7 weeks; measured with: Reynolds adolescent depression scale and DASS-21; Better indicated by lower values)												
3	randomised trials	no serious risk of bias	serious[1]	no serious indirectness	serious[2]	none	126	124	-	SMD 0.56 higher (0.44 lower to 1.56 higher)	⊕⊕OO LOW	CRITICAL

[1] I^2 88%
[2] Sample size does not reach optimal information size

Table 4.17: Combined results: cCBT for child anxiety versus control at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**CCBT**	**Control PT (Anxiety)(Child only)**	**Relative (95% CI)**	**Absolute**		
Symptoms of anxiety (self-rated) (follow-up 10-12 weeks; measured with: MASC and SCAS-C; Better indicated by lower values)												
2	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	46	45	-	SMD 0.2 lower (0.62 lower to 0.21 higher)	⊕⊕OO LOW	CRITICAL
Symptoms of anxiety (clinician-rated) (follow-up 10-12 weeks; measured with: ADIS-C/P; Better indicated by lower values)												
2	randomised trials	serious[3]	no serious inconsistency	serious[1]	serious[2]	none	46	45	-	SMD 0.75 lower (1.27 to 0.24 lower)	⊕OOO VERY LOW	CRITICAL

Remission (follow-up 10-12 weeks; assessed with: ADIS-C/P)												
2	randomised trials	serious[3]	no serious inconsistency	serious[1]	serious[2]	none	18/46 (39.1%)	4/45 (8.9%)	RR 4.43 (1.74 to 11.29)	305 more per 1000 (from 66 more to 915 more)	⊕OOO VERY LOW	CRITICAL
								11.1%		381 more per 1000 (from 82 more to 1000 more)		
Global functioning (measured with: Children's Global assessment scale (C-GAS); Better indicated by lower values)												
2	randomised trials	serious[3]	no serious inconsistency	serious[1]	serious[2]	none	46	45	-	SMD 0.66 lower (1.08 to 0.24 lower)	⊕OOO VERY LOW	CRITICAL

[1] High or moderate additional therapist input in studies
[2] Sample size does not reach optimal information size
[3] The larger study had unclear blinded outcome assessment

Table 4.18: Video conference CBT for depression versus face-to-face CBT

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Videoconference CBT**	**Face to face CBT**	**Relative (95% CI)**	**Absolute**		
Depression (follow-up mean 8 weeks; measured with: Children's depression inventory; Better indicated by lower values)												
1	randomised	serious[1]	no serious	no serious	serious[2]	none	14	14	-	SMD 0.54 lower (1.29	⊕⊕OO	CRITICAL

	trials		inconsistency	indirectness						lower to 0.22 higher)	LOW	
Remission (follow-up mean 8 weeks; assessed with: K-SADS)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	13/14 (92.9%)	10/14 (71.4%)	RR 1.30 (0.91 to 1.87)	214 more per 1000 (from 64 fewer to 621 more)	⊕⊕OO LOW	CRITICAL
								0%		-		

[1] Unclear risk of bias from lack of provider and outcome assessor blinding and attrition
[2] Sample size does not reach optimal information size

Table 4.19: Online group CBT for depression versus waitlist

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Therapist-facilitated online discussion	Waitlist	Relative (95% CI)	Absolute		
Depression (follow-up mean 12 weeks; measured with: CES-D; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	121	123	-	SMD 0.84 lower (1.1 to 0.58 lower)	⊕⊕OO LOW	CRITICAL
Anxiety (follow-up mean 12 weeks; measured with: HADS; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	121	123	-	SMD 0.66 lower (0.92 to 0.4 lower)	⊕⊕OO LOW	CRITICAL
Clinically significant change in depression (follow-up mean 12 weeks; assessed with: CES-D)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	121/68 (177.9%)	123/24 (512.5%)	RR 2.88 (1.95 to 4.26)	1000 more per 1000 (from 1000 more to 1000 more)	⊕⊕OO LOW	CRITICAL
								0%		-		

[1] Waitlist control
[2] Sample size does not reach optimal information size

Table 4.20: Online support group forum for anxiety and depression versus no treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Online support group forum	No treatment	Relative (95% CI)	Absolute		
Depression (follow-up mean 3 weeks; measured with: DASS-21; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	13	13	-	SMD 0.60 lower (1.39 lower to 0.19 higher)	⊕⊕OO LOW	CRITICAL
Anxiety (follow-up mean 3 weeks; measured with: DASS-21; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	13	13	-	SMD 0.92 lower (1.74 to 0.11 lower)	⊕⊕OO LOW	CRITICAL
Automatic negative thoughts (follow-up mean 3 weeks; measured with: Automatic Thoughts Questionnaire (ATQ 30); Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	13	13	-	SMD 0.61 lower (1.4 lower to 0.18 higher)	⊕⊕OO LOW	CRITICAL

[1] Therapist present during sessions
[2] Sample size does not reach optimal information size

Table 4.21: Computerised Problem solving therapy for anxiety and depression versus waitlist

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Problem solving therapy	Waitlist	Relative (95% CI)	Absolute		
Depression (follow-up mean 5 weeks; measured with: CES-D; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	22	23	-	SMD 0.04 lower (0.63 lower to 0.54 higher)	⊕⊕OO LOW	CRITICAL
Anxiety (follow-up mean 5 weeks; measured with: HADS; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	22	23	-	SMD 0.12 higher (0.46 lower to 0.71 higher)	⊕⊕OO LOW	CRITICAL
Depression at 4 month follow-up (follow-up mean 4 months; measured with: CES-D; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	22	23	-	SMD 0.04 higher (0.55 lower to 0.62 higher)	⊕⊕OO LOW	CRITICAL
Anxiety at 4 month follow-up (follow-up mean 4 months; measured with: HADS; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	22	23	-	SMD 0.16 lower (0.74 lower to 0.43 higher)	⊕⊕OO LOW	CRITICAL

[1] High attrition
[2] Waitlist control. Contributed to downgrading for ROB
[3] Sample size does not reach optimal information size

Table 4.22: GRADE profile for ABM and CBM-I versus control

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	ABM or CBM-I	Control	Relative (95% CI)	Absolute		
Anxiety (self-reported) - ABM Population with anxiety (follow-up 2-3 weeks; measured with: State-trait Anxiety Inventory for children and Spence children's anxiety scale; Better indicated by lower values)												
2	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[1]	none	36	32	-	SMD 0.19 lower (0.69 lower to 0.32 higher)	⊕⊕⊕O MODERATE	CRITICAL
Anxiety (self-reported) - CBM-I Population with anxiety (follow-up mean 1 days; measured with: Visual analogue scale; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[2]	serious[1]	none	16	12	-	SMD 0.39 higher (0.37 lower to 1.15 higher)	⊕⊕OO LOW	CRITICAL
Anxiety (self-reported) - CBM-I General population (Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[2]	serious[1]	none	73	75	-	SMD 0.12 higher (0.2 lower to 0.45 higher)	⊕⊕OO LOW	CRITICAL
Anxiety (self-reported) - CBM-I Population with diagnosed depression (follow-up mean 2 weeks; measured with: State-Trait anxiety scale - Trait subscale;												

Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious[1]	none	23	22	-	SMD 0.18 lower (0.76 lower to 0.41 higher)	⊕⊕OO LOW	CRITICAL
Anxiety (clinician-rated) - ABM Population with anxiety (follow-up mean 3 weeks; measured with: DSM-C-IV-P; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious[1]	none	18	16	-	SMD 0.95 lower (1.66 to 0.23 lower)	⊕⊕OO LOW	CRITICAL
Anxiety (parent-rated) - Population with anxiety (follow-up mean 3 weeks; measured with: SCAS-P; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious[1]	none	18	16	-	SMD 0.19 higher (0.49 lower to 0.86 higher)	⊕⊕OO LOW	CRITICAL
Number of anxiety disorders (clinician-rated) - Population with anxiety (follow-up mean 3 weeks; measured with: DSM-C-IV-P; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious[1]	none	18	16	-	SMD 0.67 lower (1.36 lower to 0.03 higher)	⊕⊕OO LOW	CRITICAL
Test anxiety (self-reported) - Population with social anxiety/test anxiety (follow-up mean 10 weeks; measured with: Test anxiety inventory; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[1]	none	86	70	-	SMD 0.25 lower (0.56 lower to 0.07 higher)	⊕⊕⊕O MODERATE	CRITICAL
Test anxiety Follow up (self-reported) - Population with social anxiety/test anxiety (follow-up mean 12 months; measured with: Test anxiety inventory; Better indicated by lower values)												

1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[1]	none	86	70	-	SMD 0.22 lower (0.53 lower to 0.1 higher)	⊕⊕⊕O MODERATE	CRITICAL
Social anxiety (self-reported) - ABM Population with social anxiety (follow-up mean 1 weeks; measured with: Social interaction anxiety scale; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious[1]	none	12	12	-	SMD 0.89 lower (1.74 to 0.04 lower)	⊕⊕OO LOW	CRITICAL
Social anxiety (self-reported) - ABM/CBM-I Population with social or test anxiety (follow-up mean 10 weeks; measured with: Revised Child Anxiety and Depression Scale: Social phobia subscale; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[1]	none	86	70	-	SMD 0.05 lower (0.36 lower to 0.27 higher)	⊕⊕⊕O MODERATE	CRITICAL
Social anxiety Follow up (self-reported) ABM/CBM-I - Population with social anxiety or test anxiety (follow-up mean 12 months; measured with: Revised Child Anxiety and Depression Scale: Social phobia subscale; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[1]	none	86	70	-	SMD 0.15 lower (0.47 lower to 0.17 higher)	⊕⊕⊕O MODERATE	CRITICAL
Depression (self-reported) - ABM Population with anxiety (follow-up mean 2-3 weeks; measured with: CES-D and CDI; Better indicated by lower values)												
2	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[1]	none	36	32	-	SMD 0.42 higher (0.06 lower to 0.91 higher)	⊕⊕⊕O MODERATE	CRITICAL
Depression (self-reported) - CBM-I Population with diagnosed depression (follow-up mean 2 weeks; measured with: Beck Depression Inventory; Better indicated by lower values)												
1	randomised	no serious risk of	no serious	no serious	very serious[1]	none	23	22	-	SMD 0.1 lower (0.69 lower to	⊕⊕OO	CRITICAL

	trials	bias	inconsistency	indirectness						0.48 higher)	LOW	

[1] Sample size does not reach optimal information size
[2] Single intervention conducted with immediate post-treatment assessment

4.23 GRADE profile for self-monitoring with mobile phones compared with control

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Mobile phone self-monitoring**	**Non-therapeutic mobile phone use**	**Relative (95% CI)**	**Absolute**		
Depression (follow-up mean 2 weeks; measured with: Depression Anxiety Stress Scale (DASS); Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	50	33	-	SMD 0.11 higher (0.33 lower to 0.55 higher)	⊕⊕OO LOW	CRITICAL
Depression at 6 week follow-up (follow-up mean 6 weeks; measured with: Depression Anxiety Stress Scale (DASS); Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	50	33	-	SMD 0.09 higher (0.34 lower to 0.52 higher)	⊕⊕OO LOW	CRITICAL
Anxiety (follow-up mean 2 weeks; measured with: Depression Anxiety Stress Scale (DASS); Better indicated by lower values)												
1	randomised	serious[1]	no serious	no serious	serious[2]	none	50	33	-	SMD 0.08	⊕⊕OO	CRITICAL

	trials		inconsistency	indirectness						higher (0.36 lower to 0.52 higher)	LOW	
Anxiety at 6 week follow-up (follow-up mean 6 weeks; measured with: Depression Anxiety Stress Scale (DASS); Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	50	33	-	SMD 0.06 higher (0.5 lower to 0.37 higher)	⊕⊕OO LOW	CRITICAL
Stress (follow-up mean 2 weeks; measured with: Depression Anxiety Stress Scale (DASS); Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	50	33	-	SMD 0.13 higher (0.31 lower to 0.57 higher)	⊕⊕OO LOW	CRITICAL
Stress at 6 weeks follow-up (follow-up mean 6 weeks; measured with: Depression Anxiety Stress Scale (DASS); Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	50	33	-	SMD 0.22 higher (0.21 lower to 0.66 higher)	⊕⊕OO LOW	CRITICAL

[1] Unclear ROB from lack of blinding and attrition bias
[2] Sample size does not reach optimal information size

5 PHOBIA

Table 5.1: GRADE profile for computerised spider exposure compared with in vivo spider exposure for spider phobia

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Computerised exposure	In vivo exposure	Relative (95% CI)	Absolute		
Fear of spiders (self-rate) (follow-up mean 1 days; measured with: Spider phobia questionnaire for children; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	serious[2]	serious[3]	none	8	9	-	SMD 1.14 higher (0.09 to 2.18 higher)	⊕OOO VERY LOW	CRITICAL
Anxiety (researcher-rate) (follow-up mean 1 days; measured with: Behavioural avoidance test; Better indicated by lower values)												
1	randomised trials	serious[1,4]	no serious inconsistency	serious[2]	serious[3]	none	8	9	-	SMD 0.91 higher (0.10 lower to 1.93 higher)	⊕OOO VERY LOW	CRITICAL

[1] Unclear ROB from attrition
[2] Outcome measures immediately after single intervention session
[3] Sample size does not reach optimum information size
[4] Unclear blinded outcome assessment

Table 5.2: GRADE profile for CBM-I compared with neutral training for spider phobia

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	CBM-I	Neutral training	Relative (95% CI)	Absolute		
Fear of spiders (self-reported) - CBM-I Population with high spider phobia scores (follow-up mean 1 days; measured with: Positive and Negative Affect scale (PANAS) - fear subscale; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	20	20	-	SMD 0.14 lower (0.76 lower to 0.48 higher)	⊕⊕OO LOW	CRITICAL
Avoidance of spiders (clinician-rated) - CBM-I Population with high spider phobia scores (follow-up mean 1 days; measured with: Behavioural avoidance test; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	19	19	-	SMD 0.05 lower (0.69 lower to 0.58 higher)	⊕⊕OO LOW	CRITICAL

[1] Single intervention conducted with immediate post-treatment assessment
[2] Sample size does not reach optimal information size

6 OBSESSIVE COMPULSIVE DISORDER

Table 6.1: GRADE profile for video conference CBT compared to waitlist for OCD

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Videoconference CBT	Waitlist	Relative (95% CI)	Absolute		
OCD symptoms (follow-up mean 12 weeks; measured with: Children's Yale-Brown Obsessive Compulsive Scale; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	16	15	-	SMD 0.76 lower (1.5 to 0.03 lower)	⊕⊕OO LOW	CRITICAL
Global functioning (follow-up mean 12 weeks; measured with: Clinical Global Impressions - Severity scale; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	16	15	-	SMD 0.57 lower (1.29 lower to 0.15 higher)	⊕⊕OO LOW	IMPORTANT
Anxiety (follow-up mean 12 weeks; measured with: Multidimensional Anxiety Scale for children; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	16	15	-	SMD 0.18 higher (0.53 lower to 0.88 higher)	⊕⊕OO LOW	CRITICAL

Depression (follow-up mean 12 weeks; measured with: Children's Depression Inventory; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	16	15	-	SMD 0.29 higher (0.42 lower to 1 higher)	⊕⊕OO LOW	CRITICAL
Remission (follow-up mean 12 weeks; assessed with: ADIS-IV-C/P <=3 and CY-BOCS <=10)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	9/0 (0%)	2/0 (0%)	RR 0 (1.08 to 16.45)	-	⊕⊕OO LOW	CRITICAL
								0%		-		

[1] Waitlist control group
[2] Sample size does not reach optimum information size

Table 6.2: GRADE profile for CBM-I compared to neutral training for OCD

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	CBM-I	Neutral training	Relative (95% CI)	Absolute		
OCD: negative symptoms (self-reported) - CBM-I Population with high OCD symptoms (follow-up mean 1 days; measured with: Positive and Negative Affect scale (PANAS) - negative affect subscale; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	50	50	-	SMD 0.23 lower (0.63 lower to 0.16 higher)	⊕⊕OO LOW	CRITICAL
OCD: obsessional beliefs (self-reported) - CBM-I Population with high OCD symptoms (follow-up mean 1 days; measured with: Obsessional beliefs questionnaire - short form; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	50	50	-	SMD 0.51 lower (0.91 to 0.12 lower)	⊕⊕OO LOW	CRITICAL

[1] Single intervention conducted with immediate post-treatment assessment
[2] Sample size does not reach optimal information size

7 POST-TRAUMATIC STRESS DISORDER

Table 7.1: GRADE profile for website for PTSD

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Online information and exercises**	**No treatment**	**Relative (95% CI)**	**Absolute**		
Total trauma symptoms (follow-up mean 6 months; measured with: Trauma symptom checklist for children-A: Total; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29	27	-	SMD 0.23 lower (0.76 lower to 0.29 higher)	⊕⊕OO LOW	CRITICAL
Anxiety (follow-up mean 6 months; measured with: Trauma symptom checklist for children-A: Anxiety; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29	27	-	SMD 0.21 lower (0.73 lower to 0.32 higher)	⊕⊕OO LOW	CRITICAL
Depression (follow-up mean 6 months; measured with: Trauma symptom checklist for children-A: Depression; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29	27	-	SMD 0.14 lower (0.67 lower to 0.38 higher)	⊕⊕OO LOW	CRITICAL

Posttraumatic stress (follow-up mean 6 months; measured with: Trauma symptom checklist for children-A: Posttraumatic stress; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	29	27	-	SMD 0.13 lower (0.65 lower to 0.4 higher)	⊕⊕OO LOW	CRITICAL

[1] Unclear ROB from high rate of attrition
[2] Sample size does not reach optimum information size

8 EATING DISORDERS

Table 8.1: GRADE profile for cCBT with online moderated group discussion for Eating disorders compared with Waitlist control at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Student Bodies	Waitlist	Relative (95% CI)	Absolute		
Global ED symptoms (follow-up 8 weeks; measured with: EDI; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	31	30	-	SMD 0.2 higher (0.31 lower to 0.7 higher)	⊕⊕OO LOW	CRITICAL
Weight concerns (follow-up 8 weeks; measured with: EDI; Better indicated by lower values)												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	58	60	-	SMD 0.04 higher (0.32 lower to 0.4 higher)	⊕⊕OO LOW	CRITICAL
Shape concerns (follow-up 8 weeks; measured with: EDI; Better indicated by lower values)												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	58	60	-	SMD 0.16 higher (0.2 lower to 0.52 higher)	⊕⊕OO LOW	CRITICAL
Restraint (follow-up 8 weeks; measured with: EDI; Better indicated by lower values)												

1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	31	30	-	SMD 0.2 higher (0.31 lower to 0.7 higher)	⊕⊕OO LOW	CRITICAL
Drive for thinness (follow-up 8 weeks; measured with: EDI; Better indicated by lower values)												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	58	60	-	SMD 0.05 lower (0.41 lower to 0.31 higher)	⊕⊕OO LOW	CRITICAL
Bulimia (follow-up 8 weeks; Better indicated by lower values)												
2	randomised trials	serious[1]	serious[4]	no serious indirectness[2]	serious[3]	none	58	60	-	SMD 0.06 higher (0.53 lower to 0.65 higher)	⊕OOO VERY LOW	CRITICAL

[1] Self-rated outcomes
[2] Waitlist control contributed to downgrading for risk of bias
[3] Sample size does not reach optimum information size
[4] I^2 = 62%

Table 8.2: GRADE profile for cCBT with online moderated group discussion for Eating disorders compared with Waitlist control at follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Student Bodies	Waitlist	Relative (95% CI)	Absolute		
Weight concerns (follow-up 4-5 months; measured with: EDI; Better indicated by lower values)												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	54	59	-	SMD 0.12 higher (0.25 lower to 0.49 higher)	⊕⊕OO LOW	CRITICAL
Shape concerns (follow-up 4-5 months; measured with: EDI; Better indicated by lower values)												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	54	59	-	SMD 0.12 higher (0.25 lower to 0.49 higher)	⊕⊕OO LOW	CRITICAL
Restraint (follow-up 4-5 months; measured with: EDI; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	27	29	-	SMD 0 higher (0.52 lower to 0.52 higher)	⊕⊕OO LOW	CRITICAL
Drive for thinness (follow-up 4-5 months; measured with: EDI; Better indicated by lower values)												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	54	59	-	SMD 0.03 lower (0.4 lower to 0.34	⊕⊕OO LOW	CRITICAL

										higher)		
Bulimia (follow-up 4-5 months; measured with: EDI; Better indicated by lower values)												
2	randomised trials	serious[1]	serious[4]	no serious indirectness[2]	serious[3]	none	54	59	-	SMD 0.16 higher (0.66 lower to 0.98 higher)	⊕OOO VERY LOW	CRITICAL
Global ED symptoms (follow-up 4-5 months; measured with: EDI; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	27	29	-	SMD 0.09 higher (0.44 lower to 0.61 higher)	⊕⊕OO LOW	CRITICAL

[1] Self-rated outcomes
[2] Waitlist control contributed to downgrading for risk of bias
[3] Sample size does not reach adequate information size
[4] I^2 = 79%

Table 8.3: GRADE profile for cCBT with online moderated group discussion for Binge-eating disorder compared with Waitlist control at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**CCBT + online moderated group discussion**	**Waitlist PT (at risk of BED)**	**Relative (95% CI)**	**Absolute**		
Binge episodes (follow-up 16 weeks; measured with: Eating behaviours inventory; Better indicated by lower values)												

1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	52	53	-	SMD 0.07 higher (0.31 lower to 0.46 higher)	⊕⊕OO LOW	CRITICAL
Weight and shape concerns (follow-up 16 weeks; measured with: Eating behaviours inventory ; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	52	53	-	SMD 0.19 lower (0.57 lower to 0.2 higher)	⊕⊕OO LOW	CRITICAL
Weight concerns (follow-up 16 weeks; measured with: EDE-Q; Better indicated by lower values)												
1	randomised trials	serious[4]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	33	33	-	SMD 0.28 lower (0.77 lower to 0.20 higher)	⊕⊕OO LOW	CRITICAL
Shape concerns (follow-up 16 weeks; measured with: EDE-Q; Better indicated by lower values)												
1	randomised trials	serious[4]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	33	33	-	SMD 0.17 lower (0.65 lower to 0.32 higher)	⊕⊕OO LOW	CRITICAL
Restraint (follow-up 16 weeks; measured with: EDE-Q; Better indicated by lower values)												
1	randomised trials	serious[4]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	33	33	-	SMD 0.45 higher (0.04 lower to 0.94 higher)	⊕⊕OO LOW	CRITICAL
Depression (follow-up 16 weeks; measured with: CES-D; Better indicated by lower values)												

1	randomised trials	serious[4]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	52	53	-	SMD 0.19 lower (0.57 lower to 0.2 higher)	⊕⊕OO LOW	IMPORTANT
Remission (follow-up 16 weeks; assessed with: Eating behaviours inventory)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	12/44 (27.3%)	5/43 (11.6%)	RR 2.35 (0.9 to 6.09)	157 more per 1000 (from 12 fewer to 592 more)	⊕⊕OO LOW	CRITICAL
								11.6%		157 more per 1000 (from 12 fewer to 590 more)		
BMI (follow-up 16 weeks; measured with: BMI; Better indicated by lower values)												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	85	86	-	SMD 0.13 lower (0.43 lower to 0.17 higher)	⊕⊕OO LOW	CRITICAL

[1] Unblinded assessor-rated outcomes
[2] Waitlist control contributed to RoB
[3] Sample size does not reach optimum information size
[4] Serious RoB of self-rated outcomes

Table 8.4: GRADE profile for cCBT with online moderated group discussion for Binge-eating disorder compared with Waitlist control at follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	CCBT + online moderated group discussion	Waitlist FU (at risk of BED)	Relative (95% CI)	Absolute		
Binge episodes (follow-up 9 months; measured with: Eating behaviours inventory; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	52	53	-	SMD 0.38 higher (0 to 0.77 higher)	⊕⊕OO LOW	CRITICAL
Weight and shape concerns (follow-up 9 months; measured with: Eating behaviours inventory ; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	52	53	-	SMD 0.04 lower (0.43 lower to 0.34 higher)	⊕⊕OO LOW	CRITICAL
Weight concerns (follow-up 8 months; measured with: EDE-Q; Better indicated by lower values)												
1	randomised trials	serious[4]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	33	33	-	SMD 0.01 higher (0.48 lower to 0.49 higher)	⊕⊕OO LOW	CRITICAL
Shape concerns (follow-up 8 months; measured with: EDE-Q; Better indicated by lower values)												

1	randomised trials	serious[4]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	33	33	-	SMD 0.13 higher (0.35 lower to 0.61 higher)	⊕⊕OO LOW	CRITICAL
Depression (follow-up 9 months; measured with: CES-D; Better indicated by lower values)												
1	randomised trials	serious[4]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	52	53	-	SMD 0.1 higher (0.28 lower to 0.49 higher)	⊕⊕OO LOW	IMPORTANT
Restraint (follow-up 8 months; measured with: EDE-Q; Better indicated by lower values)												
1	randomised trials	serious[4]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	0	-	-	SMD 0.26 higher (0.23 lower to 0.74 higher)	⊕⊕OO LOW	CRITICAL
BMI (follow-up 8-9 months; measured with: BMI; Better indicated by lower values)												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	85	86	-	SMD 0.17 lower (0.47 lower to 0.14 higher)	⊕⊕OO LOW	CRITICAL

[1] Un-blinded assessor-rated outcomes
[2] Waitlist control contributed to RoB
[3] Sample size does not reach optimum information size
[4] Serious RoB of self-rated outcomes

Table 8.5: GRADE profile for online group CBT compared with Waitlist control at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Online group CBT	Waitlist PT (at risk of ED)	Relative (95% CI)	Absolute		
Weight loss behaviour (follow-up 6 weeks; measured with: Extreme weight loss behaviour scale; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	36	37	-	SMD 0.1 lower (0.55 lower to 0.36 higher)	⊕⊕OO LOW	CRITICAL
Shape concerns (follow-up 6 weeks; measured with: Body shape questionnaire ; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	36	37	-	SMD 0.7 lower (1.17 to 0.22 lower)	⊕⊕OO LOW	CRITICAL
Restraint (follow-up 6 weeks; measured with: Dutch eating behaviour questionnaire - restraint subscale; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	36	37	-	SMD 0.18 lower (0.64 lower to 0.28 higher)	⊕⊕OO LOW	CRITICAL
Bulimia (follow-up 6 weeks; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	36	37	-	SMD 0.45 lower (0.91 lower to 0.02 higher)	⊕⊕OO LOW	CRITICAL

Depression (follow-up 6 weeks; measured with: Beck Depression Inventory ; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	36	37	-	SMD 0.51 lower (0.98 to 0.04 lower)	⊕⊕OO LOW	IMPORTANT

[1] Self-rated outcomes
[2] Waitlist control contributed to downgrading for risk of bias
[3] Sample size does not reach optimum information size

Table 8.6: GRADE profile for computer-based psychoeducation in low and at risk of developing and eating disorder populations compared with non-therapeutic control at follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	FMA	Control	Relative (95% CI)	Absolute		
Global ED symptoms (follow-up 3 months; measured with: EDE-Q; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	116	115	-	SMD 0.23 lower (0.49 lower to 0.03 higher)	⊕⊕OO LOW	CRITICAL
Weight concerns (follow-up 3 months; measured with: EDE-Q; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	116	115	-	SMD 0.07 lower (0.33 lower to 0.19 higher)	⊕⊕OO LOW	CRITICAL
Shape concerns (follow-up 3 months; measured with: EDE-Q; Better indicated by lower values)												

1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	116	115	-	SMD 0.2 lower (0.46 lower to 0.06 higher)	⊕⊕OO LOW	CRITICAL
Restraint (follow-up 3 months; measured with: EDE-Q; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	116	115	-	SMD 0.07 lower (0.33 lower to 0.19 higher)	⊕⊕OO LOW	CRITICAL

[1] Serious RoB for self-rated outcomes
[2] Sample size does not reach optimum information size

Table 8.7: GRADE profile for computer-based psychoeducation in at risk of developing and eating disorder populations compared with non-therapeutic control at follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**FMA**	**Control**	**Relative (95% CI)**	**Absolute**		
Global ED symptoms (follow-up 3 months; measured with: EDE-Q; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	56	56	-	SMD 0.28 lower (0.66 lower to 0.09 higher)	⊕⊕OO LOW	CRITICAL
Weight concerns (follow-up 3 months; measured with: EDE-Q; Better indicated by lower values)												
1	randomised	serious[1]	no serious	no serious	serious[2]	none	56	56	-	SMD 0.28 lower (0.66 lower to 0.09	⊕⊕OO	CRITICAL

	trials		inconsistency	indirectness						higher)	LOW	
Shape concerns (follow-up 3 months; measured with: EDE-Q; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	56	56	-	SMD 0.34 lower (0.71 lower to 0.03 higher)	⊕⊕OO LOW	CRITICAL
Restraint (follow-up 3 months; measured with: EDE-Q; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	56	56	-	SMD 0.26 lower (0.64 lower to 0.11 higher)	⊕⊕OO LOW	CRITICAL

[1] Serious RoB of self-rated outcomes
[2] Sample size does not reach optimum information size

9 ATTENTION DEFICIT HYPERACTIVITY DISORDER

Table 9.1: GRADE profile for computerised cognitive training for ADHD

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Computerised cognitive training	Control	Relative (95% CI)	Absolute		
Attention - All ADHD populations (follow-up 1-4 months; measured with: Numerous scales; Better indicated by lower values)												
5	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	85	89	-	SMD 0.57 lower (0.89 to 0.26 lower)	⊕⊕OO LOW	CRITICAL
Attention - Computerised attention training: Population with ADHD or inattentiveness (follow-up 2-4 months; measured with: BASC attention problems scale, Du Paul rating scale, Inattention and CTRS-R Inattention; Better indicated by lower values)												
3	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	56	56	-	SMD 0.56 lower (0.98 to 0.14 lower)	⊕⊕OO LOW	CRITICAL
Attention - Computerised working memory training: Population with ADHD (follow-up 4-5 weeks; measured with: CRS-R ADHD index: Inattentiveness and Off-task during Restricted Academic Situations Tasks (RAST); Better indicated by lower values)												
2	randomised trials	no serious risk of	no serious inconsistency	no serious indirectness	serious[3]	none	29	33	-	SMD 0.65 lower (1.32 lower to	⊕⊕⊕O MODERATE	CRITICAL

		bias								0.03 higher)		
Attention FU - Computerised working memory training: Population with ADHD (follow-up 10 weeks; measured with: CRS-R ADHD index: Inattentiveness; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	17	20	-	SMD 0.13 lower (0.78 lower to 0.52 higher)	⊕⊕⊕O MODERATE	CRITICAL
Hyperactivity/Impulse control - All ADHD/inattentive populations (follow-up 1-4 months; measured with: Numerous scales; Better indicated by lower values)												
4	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	76	80	-	SMD 0.47 lower (0.83 to 0.11 lower)	⊕⊕OO LOW	CRITICAL
Hyperactivity/Impulse control - Computerised attention training: Population with ADHD/inattentiveness (follow-up 2-4 months; measured with: CRS-R hyperactivity scale, Du Paul rating scale, Hyperactivity and Academic performance rating scale: impulse control; Better indicated by lower values)												
3	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	56	56	-	SMD 0.52 lower (0.97 lower to 0.08 higher)	⊕⊕OO LOW	CRITICAL
Hyperactivity/Impulse control - Computerised working memory training: Population with ADHD (follow-up mean 5 weeks; measured with: CRS-R ADHD index: Hyperactivity; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	20	24	-	SMD 0.36 lower (0.97 lower to 0.25 higher)	⊕⊕⊕O MODERATE	CRITICAL
Hyperactivity/Impulse control - Computerised working memory training: Population with ADHD and learning disability (follow-up mean 5 weeks; measured												

with: Strengths and weaknesses of ADHD and normal behaviour scale Inattention/hyperactivity; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	32	20	-	SMD 0.05 higher (0.51 lower to 0.61 higher)	⊕⊕⊕O MODERATE	CRITICAL
Hyperactivity FU - Computerised working memory training: Population with ADHD (follow-up mean 4 months; measured with: CRS-R ADHD index: Hyperactivity; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	17	20	-	SMD 0.56 lower (1.22 lower to 0.1 higher)	⊕⊕⊕O MODERATE	CRITICAL
ADHD - All ADHD populations (follow-up 1-4 months; measured with: Numerous scales; Better indicated by lower values)												
4	randomised trials	no serious risk of bias	no serious inconsistency	serious[4]	serious[3]	none	63	67	-	SMD 0.39 lower (0.740.46 to 0.04 lower)	⊕⊕OO LOW	CRITICAL
ADHD - Computerised attention training: Population with ADHD (follow-up mean 4 months; measured with: CRS-R ADHD Index; Better indicated by lower values)												
1	randomised trials	no serious risk of bias[5]	no serious inconsistency	serious[6]	serious[3]	none	11	15	-	SMD 0.22 lower (1 lower to 0.56 higher)	⊕⊕OO LOW	CRITICAL
ADHD - Computerised working memory training: Population with ADHD (follow-up 4-5 weeks; measured with: ADAH index of Conner's parent rating scale revised (CPRS-R) and Behaviour rating scale; Better indicated by lower values)												
3	randomised	no serious	no serious	serious[7]	serious[3]	none	52	52	-	SMD 0.44 lower (0.83	⊕⊕OO	CRITICAL

	trials	risk of bias	inconsistency							to 0.04 lower)	LOW	
ADHD - Computerised working memory training: Population with ADHD and learning disability (follow-up mean 5 weeks; measured with: IOWA Connors scale ; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	32	20	-	SMD 0.05 higher (0.51 lower to 0.6 higher)	⊕⊕⊕O MODERATE	CRITICAL
ADHD - Computerised working memory training: General population (follow-up mean 5 weeks; measured with: Behaviour rating scale; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[7]	serious[3]	none	23	25	-	SMD 0.09 higher (0.48 lower to 0.65 higher)	⊕⊕OO LOW	CRITICAL
Academic success - Computerised attention training: Population with inattentiveness (follow-up mean 6 months; measured with: Academic performance rating scale: academic success; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	25	25	-	SMD 0.39 lower (1.16 lower to 0.37 higher)	⊕⊕⊕O MODERATE	IMPORTANT
Academic productivity - Computerised attention training: Population with inattentiveness (follow-up mean 6 months; measured with: Academic performance rating scale: academic productivity; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	25	25	-	SMD 0.1 higher (0.56 lower to 0.77 higher)	⊕⊕⊕O MODERATE	IMPORTANT

Math - Computerised attention training: Population with ADHD/inattentiveness (follow-up 2-6 months; measured with: Woodcock-Johnson III: Math and Proportion of maths test correct answers; Better indicated by lower values)												
2	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	45	41	-	SMD 0.12 lower (0.86 lower to 0.61 higher)	⊕⊕⊕O MODERATE	IMPORTANT
Math - Working memory training: Population with learning disability (follow-up mean 5 weeks; measured with: Wide Range Achievement Test 4, Maths skills and The Arithmetic test; Better indicated by lower values)												
2	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	73	46	-	SMD 0.22 higher (0.15 lower to 0.59 higher)	⊕⊕⊕O MODERATE	CRITICAL
Maths FU - Working memory training: Population with learning disability (follow-up mean 10 weeks; measured with: The Arithmetic test; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	39	25	-	SMD 0 higher (0.5 lower to 0.5 higher)	⊕⊕⊕O MODERATE	IMPORTANT
Reading - Computerised attention training: Population with ADHD or inattentiveness (follow-up mean 6 months; measured with: Woodcock-Johnson III: Reading; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	25	25	-	SMD 0.25 lower (1.29 lower to 0.79 higher)	⊕⊕⊕O MODERATE	IMPORTANT
Reading - Working memory training: Population with learning disability (follow-up mean 5 weeks; measured with: Wide Range Achievement Test 4, reading skills and The Reading test; Better indicated by lower values)												

2	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	73	46	-	SMD 0.1 higher (0.27 lower to 0.47 higher)	⊕⊕⊕O MODERATE	IMPORTANT
Reading FU - Working memory training: Population with learning disability (follow-up mean 10 weeks; measured with: The Reading test; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	39	25	-	SMD 0.02 lower (0.52 lower to 0.48 higher)	⊕⊕⊕O MODERATE	IMPORTANT
Comprehension - Computerised attention training: Population with ADHD (follow-up mean 8 weeks; measured with: Proportion of correct answers in reading comprehension; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	20	16	-	SMD 0.75 lower (1.43 to 0.07 lower)	⊕⊕⊕O MODERATE	IMPORTANT
Comprehension - Working memory training: Population with learning disability (follow-up mean 5 weeks; measured with: Wide Range Achievement Test 4, sentence comprehension and Story recall test (immediate); Better indicated by lower values)												
2	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	73	46	-	SMD 0.02 higher (0.35 lower to 0.38 higher)	⊕⊕⊕O MODERATE	IMPORTANT
Comprehension FU - Working memory training: Population with learning disability (follow-up mean 10 weeks; measured with: Story recall test (immediate); Better indicated by lower values)												
1	randomised trials	no serious risk of	no serious inconsistency	no serious indirectness	serious[3]	none	39	25	-	SMD 0.47 lower (0.98 lower to	⊕⊕⊕O MODERATE	IMPORTANT

		bias								0.04 higher)		
Passage copying - Computerised attention training: Population with ADHD (follow-up mean 8 weeks; measured with: Number of words copied per second; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	20	16	-	SMD 0.78 lower (1.46 to 0.1 lower)	⊕⊕⊕O MODERATE	IMPORTANT
Spelling - Working memory training: Population with learning disability (follow-up mean 5 weeks; measured with: Wide Range Achievement Test 4, spelling; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	32	20	-	SMD 0.25 higher (0.32 lower to 0.81 higher)	⊕⊕⊕O MODERATE	IMPORTANT
Intelligence - Computerised attention training: General population (follow-up mean 5 weeks; measured with: Kaufman brief intelligence test, Matricies; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	19	18	-	SMD 0.17 lower (0.82 lower to 0.48 higher)	⊕⊕⊕O MODERATE	CRITICAL
Intelligence FU - Computerised attention training: General population (follow-up mean 3 months; measured with: Kaufman brief intelligence test, Matricies; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[3]	none	19	18	-	SMD 0.17 higher (0.47 lower to 0.82 higher)	⊕⊕⊕O MODERATE	IMPORTANT

[1] Possible selective outcome reporting bias in one study and risk of assessment bias in other study
[2] Two studies had a waitlist control and contributed to downgrading for ROB

[3] Sample size does not reach optimal information size
[4] More than half of the data came from studies with a waitlist control group
[5] Possible outcome reporting bias
[6] Research assistant input and waitlist control. This, together with some ROB contributed to downgrading
[7] Waitlist control group

10 CONDUCT DISORDER

Table 10.1: GRADE profile for online parent training compared with control at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Online parent training	Control PT	Relative (95% CI)	Absolute		
Number of behaviours viewed as problematic (follow-up 10-12 weeks; measured with: Eyberg child behaviour inventory (problem subscale); Better indicated by lower values)												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	106	96	-	SMD 0.86 lower (1.22 to 0.5 lower)	⊕⊕OO LOW	CRITICAL
Frequency of disruptive behaviours (follow-up 10-12 weeks; measured with: Eyberg child behaviour inventory (intensity subscale); Better indicated by lower values)												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	106	96	-	SMD 0.78 lower (1.07 to 0.49 lower)	⊕⊕OO LOW	CRITICAL
Emotional symptoms (follow-up 10-12 weeks; measured with: Strengths and difficulties questionnaire; Better indicated by lower values)												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	106	96	-	SMD 0.42 lower (0.7 to 0.14 lower)	⊕⊕OO LOW	CRITICAL

Remission: Behaviours viewed as problematic (follow-up 10-12 weeks; assessed with: Eyberg child behaviour inventory (intensity sub-scale))												
2	randomised trials	serious[1]	no serious inconsistency	no serious indirectness[2]	serious[3]	none	59/106 (55.7%)	22/96 (22.9%)	RR 2.34 (1.6 to 3.43)	307 more per 1000 (from 138 more to 557 more)	⊕⊕OO LOW	CRITICAL
								24.6%		330 more per 1000 (from 148 more to 598 more)		
Clinician-rated family observation (follow-up mean 12 weeks; measured with: Family Observation Schedule (researcher-rated); Better indicated by lower values)												
1	randomised trials	serious[4]	no serious inconsistency	no serious indirectness	serious[3]	none	24	21	-	SMD 0.01 higher (0.57 lower to 0.6 higher)	⊕⊕OO LOW	CRITICAL

[1] Un-blinded parental assessment
[2] One study had waitlist control and some therapist input
[3] Sample size does not reach optimum information size
[4] Un-blinded clinician-rated

Table 10.2: GRADE profile for online parent training compared with control at six month follow-up

Quality assessment							**No of patients**		**Effect**		**Quality**	**Importance**
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Online parent training**	**Control FU**	**Relative (95% CI)**	**Absolute**		
Number of behaviours viewed as problematic (follow-up mean 6 months; measured with: Eyberg child behaviour inventory (problem subscale); Better												

indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	60	56	-	SMD 0.6 lower (0.97 to 0.23 lower)	⊕⊕OO LOW	CRITICAL
Frequency of disruptive behaviours (follow-up mean 6 months; measured with: Eyberg child behaviour inventory (intensity subscale); Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	60	56	-	SMD 0.73 lower (1.11 to 0.36 lower)	⊕⊕OO LOW	CRITICAL
Emotional symptoms (follow-up mean 6 months; measured with: Strengths and difficulties questionnaire; Better indicated by lower values)												
1	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	60	56	-	SMD 0.22 lower (0.58 lower to 0.15 higher)	⊕⊕OO LOW	CRITICAL
Clinician-rated family observation FU (follow-up mean 6 months; Better indicated by lower values)												
1	randomised trials	serious[3]	no serious inconsistency	no serious indirectness	serious[2]	none	20	17	-	SMD 0.14 lower (0.79 lower to 0.51 higher)	⊕⊕OO LOW	CRITICAL

[1] Un-blinded parental assessment
[2] Sample size does not reach optimum information size
[3] Un-blinded clinician-rated

11 SUBSTANCE MISUSE

Table 11.1: Computer programs versus control for substance misuse at post-treatment

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Computer programs	Control	Relative (95% CI)	Absolute		
Alcohol use (follow-up 9-10 weeks; measured with: Mean past 30 day alcohol use; Better indicated by lower values)												
2	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	432	501	-	SMD 0.15 lower (0.32 lower to 0.03 higher)	⊕⊕OO LOW	CRITICAL
Cigarette use (follow-up 2-10 weeks; measured with: Past 30 day cigarette use and gain score ; Better indicated by lower values)												
4	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	557	621	-	SMD 0.08 lower (0.23 lower to 0.07 higher)	⊕⊕OO LOW	CRITICAL
Marijuana use (follow-up 9-10 weeks; measured with: Past 30 day marijuana use; Better indicated by lower values)												
2	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	432	501	-	SMD 0.15 lower (0.28 to 0.02 lower)	⊕⊕OO LOW	CRITICAL

Illicit prescription use (follow-up mean 9 weeks; measured with: Past 30 day illicit prescription use; Better indicated by lower values)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	244	338	-	SMD 0.07 lower (0.23 lower to 0.1 higher)	⊕⊕OO LOW	CRITICAL
Depression (follow-up mean 9 weeks; measured with: Children's Depression Inventory; Better indicated by lower values)												
1	randomised trials	serious[2]	no serious inconsistency	no serious indirectness	no serious imprecision	none	244	338	-	SMD 0.18 lower (0.35 to 0.02 lower)	⊕⊕⊕O MODERATE	CRITICAL

[1] High risk of bias for self-reported outcomes
[2] Some risk of reporting bias

Table 11.2: Computer programs versus control for substance misuse at 6 month to 1 year follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Computer programs	Control	Relative (95% CI)	Absolute		
Alcohol use (follow-up 6-12 months; measured with: Past 30 day use and Weekly use; Better indicated by lower values)												
6	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	1741	1843	-	SMD 0.18 lower (0.29 to 0.07 lower)	⊕⊕OO LOW	CRITICAL
Heavy alcohol use (follow-up mean 10 months; assessed with: Onset of heavy alcohol use)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	26/771 (3.4%)	25/779 (3.2%)	RR 1.05 (0.61 to 1.8)	2 more per 1000 (from 13 fewer to 26 more)	⊕⊕OO LOW	CRITICAL
								3.2%		2 more per 1000 (from 12 fewer to 26 more)		
Cigarette use (follow-up 6-12 months; Better indicated by lower values)												
6	randomised trials	very serious[1]	serious[2]	no serious indirectness	no serious imprecision	none	1743	1837	-	SMD 0.21 lower (0.42 lower to 0.01 higher)	⊕OOO VERY LOW	CRITICAL
Marijuana use (follow-up 6-12 months; measured with: Past 30 day use; Better indicated by lower values)												

5	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	989	1081	-	SMD 0.18 lower (0.27 to 0.1 lower)	⊕⊕OO LOW	CRITICAL
Illicit prescription use (follow-up mean 12 months; measured with: Past 30 day use; Better indicated by lower values)												
3	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	693	807	-	SMD 0.11 lower (0.21 lower to 0 higher)	⊕⊕OO LOW	CRITICAL
Inhalant use (follow-up mean 12 months; Better indicated by lower values)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	434	430	-	SMD 0.08 lower (0.21 lower to 0.05 higher)	⊕⊕OO LOW	CRITICAL
Depression (measured with: Children's Depression Inventory; Better indicated by lower values)												
3	randomised trials	serious[3]	serious[4]	no serious indirectness	no serious imprecision	none	693	807	-	SMD 0.07 lower (0.45 lower to 0.31 higher)	⊕⊕OO LOW	CRITICAL

[1] High risk of bias for self-reported outcomes
[2] I^2 85%
[3] Some risk of reporting bias
[4] I^2 91%

Table 11.3: Computer programs versus control for substance misuse at 2 year follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Computer programs	Control	Relative (95% CI)	Absolute		
Alcohol use (follow-up mean 2 years; measured with: Past 30 day alcohol use and weekly alcohol use; Better indicated by lower values)												
4	randomised trials	very serious[1]	no serious inconsistency[2]	no serious indirectness	no serious imprecision	none	1408	1387	-	SMD 0.17 lower (0.29 to 0.05 lower)	⊕⊕OO LOW	CRITICAL
Heavy weekly alcohol use (follow-up mean 2 years; assessed with: Drinks per week: 3-4 for boys and 2-3 for girls)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	63/771 (8.2%)	77/779 (9.9%)	RR 0.83 (0.6 to 1.14)	17 fewer per 1000 (from 40 fewer to 14 more)	⊕⊕OO LOW	CRITICAL
								9.9%		17 fewer per 1000 (from 40 fewer to 14 more)		
Cigarette use (follow-up mean 2 years; measured with: Past 30 day cigarette use; Better indicated by lower values)												
3	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	637	608	-	SMD 0.13 lower (0.24 to 0.02 lower)	⊕⊕OO LOW	CRITICAL
Marijuana use (follow-up mean 2 years; measured with: 30 day marijuana use; Better indicated by lower values)												

3	randomised trials	very serious[1]	serious[3]	no serious indirectness	no serious imprecision	none	637	608	-	SMD 0.26 lower (0.48 to 0.05 lower)	⊕OOO VERY LOW	CRITICAL
Illicit prescription use (follow-up mean 2 years; measured with: Past 30 day illicit prescription use; Better indicated by lower values)												
2	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	471	465	-	SMD 0.2 lower (0.44 lower to 0.04 higher)	⊕⊕OO LOW	CRITICAL
Inhalant use (follow-up mean 2 years; measured with: Pat 30 day inhalant use; Better indicated by lower values)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	415	413	-	SMD 0.06 lower (0.2 lower to 0.07 higher)	⊕⊕OO LOW	CRITICAL
Depression (follow-up mean 2 years; measured with: Children's Depression Inventory; Better indicated by lower values)												
2	randomised trials	serious[4]	serious[5]	no serious indirectness	no serious imprecision	none	465	456	-	SMD 0.17 higher (0.2 lower to 0.54 higher)	⊕⊕OO LOW	CRITICAL

[1] High risk of bias for self-reported outcomes
[2] I^2 50%
[3] I^2 61%
[4] Some risk of reporting bias
[5] I^2 68%

Table 11.4: Computer programs versus control for substance misuse at 3 year follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Computer programs	Control	Relative (95% CI)	Absolute		
Alcohol use (follow-up mean 3 years; measured with: Past 30 day alcohol use and weekly alcohol use; Better indicated by lower values)												
2	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	843	826	-	SMD 0.12 lower (0.22 to 0.02 lower)	⊕⊕OO LOW	CRITICAL
Heavy alcohol use (follow-up mean 3 years; assessed with: Onset of heavy weekly alcohol use (3-4 drinks for boys and 2-3 for girls))												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	144/671 (21.5%)	185/677 (27.3%)	RR 0.79 (0.65 to 0.95)	57 fewer per 1000 (from 14 fewer to 96 fewer)	⊕⊕OO LOW	CRITICAL
								27.3%		57 fewer per 1000 (from 14 fewer to 96 fewer)		
Cigarette use (follow-up mean 3 years; measured with: Past 30 day cigarette use; Better indicated by lower values)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	172	149	-	SMD 0.08 lower (0.3 lower to 0.14 higher)	⊕OOO VERY LOW	CRITICAL
Marijuana use (follow-up mean 3 years; measured with: Past 30 day marijuana use; Better indicated by lower values)												

1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	172	149	-	SMD 0.16 lower (0.38 lower to 0.06 higher)	⊕OOO VERY LOW	CRITICAL

[1] High risk of bias for self-reported outcomes
[2] Sample size did not reach optimum information size

Table 11.5: Computer programs versus control for substance misuse at 6 year follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Computer programs**	**Control**	**Relative (95% CI)**	**Absolute**		
Alcohol use (follow-up mean 6 years; measured with: Past 30 day alcohol use; Better indicated by lower values)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	152	131	-	SMD 0.21 lower (0.44 lower to 0.02 higher)	⊕OOO VERY LOW	CRITICAL
Heavy alcohol use (follow-up mean 6 years; measured with: Number of alcohol binges (>5 drinks in one day) in past 30 days; Better indicated by lower values)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	152	131	-	SMD 0.11 lower (0.35 lower to 0.12 higher)	⊕OOO VERY LOW	CRITICAL
Cigarette use (follow-up mean 6 years; measured with: Past 30 day cigarette use; Better indicated by lower values)												

1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	152	131	-	SMD 0.06 lower (0.29 lower to 0.17 higher)	⊕OOO VERY LOW	CRITICAL
Marijuana use (follow-up mean 6 years; measured with: Past 30 day marijuana use; Better indicated by lower values)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	152	131	-	SMD 0.01 lower (0.25 lower to 0.22 higher)	⊕OOO VERY LOW	CRITICAL

[1] High risk of bias for self-reported outcomes
[2] Sample size did not reach optimum information size

Table 11.6: Computer programs versus control for substance misuse at 7 year follow-up

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Computer programs**	**Control**	**Relative (95% CI)**	**Absolute**		
Alcohol use (follow-up mean 7 years; measured with: Past 30 day alcohol use; Better indicated by lower values)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	143	139	-	SMD 0.21 lower (0.44 lower to 0.03 higher)	⊕OOO VERY LOW	CRITICAL
Heavy alcohol use (follow-up mean 7 years; measured with: Number of alcohol binges (>5 drinks in one day) in past 30 days; Better indicated by lower values)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	143	139	-	SMD 0.18 lower (0.42 lower to	⊕OOO VERY	CRITICAL

										0.05 higher)	LOW	
Cigarette use (follow-up mean 7 years; measured with: Past 30 day cigarette use; Better indicated by lower values)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	143	139	-	SMD 0.27 lower (0.5 to 0.03 lower)	⊕OOO VERY LOW	CRITICAL
Marijuana use (follow-up mean 7 years; measured with: Past 30 day marijuana use; Better indicated by lower values)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	143	139	-	SMD 0.02 lower (0.25 lower to 0.21 higher)	⊕OOO VERY LOW	CRITICAL

[1] High risk of bias for self-reported outcomes
[2] Sample size did not reach optimum information size

Table 11.7: Screening and brief intervention compared with control for substance misuse

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Screening and brief intervention for alcohol misuse**	**Control 3M FU**	**Relative (95% CI)**	**Absolute**		
Presence of alcohol use disorder 3M fU (follow-up mean 3 months; assessed with: Alcohol use disorders identification test)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	67/205 (32.7%)	79/206 (38.3%)	RR 0.85 (0.66 to	58 fewer per 1000 (from 130 fewer to	⊕⊕OO	CRITICAL

									1.11)	42 more)	LOW	
								8.5%		ewer per 1000 (from 63 fewer to 20 more)		
Binge drinking 3M FU (follow-up mean 3 months; assessed with: Alcohol use disorders identification test)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	59/205 (28.8%)	71/206 (34.5%)	RR 0.84 (0.63 to 1.11)	55 fewer per 1000 (from 128 fewer to 38 more)	⊕⊕OO LOW	CRITICAL
								4.5%		ewer per 1000 (from 128 fewer to 38 more)		
Presence of alcohol use disorder 6M FU (follow-up mean 6 months; assessed with: Alcohol use disorders identification test)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	67/209 (32.1%)	73/208 (35.1%)	RR 0.91 (0.7 to 1.2)	32 fewer per 1000 (from 105 fewer to 70 more)	⊕⊕OO LOW	CRITICAL
								5.1%		ewer per 1000 (from 105 fewer to 70 more)		
Binge drinking 6M FU (follow-up mean 6 months; assessed with: Alcohol use disorders identification test)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	69/209 (33%)	71/208 (34.1%)	RR 0.97 (0.74 to 1.27)	10 fewer per 1000 (from 89 fewer to 92 more)	⊕⊕OO LOW	CRITICAL
								4.1%		ewer per 1000 (from 89 fewer to 92 more)		

Presence of alcohol use disorder 12M FU (follow-up mean 12 months; assessed with: Alcohol use disorders identification test)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	58/201 (28.9%)	70/202 (34.7%)	RR 0.83 (0.62 to 1.11)	59 fewer per 1000 (from 132 fewer to 38 more)	⊕⊕OO LOW	CRITICAL
								33%		ewer per 1000 (from 125 fewer to 36 more)		
Binge drinking 12M FU (follow-up mean 12 months; assessed with: Alcohol use disorders identification test)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	61/201 (30.3%)	73/202 (36.1%)	RR 0.84 (0.64 to 1.11)	58 fewer per 1000 (from 130 fewer to 40 more)	⊕⊕OO LOW	CRITICAL
								2.5%		ewer per 1000 (from 117 fewer to 36 more)		

[1] High risk of bias for self-reported outcomes

Table 11.8: Computerised normative feedback versus control for substance misuse

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Computerised normative feedback	Control	Relative (95% CI)	Absolute		
Remission from any substance use at post-treatment (follow-up mean 3 months; assessed with: Youth risk behaviour surveillance survey)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	116/352 (33%)	42/245 (17.1%)	RR 0.81 (0.74 to 0.89)	33 fewer per 1000 (from 19 fewer to 45 fewer)	⊕⊕OO LOW	CRITICAL
								17.1%		32 fewer per 1000 (from 19 fewer to 44 fewer)		
Remission from any substance use at follow-up (follow-up mean 14 months; assessed with: Youth risk behaviour surveillance survey)												
1	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	101/352 (28.7%)	55/245 (22.4%)	RR 0.92 (0.84 to 1.01)	18 fewer per 1000 (from 36 fewer to 2 more)	⊕⊕OO LOW	CRITICAL
								22.5%		18 fewer per 1000 (from 36 fewer to 2 more)		

[1] High risk of bias for self-reported outcomes

12 AUTISM

Table 12.1: GRADE Computerised social skills training for low-functioning autism

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Computer-based social skills training	Control	Relative (95% CI)	Absolute		
Emotion recognition (follow-up mean 6 weeks; measured with: Emotion test; Better indicated by lower values)												
1	randomised trials	no serious risk of bias[1]	no serious inconsistency	serious[2]	serious[3]	none	11	14	-	SMD 0.57 lower (1.37 lower to 0.24 higher)	⊕⊕OO LOW	CRITICAL
Facial recognition (follow-up mean 6 weeks; measured with: Benton Facial Recognition Test (Short form); Better indicated by lower values)												
1	randomised trials	no serious risk of bias[1]	no serious inconsistency	serious[2]	serious[3]	none	11	14	-	SMD 0.43 lower (1.23 lower to 0.37 higher)	⊕⊕OO LOW	CRITICAL
Social skills (parent-rated) (follow-up mean 6 weeks; measured with: Social skills rating system (SSRS) ; Better indicated by lower values)												
1	randomised trials	serious[4]	no serious inconsistency	serious[2]	serious[3]	none	14	11	-	SMD 0.91 lower (1.75 to 0.08 lower)	⊕OOO VERY LOW	CRITICAL
Social skills (researcher-rated) (follow-up mean 6 weeks; measured with: Social skills observation; Better indicated by lower values)												

1	randomised trials	no serious risk of bias[1]	no serious inconsistency	serious[2]	serious[3]	none	14	11	-	SMD 0.77 lower (1.6 lower to 0.05 higher)	⊕⊕OO LOW	CRITICAL

[1] Risk of bias from un-blinded providers. Contributed to downgrading for indirectness
[2] High degree of therapist input
[3] Sample size did not reach the optimum information size
[4] Risk of bias from un-blinded providers and parent-rated assessment

Table 12.2: GRADE Computerised social skills training for high-functioning autism

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Computer-based social skills training**	**Control**	**Relative (95% CI)**	**Absolute**		
Emotion recognition (follow-up mean 6 weeks; measured with: Emotion test; Better indicated by lower values)												
1	randomised trials	no serious risk of bias[1]	no serious inconsistency	serious[2]	serious[3]	none	13	11	-	SMD 1.43 lower (2.35 to 0.51 lower)	⊕⊕OO LOW	CRITICAL
Facial recognition (follow-up mean 6 weeks; measured with: Benton Facial Recognition Test (Short form); Better indicated by lower values)												
1	randomised trials	no serious risk of bias[1]	no serious inconsistency	serious[2]	serious[3]	none	13	11	-	SMD 1.23 lower (2.12 to 0.34 lower)	⊕⊕OO LOW	CRITICAL
Social skills (parent-rated) (follow-up mean 6 weeks; measured with: Social skills rating system (SSRS) ; Better indicated by lower values)												
1	randomised trials	serious[4]	no serious inconsistency	serious[2]	serious[3]	none	11	13	-	SMD 0.28 higher (0.53 lower to 1.09	⊕OOO VERY	CRITICAL

										higher)	LOW	
Social skills (researcher-rated) (follow-up mean 6 weeks; measured with: Social skills observation; Better indicated by lower values)												
1	randomised trials	no serious risk of bias[1]	no serious inconsistency	serious[2]	serious[3]	none	11	13	-	SMD 1.34 lower (2.24 to 0.43 lower)	⊕⊕OO LOW	CRITICAL

[1] Risk of bias from un-blinded providers. Contributed to downgrading for indirectness
[2] High degree of therapist input
[3] Sample size did not reach the optimum information size
[4] Risk of bias from un-blinded providers and parent-rated assessment

13 TOURETTE SYNDROME

Table 13.1: GRADE profile for Videoconference CBIT for tourette syndrome

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Video-conference CBIT	Face-to-face CBIT	Relative (95% CI)	Absolute		
Change in YGTSS total tic score (follow-up mean 10 weeks; measured with: YGTSS total tic scale; range of scores: 0-50; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious[1]	none	10	8	-	SMD 0.18 lower (1.11 lower to 0.75 higher)	⊕⊕OO LOW	CRITICAL
Change in YGTSS total tic score at 4m follow-up (follow-up mean 4 months; measured with: YGTSS total tic scale; range of scores: 0-50; Better indicated by lower values)												
1	randomised trials	no serious risk of bias[2]	no serious inconsistency	no serious indirectness	very serious[1]	none	9	7	-	SMD 0.32 lower (1.32 lower to 0.67 higher)	⊕⊕OO LOW	CRITICAL
Clinical Global Impressions much or very much improved (follow-up mean 10 weeks; assessed with: CGI improvement scale)												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious[1]	none	8/10 (80%)	6/8 (75%)	RR 1.07 (0.64 to 1.77)	5 more per 100 (from 27 fewer to 58 more)	⊕⊕OO LOW	IMPORTANT

Global Impressions much or very much improved at 4m follow-up (follow-up mean 4 months; assessed with: CGI improvement scale)												
1	randomised trials	no serious risk of bias[2]	no serious inconsistency	no serious indirectness	very serious[1]	none	5/9 (55.6%)	3/7 (42.9%)	RR 1.30 (0.46 to 3.65)	13 more per 100 (from 23 fewer to 100 more)	⊕⊕OO LOW	IMPORTANT

[1] Sample size does not reach optimum information size
[2] Minimal additional drop-out at follow-up and risk of attrition bias may be low

14 PSYCHOSIS

Table 14.1: GRADE profile for Computer-assisted cognitive remediation therapy compared with computer game control

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	CACR	Control	Relative (95% CI)	Absolute		
Total symptoms of schizophrenia (follow-up 9 weeks; measured with: PANSS total; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	18	14	-	SMD 0.18 higher (0.52 lower to 0.88 higher)	⊕⊕OO LOW	CRITICAL
Positive symptoms of schizophrenia (follow-up 9 weeks; measured with: PANSS positive; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	18	14	-	SMD 0.26 higher (0.45 lower to 0.96 higher)	⊕⊕OO LOW	CRITICAL
Negative symptoms of schizophrenia (follow-up 9 weeks; measured with: PANSS negative; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	18	14	-	SMD 0.14 higher (0.56 lower to 0.84 higher)	⊕⊕OO LOW	CRITICAL
Global psychopathology (follow-up 9 weeks; measured with: PANSS; Better indicated by lower values)												

1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	18	14	-	SMD 0.1 higher (0.6 lower to 0.8 higher)	⊕⊕OO LOW	CRITICAL
Social and occupational functioning (follow-up 9 weeks; Better indicated by lower values)												
1	randomised trials	no serious risk of bias	no serious inconsistency	serious[1]	serious[2]	none	18	14	-	SMD 0.07 lower (0.77 lower to 0.63 higher)	⊕⊕OO LOW	CRITICAL

[1] High degree of therapist input - independent effect of the program is unclear
[2] Sample size does not reach optimum information size

APPENDIX 13: EXCLUDED STUDIES

Study ID	Reason for exclusion
Abascal 2004	Outcomes
Ahmead 2008	Design
Amir 2008	Cannot use data
Amir 2009	Population
Anderson 2012	Outcomes
Andrews 2011	Outcomes
Arpin-Cribbie 2012	Intervention
Attwood 2012	Design
Bar-Haim 2011	Cannot use data
Beintner 2012	Design
Bendsten 2012	Population
Bergh 2002	Intervention
Bewick 2008	Population
Bosworth 1996	Cannot use data
Botella 2010	Population
Bowen 2012	Outcomes
Britton 2013	Cannot use data
Bryson 1999	Outcomes
Campbell 2005	Cannot use data
Carey 2009	Population
Carrard 2011	Population
Cavanagh 2011	Design
Celio 2000	Population
Celio 2002	Outcomes
Cheng 2008	Intervention
Cho 2002	Outcomes
Cho 2004	Intervention
Cousineau 2010	Outcomes
Croom 2009	Population
Cunningham 2009	Outcomes
Dewis 2001	Cannot use data

Doumas 2008	Population
Duncan 2000	Outcomes
Ekman 2011	Population
Eldar 2012	Cannot use data
Epstein 2009	Outcomes
Fernandez-Aranda 2009	Population
Ferrer-García 2009	Intervention
Fichter 2012	Population
Galbiati 2009	Outcomes
Gevensleben 2009a	Intervention
Gevensleben 2009b	Intervention
Gevensleben 2010	Intervention
Golan 2010	Intervention
Gollings 2006	Population
Gorini 2010	Intervention
Griffiths 2006	Design
Gutiérrez-Maldonado 2009	Intervention
Gutiérrez-Maldonado 2010	Intervention
Hayes 2002	Design
Heeren 2011	Cannot use data
Hickie 2010	Population
Hirai 2012	Intervention
Hoffman 2003	Intervention
Ireland 2003	Intervention
Jacobi 2007	Population
Jacobi 2012	Population
Johnstone 2012	Cannot use data
Julian 2012	Population
Kappes 1985	Intervention
Karbasi 2010	Intervention
Kay-Lambkin 2011	Population
Kenardy 2003	Population
Kennel 2010	Intervention
Klingberg 2002	Outcomes

Kypri 2005	Population
Kypri 2009	Population
Kypri 2013	Population
Lang 2009	Intervention
Lange 2001	Population
Lange 2003	Population
Ljotsson 2007	Intervention
Logemann 2010	Intervention
López-Guimerà 2011	Intervention
Lovell 2006	Population
Low 2006	Population
Luce 2005	Design
Lyneham 2006	Intervention
Mailey 2010	Intervention
Maio 2005	Cannot use data
Markie-Dadds 2006	Intervention
McGrath 2011	Intervention
Mewton 2012	Design
Muller 2011	Population
Newton 2010	Intervention
Norman 2008	Cannot use data
O'Reilly 2007	Population
Palfai 2011	Population
Paxton 2007	Population
Perreau-Linck 2010	Intervention
Prins 2011	Outcomes
Radhu 2012	Intervention
Richardson 2010	Design
Ruble 2013	Intervention
Sanchez-Ortiz 2009	Population
Sanders 2008	Intervention
Schinke 2005a	Outcomes
Schinke 2005b	Outcomes
Schinke 2006	Outcomes

Schinke 2009c	Cannot use data
Schmidt 2008	Population
Shapiro 2007	Population
Sharmer 2001	Population
Shaw 2009	Design
Siemer 2011	Design
Silfvernagel 2012	Population
Silver 2001	Cannot use data
Spence 2006	Intervention
Stallman 2007	Intervention
Stevens 2009	Outcomes
Stice 2012	Population
St-Jaques 2010	Intervention
Tanaka 2010	Cannot use data
Taylor 2006	Population
Teachman 2008	Cannot use data
Thurber 2010	Intervention
Tillfors 2008	Population
Tucha 2013	Outcomes
Twombly 2007	Outcomes
Van Voorhees 2008	Intervention
Van Voorhees 2009a	Outcomes
Van Voorhees 2009b	Intervention
Wagener 2012	Population
Wagner 2013	Population
Wangler 2011	Intervention
Wells 2010	Cannot use data
Whalen 2010	Cannot use data
Whittaker 2012	Outcomes
Williams 2005	Cannot use data
Winzelberg 2000	Population
Yager 2008	Design
Zabinski 2004	Population

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APPENDIX 14: YOUNGMINDS REPORT

INTRODUCTION

YoungMinds is the UK's leading charity committed to improving the emotional well being and mental health of children and young people by ensuring these issues are placed firmly on the public, professional and political agenda. We achieve this though the provision of research, training and development, lobbying, influencing policy and campaigning. Driven by the experiences of children, young people, parents and carers we raise awareness and provide expert knowledge through our professional networks, commissioned projects, participation and outreach work, publications and website.

Staff from across YoungMinds contributed to this consultation and the young people who were involved in the focus groups were keen to share their opinions on a subject they were clearly engaged with. The purpose of the consultation was to capture the views of a number of young people on a range of electronic tools and resources designed to support young people with mental health problems such as anxiety and depression. To this end we held two focus groups, one in London and one in Bristol where young people explored some specific tools and then took part in a general discussion to find out what they thought about them. We then partially transcribed the audio footage from the focus groups as well as some of the young people's written notes and from them developed six themes which are discussed later on in this report.

Those themes were:

- Audience appeal and relevance
- Therapeutic benefit
- Context of access

- Facilitating relationships
- Potential Damage
- Agency

Marc Prensky coined the term **'digital native'** and used it to describe people who; *"represent the first generations to grow up with this new technology. They have spent their entire lives surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age."* This description fits perfectly the young people we spoke to in focus groups and they instinctively appreciated the value of supporting people, in particular younger people, using the toys and tools of the digital age. Many participants in the focus groups expressed an interest in reading this report and we would be keen for us to circulate it to those people if at all possible.

The scope of this consultation did not include the possibility of collecting quantitative data and the qualitative data collected is not to be seen as representative of the views of young people but there are clear messages coming from the various groups and within the groups a consensus was arrived at in most cases. Where this is not the case this has been noted.

Please note that all quotes in italics contained in this report are direct quotes from the young people who attended the focus groups. Spelling and grammar from written quotes have been left intact.

Focus Groups

Agreed questions for the focus groups

1. *Of the products you have tried:*
    - *Would you ever use any of them?*
    - *Why?*
    - *What did you like about them?*
    - *What features work best?*
    - *What did you not like about them?*
2. *Would you prefer to use products you can use alone or with a therapist?*
3. *Have you ever used products like these before?*
4. *Do you think they would help if you were feeling depressed of anxious?*

All participants were given copies of the questions as well as the opportunity to discuss them with the focus group facilitators.

Venue:	**YoungMinds offices, London**
Number of participants:	**4**
Gender of participants:	**F, F, F, F**
Ages of participants:	**18, 18, 19, 25**

Three out of four young people who attended had accessed CYP specialist mental health services

Activity

The group of young people were recruited though the YoungMinds national network of young campaigners and those that attended were all from London and the South East. Most of them had previously accessed mental health services for a range of reasons and all were passionate about being able use their experiences in a positive way.

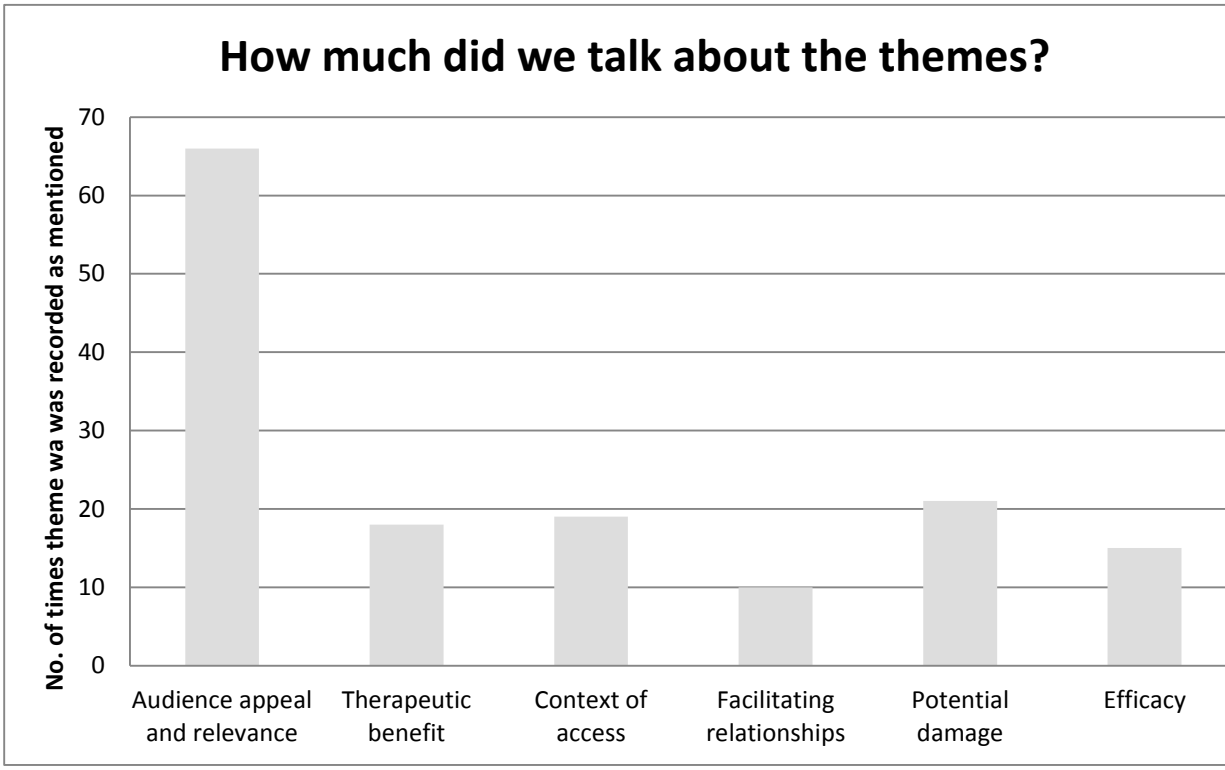
The young people looked at the following tools:

Cool Teens, Sparks, Mood Gym and BRAVE for Teenagers

The session with the group was split into two parts:

- An opportunity to 'play' with and explore the various tools, either in pairs or alone
- A discussion around the strengths and weaknesses of the tools with specific reference the agreed questions

The agreed questions were used to guide both the exploration of the electronic resources and the discussions which followed.



Audience appeal and relevance

The young people spoke extensively about this theme which included points about the presentation of the content, the pace of the activities, how inclusive or exclusive the content was, whether it was presented in a clear or confusing way and how engaging the resources were overall.

The look and feel of the resource was seen as important as it determines how much time and energy the young people would give to interacting with it with participants using anthropomorphic terms to describe the resource. For the young people who took part in this focus group the look and feel of the resources formed the basis for the preference, or lack thereof, for a relationship with that resource. In short, if they didn't like the look of the tool they wouldn't want to use it.

"It doesn't matter if its plain but it matters if it's really out of date.It doesn't have to be bells and whistles but if it's looking this old and it's not user friendly at all. Most NHS sites have eyesight zoom in, text read aloud and you need that for most CAMHS services because of inclusion."

"It needs to be relatively simple but with some sport of theme, it helps the information to get in."

"It looks a lot friendlier"

"Like the layout looks friendly and open"

"Dull layout has to compete with Apple and Apps"

"I like that it's got a personality"

"I would sit for an hour and interact with this website"

Pace was important too and was one of the reasons why the young people liked the more interactive resources, as they could generate a sense of slow and steady movement which participants felt was beneficial to them.

"I like the pace of the game, slow is good as speed can make you more anxious"

"First I thought maybe it's too slow but actually its pace works, too fast might acerbate anxiety"

The resources that the young people looked at were extremely varied and they had some strong opinions on the varying degrees of success that the presentation of the content achieved. There was a certainly a preference for a more interactive approach which involved less text and more games or video clips as well as the opportunity to personalise your experience. Part of this preference is certainly due to a familiarity with this type of approach; the young people are used to electronic media which make an effort to engage them and saw the more text based simply as old fashioned and not for them. They also felt that using too much text would exclude many people who might struggle with reading for a variety of reasons.

However, the types of media (music, films, and sound effects) used to engage people could be off putting if they were inappropriate or overused.

"It's got a beautiful chilled out interface. It's like a game and I think that its 2013 and we are used to things being quite game-like" (referring *Act Companion*, an online resource used prior to the focus group)

"I hate the burping"

"Slide show confusing for those with dyslexia"

"Seems like wading through all this information to get what you want to find out, i.e. what is the problem and what can I do?"

"Outdated site design adult orientated"

"Huge amounts of text off putting"

"The audio made it really accessible"

Therapeutic benefit

The young people's primary concern was whether or not the resources would actually help someone to cope with, or overcome, mental health problems and they had a range of ideas about how an electronic resource might do this. The key ideas discussed were about how the resources might reinforce positive thoughts, benefit people with social anxiety, provide re-assurance and facilitate the opportunity for people to reflect on negative thoughts and experiences in a 'safe' way.

The game-like interface of some of the resources was seen as particularly positive because it facilitated a level of detachment which enabled people to become more reflective, specifically creating an avatar helped to generate a feeling of safety. The immersive nature of the game play also slowed the pace down, which the young people found relaxing and in turn was seen as a good thing for people with high levels of anxiety.

"I like the fact that it's kind of removed, if you are not completely anxious or you just need a little boost then it could help. It's not so on you, it's inadvertently lifting you up."

"It's one step removed the characters so it's less personal, acting out through an avatar helps. It's fun to play and it's inadvertently making you think happy thoughts. At first we thought this was a bit slow because of the types of games we are used to but if you are talking about anxiety then getting you to slow down and think is good."

"It's very clever because from my experience people who are socially anxious like to sit in and play computer games and it reminded me of playing final fantasy and world of war craft and they are very calming games where you can put your own focus in."

"It's one step removed so it makes me feel less vulnerable"

The young people also talked specifically about how the resources might reassure someone who was worried about how they were coping with their own emotions as well as with the perceived stigma associated with mental health.

"There was more reassurance, the am I a freak question? A man pops up and says no! You are certainly not a freak! That was quite cool"

"Liked reassurance with common worries"

Context of access

The participants made several suggestions about the contexts in which the electronic resources might be used most effectively as well as in which they simply wouldn't work at all. The group discussed who the various resources might benefit most, where they would be best delivered as well as (loosely speaking) how they might fit into a package of care.

The young people talked about the how the game-based resource might be useful for people for people with social anxiety but that it would need to form part of a wider package of support with other therapies in order to help. The participants felt that a therapist could use these packages as tools to support young people and would be needed to give the resources legitimacy as well as to initiate their use in the first place. The young people said that if a trusted professional recommended a resource to them then they would be far more likely to use it and if they were not engaged straight away they would give it longer before the quit.

"I think it's a good tool but for a very specific type of person. It's really good for people with social anxiety because it's less of a direct medium, it's not personal. For the majority of people I don't think that it's going to do a lot for people who have general anxiety. It would for someone who is intensely anxious along with other complimentary therapies."

"If a doctor referred you to this then you might stick with it. There are waiting lists and if in the meantime they said that this is what you can use to monitor your feelings then you might stick with it, if it had the legitimacy of a doctor backing it. But if you were just feeling bad and looking for a potential source to help you feel better then you wouldn't pick this one."

"...but you still need to have someone along with you to help you cos you might not want to set those goals in the first place."

"I don't think e-therapy can work without a therapist. If the therapist said that go and try this at home for a week or two and then come back to me, tell me what you thought, did it help? Using it as a tool rather than a diagnosis...."

“It might work with a parent.”

“It might work in a library but it needs to be private.”

“Even though it’s for me to feel better I don’t want anyone else to know about me doing this.”

“Some of them should be given to year 7s when you go into school. It’s just in tandem with their work, it’s just like we are developing you intellectually and holistically. You would have to think of ways in which to do this that didn’t put people off.”

Facilitating relationships

The group spoke extensively about the importance of human relationships in helping young people engage with the resources but they also talked about ways in which the resources could facilitate those relationships. This is a complex theme as the young people talked about how this might happen physically though the guidance of a professional as well as virtually, again, with professional guidance and finally how a simulation of human interaction might be positive as well.

Some of the young people had previously used online mentoring and other forms of direct support and generally felt positive about them and talked about how using a resource with the added contact with a ‘trainer’ on line or on the phone would be useful. Having a photo of the trainer was seen as positive as was the use of real people in video clips as this all helped people to engage with the resource. The young people felt strongly that it was not possible to replace a person with a machine and talked specifically about their own experiences of the relationship being more important that the therapy.

“Meet your brave trainer, that’s a good idea, kind of like cyber mentors.”

“Phone contact real people; positive”

“Programme it did say that is was going to be along with someone else, it said that your work would be logged so you can keep a track. You might not was to set a

really big goal, so you can set yourself lots of little ones and eventually you can build yourself up, that's a good idea but you still need to have someone along with you to help you cos you might not want to set those goals in the first place."

"In my personal experience I don't think there was a place for e-therapy. CBT didn't work for me with a proper therapist so I don't understand how it would work with a computer. The relationship is the important bit; I had a really good relationship with my OT and I put all my recovery down to them and I didn't get on well at all with my therapist who I didn't get on with al all. So I think it's definitely the person rather than programme.

"I don't think e-therapy can work without a therapist. If the therapist said that go and try this at home for a week or two and then come back to me, tell me what you thought, did it help? Using it as a tool rather than a diagnosis, so you can only programme a computer to come up with certain answers. You can't replace a person with a computer, it just won't work at all."

However that view was not universally held.

"As someone who walks towards a building or a person with an idea in their head of what's going to happen and it all works until you get there and it blocks. I associate my care co-ordinator and all my psychiatric care as a trigger because I just go into blank trauma mode. For me if there is a person behind the programme then that's great. It comes down to my social phobia, taking all those people out is fantastic. It's like wow, one computer of a million health care professionals – I know who I'd prefer to talk to."

Potential for damage

The participants made several significant points about factors which might prevent them from engaging with the electronic resources but they also described ways in which they felt the resources might potentially cause them harm or at the very least actively dissuade them from any future use. The young people felt that some of the content was likely to be a trigger and talked about the possibility of the questions they were being asked leaving them feeling 'pathologised' and with

more negative thoughts than they started with. There was certainly more negative feedback from the group on particular resources but there was an important general point to take about the need to be very cautious when asking potentially vulnerable young people to open themselves up to potentially damaging emotions without the possibility an present professional being able to provide any immediate support.

"You can get Joe Bloggs going on it and he's completely healthy and by the time he's finished he's saying "I better check myself in". Unless you are referred by a doctor you can self assign symptoms to yourself."

"Drags you down"

"If you are in a bad place you don't want to be told you are highly anxious."

"Using it as a tool for self diagnosis tool is a bad idea. Self diagnosis causes problems."

"Like one big delusion"

"Anxiety of self assessment – Severely depressing questions – triggering "I am going to die"

Agency

The young people in the focus group discussed several points which related to the concept of agency; the importance of being able to take control of your own care, set goals for your future and learn about the issues that are affecting you. From our experience in running engagement and participation work with young people who have experienced mental health problems we know that young people can gain huge benefits from direct involvement in decisions affecting their own care. It is apparent that when part of that care might be delivered electronically that a similar idea emerged in this focus group.

"That was quite cool and the setting goals area was good, you could easily log things and set rewards."

"Found FAQs useful"

"Learning about the four aspects of anxiety = good"

"Educational value is high and would be a useful tool for PSHE lessons for years 7 to 8."

"I can check in, see how I was at the same time last week and see oh yeah I've still got that anxiety so perhaps that was about something different."

"You are your own gage and are not feeding into someone else's model of something. You are just measuring yourself."

"You might not was to set a really big goal, so you can set yourself lots of little ones and eventually you can build yourself up."

"It's good though, it's a long term steady build towards an achievement. The achievement was smiles and the reward was cake and it's recognising this like that, the little things and building them up. It's the same with mood trackers and mood logs. If you can assess yourself and your progress you are more likely to be able to pin point what's brining you down and sending you up."

Focus group 2

Venue:	**The Station, Bristol**
Number of participants:	**11**
Gender of participants:	**F, F, F, F, F, F, F, F, M, M, M**
Ages of participants:	**14, 14, 14, 15, 17, 18, 18, 18, 19, 20, 25**

Four people who attended had accessed CYP specialist mental health services

Activity

The group of young people were recruited though a youth counselling service based in Bristol called 'Off the Record'. Four had previously accessed mental health services for a range of reasons, all the young people who attended were members of the 'Mentality' anti stigma campaign and all were passionate about being able use their experiences in a positive way.

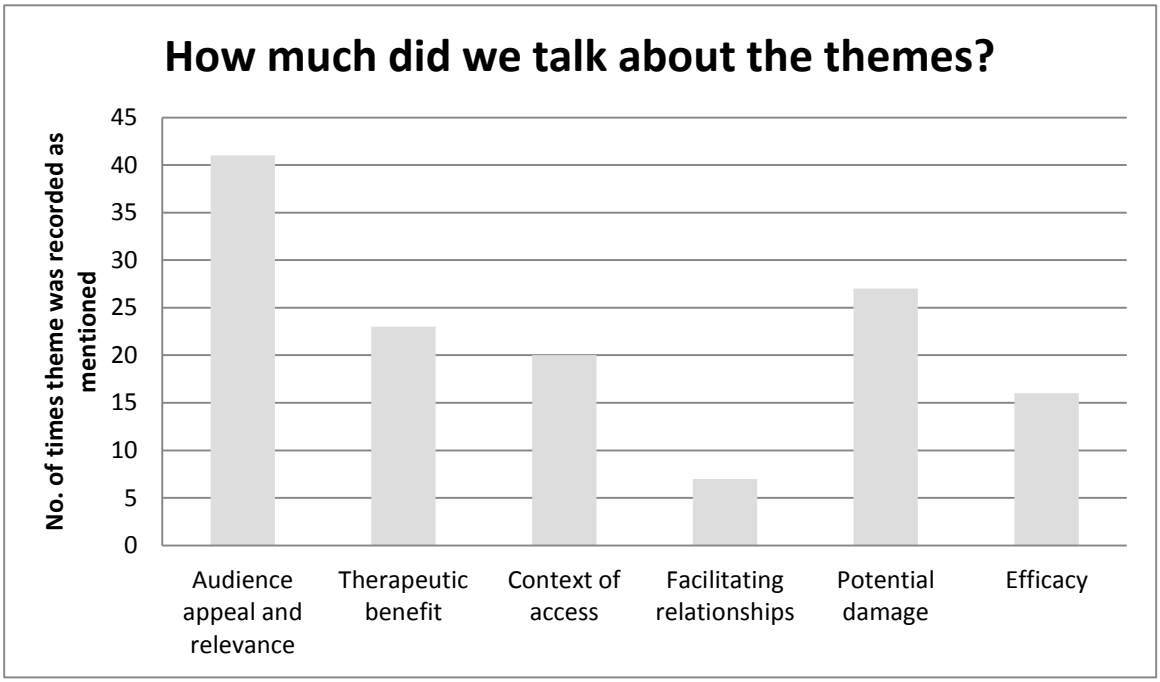
The young people looked at the following tools:

Sparks, Mood Gym and BRAVE for Teenagers

The session with the group was split into two parts:

- An opportunity to 'play' with and explore the various tools, either in pairs or alone
- A discussion around the strengths and weaknesses of the tools with specific reference the agreed questions

The agreed questions were used to guide both the exploration of the electronic resources and the discussions which followed.



Audience appeal and relevance

The young people who took part in the focus group spent a significant amount of time discussing issues around Audience appeal and relevance and echoed many of the ideas coming from the previous focus group. There was a general consensus amongst the participants that, in order for young people to want to engage with an electronic resource to improve their mental health, the resource would need to look good, be accessible to a wide variety of people and be user friendly.

The young people preferred the resources that actively engaged them through games, appropriate questioning or other interactive means but they were unimpressed by what they perceived as the overuse of sound effects as well characters or terminology they felt was patronising. There were comments from the group about what they felt was the appropriate age group of someone accessing the resources, which was significantly below the stated age range. For example they felt that BRAVE for teenagers 13 to 17 was appropriate for 9 to 13

year olds as it was trying too hard to be 'down with the kids'. This sense of being patronised came across very strongly and is an issue because the group said very clearly that they would only give the initial website page a look and wouldn't click through at all if they didn't like the look of what they saw.

"It's a very interesting way of doing this, giving you a ranking at the beginning"

"I like the fact that it tries to entertain you as well as help you."

"My attention span was too short for this."

"I liked how it was unconventional, not answering questions all the time."

"There must be something personalisable."

"If the first page looks bad then I wouldn't go on it."

"I did like it because it was tailored to you and felt relevant to you."

"Emily is getting bored."

"What does it mean?"

"Nothing to do except read."

"Too much writing for under 15s"

"It was OK but I found it a little patronising. As C said it was like a BBC Bitesize from the late 90's, trying to be hip and down with the kids whilst being incredible patronising."

"Depending on the age group we thought if should be 9 to 13, it's a bit too childish and patronising. Most teenagers wouldn't like to use it."

"Liked the multiple choices, I don't like it if you get something wrong and don't find out until the end, you can change as you go along."

Therapeutic benefit

Some of the young people in the focus group had previously used online tools which they felt were useful for supporting their emotional wellbeing. This meant that we were about to have a discussion on the resources they accessed during the focus group as well as widening out the focus to include other tools which they felt had real benefits.

The young people talked about the need for a resource to allow them to reflect on their emotions but also to be able to distract from them initially in order to calm them down. Several of the young people mentioned the breathing exercise included on one tool as well as 'repeatedly clicking' as being beneficial but there were also comments made about the importance of being encouraged to reflect on thoughts, behaviours and actions.

As part of the discussions we asked the group if they thought that there should be some sort of social aspect to a tool which could help them cope with a mental health problem. There wasn't a simple answer to this and initially the young people felt that this would be inappropriate because issues around safeguarding and triggering, but after some reflection they began to talk about other resources that they had used in which sharing experiences was beneficial to their emotional wellbeing.

"It's good so you are not focussing on what you might have wrong with you, it removes you a bit, and it's a distraction."

"The others you are constantly reminded that that's why you're there, because it's a problem where as this one is kind of a distraction. Just repeatedly clicking things can be a bit therapeutic and that. It's also got someone getting you to do a breathing exercise which if you got really into it (the game) it could be quite useful."

"It's a distraction I prefer clicking on bad thoughts"

"For a tool to work it would need to completely distract you."

"I would need to help you to think about your thoughts in a more constructive way."

“Being able to remove myself from it and then thinking that maybe it wasn’t as bad as I thought.”

“Be able to safely reflect on your thoughts.”

“Liked the bit that talked about the way your thoughts lead to behaviours and your actions that was quite good because it shows that how you are thinking leads to everything.”

“That’s good because it can help people to realise that other people have the same issues as you and that it is an actual thing.”
*“I like **‘The Thoughts room’**, it’s good because to type something into the box and then watch the letters fade away, it’s really relaxing. You can talk to it.”*

***“‘The experience project’**; it can be about emotions or mental health problems or anything and you can write a story and other things and people can respond with their own similar stories.”*

Context of access and Facilitating relationships

The conversation in relation to the two themes above was very much intertwined with this focus group and so we have merged them together.

The young people outlined a few key points in relation to the themes; in particular they felt that, as with the other focus group participants, these types of resources would be of most benefit as part of a package of care. They felt that if a therapist or another trusted person were to suggest they use this as a self help tool then they would be more likely to get something out of it and engage with the resource for longer.

However, there were also comments made about the potential benefits of a young person being able to access a resource on their own should they not wish to engage with a therapist as well as the potential benefits of anonymity. This is an interesting point but presumably in this case the resource itself would need to develop this trust through the user interface and activities. This focus group also discussed online platforms where a young person can talk via email or realtime chat to a mentor or therapist and the consensus was that moderated online forums could also be really useful. Finally this group did feel that in some cases some of the resources could be used in other group contexts to provide information, but only if introduced very sensitively.

"It depends; if a friend has recommended I would give it longer"

"If a therapist I got on with recommended it I would leave it longer."

"There needs to be trust; from a friend or anyone else you trust"

"We like that right at the start it had the circle for the therapist, integrating into a system and it talked about an email system, that's good"

"Some people might have anxiety and might not be able to go to s therapist so they need to be able to use things by themselves."

"If you are in therapy it could also be a good starting point, you go through it and if you don't know what to talk about you can go over what you have done and that. It would be a good way of starting a conversation."

"It's a good way to teach kids about mental health problems. It feels like a teaching tool that you give to kids in year 4 or 5"

"I can imagine using this in school."

"I have been made to do things like this in school where we had to answer really personal questions in front of other people but we just wouldn't give honest answers."

"Good to see other people's stories and compare them to you own."

"I think that it's quite useful that you can access it yourself cos you don't have to tell anyone you are on it"

"Anonymity is important, can you have a social element that is anonymous"

"Childline have a service where you can go online and talk to someone who is actually there, which is really good"

Potential damage

There was a range of different opinions put forward in the discussions which related to the potential damage which engaging with an electronic therapeutic resource might have if the resource was inappropriate or the interaction uncontained. The common idea was that there was a huge danger of young people self diagnosing more serious problems and that this in turn would lead to the exacerbation of any existing issues. One participant went so far as to suggest that young people might potentially use a resource to damage themselves emotionally as a form of self harm. The context of access is clearly of crucial importance because of the support that can be offered from trained professionals who can advise young people on what tools might be appropriate and give support if problems arise. Serious thought needs to be given to this as there is already a

large number of tools freely available on line which could be harmful; there may be a need for a briefing for schools and parents on this.

"...being told I have high levels of depression (is not helpful)"

"I like this one more so than the others, because you are not constantly reminded of being low"

"Your results were compared to everyone else's and this didn't feel right."

"The quizzes were named after, pretty obviously targeted at, it was quite easy to manipulate results so if you were low and thinking I'm definitely this type then you would answer it in a way which would just re-affirm how to think you feel."

"You could easily manipulate one. You click certain things that would push it up."

"One of the things said; 'are you going mad' and clicking through led you to all sorts of things about schizophrenia that wasn't mentioned anywhere else. This is a problem because it's on the same page as information about depression and so will put thoughts in people's head and could scare people."

"It could be quite horrible."

"It encourages you to diagnose yourself....isn't that like a type of self harm?"

"It feels like it's trying to diagnose you, no comment of sending to a GP"

Agency

There were some colourful points made by the young people in relation to this theme. It was clear that agency was just as important to the young people in this focus group as in the other. They spoke about their willingness to engage with the programmes as being tied up with the opportunity to take part in practical activities such as playing a game or designing an avatar. Activity was emphasised over passivity; a resource should give young people practical tools to use to help themselves as well as information about how to overcome problems.

“The bit where we had to click on the Nats was the best bit, it was satisfying. You are doing something”

“It’s satisfying because you have done it too them. You are shooting your bad thoughts.”

“The way you express yourself in designing a character and the control you have can be quite good for you.”

“I want to have some practical things that I can do, so I can see what works for me rather than just giving information.”

“You can do it by yourself, that’s good.”

“Yes, because you can do it whenever you are feeling anxious or whatever, it doesn’t depend on like someone else; when they have time to do it or something.”

“We like the descriptions of the different types of anxiety etc.”

“It can also help to pinpoint what’s going wrong.”

CONCLUSION

The opinions of the young people gathered through the consultation give a fascinating insight into the possibilities opened up by the development of a range of electronic therapeutic tools. Broadly speaking the young people accepted this potential, though with some reservations about the damage those tools might expose young people to. As 'digital natives' there were expertly placed to put forward ideas about how those tools need to be designed in order to provide the maximum benefit. Beyond this, the young people's experiences, direct and indirect, of mental health services allowed them to put forward some fantastic ideas about the ideal context for the use of these tools.

The six themes identified overlap significantly because they are all concerned with the central question of whether or not using an online resource would provide any benefit to young people's emotional wellbeing. The young people we spoke to understood this implicitly and knew that talking about the look and functionality of a tool is crucial because people simply will not use a tool if it's poorly designed and the better the design the more people will engage with it. The focus group participants suggested that in an environment where there is no direct human contact the tool has to go some way towards developing a sense of trust. There were some disagreements about how feasible this was but we feel that the use of anthropomorphic terms to describe elements of how a tool feels to a young person perhaps suggests that there is a basis for this happening.

Some of the resources the young people looked at included the possibility of combining using a tool with electronic communication with a real person who could guide them through, and there were extensive discussions in both groups about whether or not using the tools with a therapist or other person would improve its efficacy. The general consensus was that in order to contain the potential damage and to increase the likelihood of someone engaging for a longer period of time, the involvement of a trusted professional would be a good idea.

The young people we spoke to felt that there were potential benefits in using electronic tools to support children and young people's emotional wellbeing as well

as to address specific issues but that there were also risks associated with this. Many of the young people were already using online tools, social media, “apps” and online counselling/mentoring and felt that these were beneficial to them. However, there were also discussions about how using unmoderated websites could lead to exposure to inappropriate or damaging content, bullying, trolling and other dangers. YoungMinds already offers training to professionals and parents on technology, and young people’s mental health and we feel that there is a real need for more information in an accessible format so that people can make informed choices about the appropriateness of the various tools which are supposed to benefit young people’s mental health.

We have significant experience in developing the participation and engagement of children and young people with mental health problems and we have seen the huge benefits to people when they are actively involved in their own care; this came through really strongly in the focus groups where the young people talked about the benefits of being able to do things for themselves and is one of the key strengths of using electronic tools. If those tools are sensitively co-designed with young people so that they will engage them, and if they are delivered as part of a package of care which allows for active participation, then they the young people we spoke to certainly feel there can be benefits.

On a final note, all of the young people we spoke to as part of this consultation were really engaged in the process and would be very interested in seeing this report as well as contributing to any future work.

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19 ABBREVIATIONS

ABM – Attention bias modification

ADHD - attention deficit hyperactivity disorder

ADIS-IV-C/P – Anxiety Disorders Interview Schedule for Children-IV-Child and parent version

ASD - Autism spectrum disorders

AWS – Adolescent well-being scale

BDI – Beck depression inventory

BED – Binge eating disorder

BMI – Body mass index

BSQ – Body Shape Questionnaire

CAMHS - Child and Adolescent Mental Health Services

cAT - Computerised attention training

CARS – Childhood autism rating scale

CBIT - Comprehensive behavioural intervention for tics

CBLC-R – Child behaviour checklist revised

CBT - Cognitive behaviour therapy

cCBT – Computerised cognitive behaviour therapy

CDI – Child depression inventory

CDSR - Cochrane Database of Systematic Reviews

CEP – The Centre for Economic Performance

CES-D – Centre for Epidemiological Studies depression scale

C-GAS – Children's global assessment scale

CGI – Clinical global impressions scale

CI – Confidence interval

CPT-II – Conners' continuous performance test 2nd edition

cPST – Computerised problem solving therapy

CRS-R – Conners' rating scales revised

CTD - Chronic tic disorder

CWD - Coping With Depression

cWMT - Computerised working memory training

CY-BOCS – Children's Yale-Brown obsessive compulsive scale

CYP IAPT - Children and Young People's Improving Access to Psychological Therapies programme

DARE - Cochrane Database of Abstracts of Reviews of Effects

DASS-21 – Depression anxiety stress scale – short form (21 item)

DISC-R - Diagnostic Interview Schedule for Children-Revised

DSM-IV – Diagnostic and Statistic Manual of Mental Disorders

EAG - Expert Advisory Group

ECBI – Eyberg child behaviour inventory

EDE-Q - Eating Disorder Examination Questionnaire

EDI - Eating Disorder Inventory

EDI-2 – Eating Disorder Inventory edition 2

EDNOS - Eating disorder not otherwise specified

EMDR – Eye movement desensitisation and reprocessing therapy

FMA - Food, Mood and Attitude

GP – General practitioner

GRADE - Grading of Recommendations Assessment, Development and Evaluation

HADS – Hospital anxiety and depression scale

HCP - Healthy Child Programme

HTA – Health technology assessment

ITT - Intention-to-treat analysis

MH – Mental health

NCCMH - National Collaborating Centre for Mental Health

NHS – National Health Service

NICE – National Institute for Health and Care Excellence

NA – Not applicable

NR – Not reported

OCD – Obsessive compulsive disorder

OIS – Optimum information size

ONS – Office for national statistics

POTS - Paediatric Obsessive-Compulsive Disorder Treatment Study

PsycINFO - Psychological Information database

PTSD - Post-traumatic stress disorder

Q-EDD – Questionnaire for Eating Disorder Diagnosis

RCADS - Revised child anxiety and depression scale

RCPCH - Royal College of Paediatrics and Child Health

RCT – Randomised controlled trial

RR – Relative risk/Risk ratio

SB2-BED – Student Bodies 2 – binge eating disorder

SCARED – Screen for Child Anxiety Related Emotional Disorders

SCAS-C – Spence children's anxiety scale – child version

SCAS-P – Spence children's anxiety scale – parent version

SCL-90-R – Symptom checklist revised

SD – Standard deviation

SE – Standard error

SIAB-EX – Structured Interview for Anorexic and Bulimic Disorders for Expert rating

SIAS – Social interaction anxiety scale

SMD – Standardised mean difference

SPSQ-C – Social phobia screening questionnaire – child version

SSRIs - Selective serotonin reuptake inhibitor antidepressants

TADS - Treatment for Adolescents with Depression Study

TAU – Treatment as usual

TS - Tourette syndrome

WASI – Wechsler abbreviated scale of intelligence

WCS - Weight concerns Scale

YGTSS – Yale Global Tic Severity Scale

E-therapies are interventions that use technology to facilitate patient therapy, the two main types being e-mediated therapies and computer-based applications.

This is the most comprehensive systematic review of research examining the effectiveness of e-therapies for the prevention and treatment of mental health problems and substance misuse in children and young people.

It includes reviews of evidence for e-therapies in the management of anxiety and depression, phobia, obsessive-compulsive disorder, post-traumatic stress disorder, eating disorders, attention deficit hyperactivity disorder, conduct disorder, substance misuse, autism, Tourette syndrome and psychosis.

Two focus groups were also convened to gain an understanding of what aspects and features of e-therapies young people would find engaging and helpful.

"It's a good way to teach kids about mental health problems."

"You can do it whenever you are feeling anxious or whatever, it doesn't depend on someone else."

This review contains summaries of all of the evidence that was considered including:

- characteristics of included studies
- GRADE profile tables that summarise the quality of the evidence and the results of the evidence synthesis
- meta-analytical data presented as forest plots
- detailed information about how to use and interpret forest plots.

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