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Intimate Partner Physical Abuse Perpetration and Victimization Risk Factors: A Meta-analytic Review

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Intimate Partner Physical Abuse Perpetration and Victimization Risk Factors: A Meta-analytic Review

Abstract

Evidence from 85 studies was examined to identify risk factors most strongly related to intimate partner physical abuse perpetration and victimization. The studies produced 308 distinct effect sizes. These effect sizes were then used to calculate composite effect sizes for 16 perpetration and 9 victimization risk factors. Large effect sizes were found between perpetration of physical abuse and five risk factors (emotional abuse, forced sex, illicit drug use, attitudes condoning marital violence, and marital satisfaction). Moderate effect sizes were calculated between perpetration of physical abuse and six risk factors (traditional sex-role ideology, anger/hostility, history of partner abuse, alcohol use, depression, and career/life stress). A large effect size was calculated between physical violence victimization and the victim using violence toward her partner. Moderate effect sizes were calculated between female physical violence victimization and depression and fear of future abuse.

Key Words: partner violence, spouse abuse, risk factors, meta-analysis

Intimate Partner Physical Abuse Perpetration and Victimization Risk Factors: A Meta-analytic Review

Intimate partner violence is a pervasive social problem that has devastating effects on all family members as well as on the larger community. A large body of research has focused on gaining a greater understanding of risk factors associated with physical abuse perpetration and victimization. Risk factors are characteristics associated with an increased likelihood that a problem behavior will occur. Although the presence of one or more risk markers does not necessarily indicate that a causal relationship is present, the odds of an associated event are greater when one or more risk markers are present. Numerous risk factors have been found to be associated with partner violence. However, findings across studies are often contradictory making it difficult to condense the information into a general scope of knowledge on the topic.

Meta-analysis is a statistical method for reviewing multiple studies across the relevant research literature and provides a method for comparison of separate studies made possible through the use of effect sizes. The effect size is a statistical representation of the magnitude of the relationship between two variables. Statistical procedures standardize the data from each individual study and the standardized data are then reported as an effect size. Because results have been transformed to a common metric, the magnitude of effect sizes from different studies may be compared. In this paper we present results from a meta-analytic review designed to summarize data on intimate partner violence risk factors gained between the years of 1980 and 2000. In addition, this meta-analysis identifies areas which need additional empirical work.

Literature Review

Previous meta-analyses have been conducted on individual risk factors and partner violence. For example, in their meta-analysis, Sugarman and Hotaling (1995) report an effect size of $r = -.18$ for the relationship between social desirability and intimate violence. Stith et al. (2000) examined the relationship between family of origin violence and intimate partner violence. The authors report effect sizes ranging from $r = .08$ to $r = .35$ between domestic violence and various aspects of witnessing or experiencing family violence as a child. Sugarman and Frankel (1996) examined the relationship between attitudes toward violence, attitudes toward women, attitudes toward gender roles, and domestic violence (both victimization and perpetration). They calculated an effect size, $r = .33$, between positive attitudes toward the use of violence and perpetrating violence and an effect size, $r = .26$, between traditional attitudes about women's gender roles and perpetrating violence. While these meta-analyses have been helpful in clarifying the strength of the relationships between a variety of individual risk factors and intimate partner violence, no previous study has included a multi-factorial meta-analytic review of risk factors.

There have been two recent narrative reviews of risk factors for domestic violence. Riggs, Caulfield, and Street (2000) reviewed the literature on risk factors for perpetration and victimization with the goal of informing clinical decision-making for both mental health and medical care providers as they evaluate the risk for domestic violence among clients. They suggested that demographic characteristics (e.g., age, socioeconomic status, unemployment, etc.), prior relationship aggression, psychological characteristics (e.g., anger, jealousy, attitudes toward violence, etc.), psychopathology,

relationship characteristics (e.g., marital satisfaction), and experiencing/witnessing family of origin abuse were all potentially important risk markers for perpetration. With respect to victimization, the authors pointed to previous experience/witnessing family of origin violence, substance abuse, psychopathology, and perceived danger as being risk factors for victimization. While the above characteristics may help in identifying those at risk, the authors suggested that they do little to predict the timing of an abusive incident. In reviewing studies that examined specific incidents of abuse, they found the following variables to be important: relationship conflict, verbal aggression, alcohol use, pregnancy, and recent separation. While this review helped identify risk factors that were included in the current meta-analysis it did not calculate effect sizes.

Schumacher, Slep, and Heyman (2001) focused on the risk factors for male-to-female partner physical abuse in their review. A key element of their review was the inclusion, whenever possible, of effect sizes for the risk factors in each study. The use of effect sizes improves the quality of their review because it avoids the erroneous conclusions sometimes found in narratives that focus on significance levels (Sugarman & Boney-McCoy, 2000).

Schumacher et al. (2001) divided their review into four areas of perpetrator variables (demographic, personal history, psychological, and relationship), which included a total of 31 variables. For their review of variables related to victimization, they included eight main areas (demographic, childhood victimization, prior male physical aggression, family of origin characteristics, mental disorders, alcohol and drug use or dependence, personality variables, and cognitive variables), which produced a total of 30 variables. While some of the risk factors identified in their review were based on a

limited number of studies, the number of important risk factors reflected in this review demonstrates the complexity in understanding the causes and correlates of domestic violence.

The current project builds on all of these earlier studies. In this manuscript, we calculate overall effect sizes for each risk factor, which allows for the comparison between risk factors. In the Schumacher and colleagues' (2001) review, no attempt was made to calculate an overall effect size for each variable or to organize the risk factors by strength of the calculated effect sizes. In addition, a number of studies that were not included in the earlier review were included in this review. Furthermore, we attempted to calculate effect sizes for studies examining male-to-female violence and studies examining female-to-male violence whenever possible.

Theoretical Perspective

Theoretical perspectives on intimate partner violence have shifted from single factor to multi-factor frameworks. These multi-factor frameworks suggest that partner violence is not simply caused by an individual's patriarchal belief system or psychological dysfunction but rather result from the interaction between various characteristics of the individual and their environment. Dutton's (1995a) nested ecological theory on partner violence has guided our choice of risk factors examined in this study. This theory examines four levels of factors relating to individual offenders and their environment. The *macrosystem*, the broadest level, includes general cultural values and beliefs. The *exosystem* level includes the offender's individual formal and informal social structures such as their friendships, work place, support groups, and legal institutions that connect the offender and their family to the larger culture. The

microsystem level includes characteristics of the immediate setting in which the abuse takes place. In other words, the family unit, the antecedents of abuse, consequences of abuse and relationship dynamics are all included in the microsystem. Finally, the *ontogenic* level is specific to the abuser's developmental history or what the abuser brings to the current relationship from their past. Risk factors included in the ontogenic level include the offender's characteristics that influence their response to stressors occurring at the microsystem and exosystem levels; thus including risk factors relating to learned behaviors, cognitions, and emotional responses to stressors.

For the purposes of this study, the exosystem, microsystem, and ontogenic levels of the nested ecological framework were examined for both offenders and victims of intimate partner violence. While Dutton's (1995a) framework was not expanded to address victim risk factors, we chose to conceptualize these factors according to the basic premises utilized for offenders. We recognize that this initial multi-factorial meta-analysis could not include every possible risk factor associated with intimate partner violence; therefore, we chose to focus on risk factors that could be easily assessed by clinicians assessing for intimate partner violence. Figure 1 identifies the offender risk factors examined in this study and their ecological level placement as guided by Dutton's (1995a) nested ecological framework. Figure 2 identifies the victim risk factors examined in this study and their placement in the model. As can be seen, we were unable to calculate composite effect sizes for some risk factors.

Insert Figure 1 and 2

We predicted that risk factors that are more distal from the violence would exhibit smaller effect sizes than those variables that are more proximate. Consequently, we would predict that exosystem variables would have a smaller impact than microsystem variables which would have a smaller impact than ontogenic variables. Furthermore, we also expected that within each level of the ecological model certain risk factors would emerge with stronger effect sizes than others because they may be more relevant in understanding physical violence perpetration and victimization.

Method

Literature Search

Computer database searches were the primary method of identifying articles for inclusion in this study. The following computer databases were searched for studies conducted between 1980 and 2000: ERIC, Sociological Abstracts, Medline, PsychLit, Social Sciences Abstracts, and the Social Sciences Citation Index. The key words used in the search were: intimate partner and abuse, intimate partner and violence; spousal/spouse and violence, spousal/spouse abuse, spousal/spouse and aggression, family and violence, family and abuse, family and aggression, couple and violence, couple and abuse, couple and aggression, marital and violence, marital and abuse, and marital and aggression. In addition to using the computer databases, the reference list for each study was examined for additional potential studies to be included in the review. The literature search identified 509 studies for possible inclusion in this meta-analysis. Unpublished dissertations and master's thesis were excluded due to the difficulty and cost of obtaining them. Of the remaining studies, a total of 446 studies were obtained for consideration.

Inclusion Criteria

The inclusion of studies in this meta-analysis was based on several criteria (Johnson, 1989; Stith et al. 2000; Wampler & Serovich, 1996). First, the study must examine the relationship between the identified risk factor and intimate partner violence. Second, the study must include distinct data on *physical* violence. Therefore, studies that focused solely on psychological, emotional, verbal, or sexual abuse (or that combined various types of violence without separating results by the type of violence) were excluded. Third, each study must include the quantitative data necessary for the calculation of at least one effect size. Fourth, we only included studies with a sample size greater than twenty. Fifth, the sample must include heterosexual married and/or co-habiting couples. While a large number of studies focus on dating violence, we considered dating violence to be distinct phenomena and chose to focus only on marital and/or co-habitation violence. Finally, each study must use an original sample. It is not uncommon for more than one study to report results based on data obtained from the same sample. Results from separate studies using the same sample were included only if they reported data that could be used to calculate effect sizes for different variables. Therefore, only one study using a particular sample was included in the meta-analytic review for each variable.

The literature search yielded a large number of studies for possible inclusion in the meta-analysis. This was due, in part, to the decision to use a broadly defined search. A preliminary review eliminated 239 of the 446 studies obtained because they were either not empirical studies or were not specific to the identified risk factors and intimate

partner physical violence. The remaining two hundred seven studies were retained for coding.

Coding

The codebook used in the study was designed to capture information about individual studies including bibliographical information, sample information, study quality, and data for the calculation of effect sizes. The entire research team, in order to resolve problems with the codebook and establish consistent guidelines for coding studies, coded the first five studies. Thereafter, two members of the research team independently coded each of the studies. The coding team met weekly to compare codes. In all cases, the occurrence of a disagreement in coding was recorded in the codebook. Overall, coder level of agreement was 98%. When discrepancies occurred, the coding pair was encouraged to discuss the issue and make a joint decision as to how the particular item should be coded. Any discrepancies or questions that could not be resolved by the coding pair were brought to the remaining research team members.

Ten studies were excluded because they contained duplicate samples. Thirty-five studies were excluded because the sample did not meet the inclusion criteria or because the sample was not described in sufficient detail to determine if the inclusion criteria were met. Sixty-eight studies were excluded because they did not contain relevant data, or reported data that could not be converted to an effect size. When the data was not included but appeared to be available, the authors made an attempt to contact the authors for this data, but were generally unsuccessful in this effort. In total, 113 of the 207 studies were excluded, leaving 94 studies for analysis.

Data Analysis

Data entry and analyses were done using the "D-Stat" statistical package (Johnson, 1989). D-Stat reports effect sizes as *d*-values, *g*-values, and *r*-values. *G*-values are a numerical representation of the relationship between two risk factors expressed in standard deviation units. The value may be positive or negative, with the sign indicating the direction of the relationship. A value of 0.00 indicates no relationship. *D*-values are *g*-values that have been corrected for sample size. *R*-values represent the relationship between two risk factors expressed as point-biserial correlations or Pearson's *r*. D-Stat also reports a 95% confidence interval for each effect size. In addition, D-Stat allows the entry of study variables for each effect size. The study variables entered were sample type, gender, and study quality.

Data from each study were entered and effect sizes were calculated. In some studies, the authors reported findings as significant or non-significant, but did not report specific data. In such cases, a significance level of 0.05 was entered in D-Stat for findings reported as significant and a significance level of 0.5 was entered for findings reported as non-significant (Amato & Keith, 1991).

Because the risk factors used in this study were not all mutually exclusive, it was necessary to generate a single effect size for each risk factor within each study. For example, a number of studies included data on the relationship between a risk factors and different levels of physical violence (i.e. minor and severe violence). To avoid allowing studies producing multiple effect sizes being over represented in the analysis, *z*-transformations were used to average effect sizes within a single study and produce a single effect size. D-Stat has a function that allows *r*-values to be averaged using *z*-

transformations. The average r -value and the total sample size were entered into D-Stat and a single effect size was calculated for each risk factor within each study. These effect sizes were used to calculate the composite effect size for the risk factor (Durlack, 1995; Johnson, 1989; Wampler & Serovich, 1996).

Results

At least four studies using different samples, which contain appropriate statistical data, are needed to calculate a composite effect size for any risk factor; therefore, we were unable to calculate any composite effect sizes for male victims. We were unable to find at least four studies with appropriate data to calculate composite effect sizes for nine offender-related risk factors (i.e., physically abused a child, violent toward non-family members, pet abuse, controlling behaviors, stalking, prior arrest, and marital separation, takes responsibility for abusive behavior, and empathy). Insufficient studies were found to calculate composite effect sizes for seven victim-related risk factors (i.e., illicit drug use, attitudes condoning violence, anger/hostility, social support, marital separation, marital satisfaction and pregnancy). Therefore, eighty-five distinct studies were used to calculate composite effect sizes. We were able to calculate composite effect sizes for 16 risk factors associated with male offenders and one risk factor associated with female offenders and were able to calculate composite effect sizes for nine risk factors associated with female victims from these 85 studies. In all, the studies produced 308 distinct effect sizes.

Table 1, 2 and 3 include a complete listing of studies and their individual effect size as well as the calculated composite effect size for each intimate partner risk factor. These tables also indicate the way risk factors were measured in each study.

Insert Tables 1, 2, & 3

Table 4 organizes the results by strength of effect size. The table includes d -values, confidence intervals, r -values, Q -values, the placement of each factor within the nested ecological model, the number of studies used in calculating the composite effect size (i.e. k), and the overall N for each variable. As can be seen by examining this table, our prediction that the ontogenic level of the nested ecological model would produce the strongest effect sizes was not supported. Risk factors at both the ontogenic and microsystem level tended to produce similarly strongest effect sizes. As predicted, those factors in the exosystem level tended to produce the smallest effect sizes.

Insert Table 4

The large sample sizes led to significant effect sizes for 25 of the total 26 study risk factors. Hanson (2000) has suggested one way of interpreting the magnitude of effect sizes, stating that effect sizes may be considered large if they exceed $r = .30$, medium if they range from $r = .20$ to $.30$, and small if they range from $r = .10$ to $.20$. Effect sizes smaller than $r = .10$ may be too small to be considered useful. The magnitude of effect sizes reported in this study range from very large ($r = .49$) to very small ($r = .01$). The mean effect size is $r = .22$. See Table 4 for a complete list of effect sizes by magnitude.

Offender Risk factors

This section presents results only for male offenders except in the case of marital satisfaction. We were able to calculate separate effect sizes for male and female offenders and marital satisfaction.

Exosystem Risk Factors

As can be seen in Table 1, the effect sizes for the exosystem risk factors, ranged from $-.08$ to $.26$ (very small to medium). Four of the effect sizes were small and negative, that is being unemployed ($r = -.10$), having a lower income ($r = -.08$), having a younger age ($r = -.13$) and having a lower education ($r = -.13$) and were weak predictors of male partner violence. Career/life stress ($r = .26$) had a medium effect on male violence. In general, it appears that factors at this level were least strongly related to male physical violence.

Microsystem Risk Factors

Risk factors at the microsystem level (i.e., those factors associated with direct interactions or contexts in which abuse occurs) are some of the most important risk markers for intimate physical abuse of a partner. In fact, the composite effect size calculated from the 15 individual effect sizes for emotionally abusing a partner and the composite effect size calculated from the six effect sizes addressing forcing a partner to have sex resulted in the two strongest effect sizes for current physical abuse of a partner ($r = .49$ and $r = .45$ respectively). Having a past history of being physically abusive is a moderate correlate of current physical abuse ($r = .24$). Marital satisfaction is also a strong microsystem risk factor for men using physical violence ($r = -.30$, calculated from 25 individual effect sizes) and a moderate risk factor for women using physical violence

($r = -.25$, calculated from 5 individual effect sizes) against their partners. Only jealousy has a small effect ($r = .17$) on men using physical violence against their partners.

Ontogenic Risk Factors

The effect sizes for ontogenic risk factors ranged from $-.13$ to $.31$. Illicit drug use ($r = .31$) and having attitudes condoning violence ($r = .30$) are strong correlates of being physically abusive. Traditional sex-role ideology ($r = .29$), anger/hostility ($r = .26$), alcohol abuse ($r = .24$) and depression ($r = .23$) were moderate risk factors for men using physical violence against their partners.

Victim Risk Factors

As we predicted, variables at the exosystem level had a smaller impact on victimization than microsystem or ontogenic variables. However, as in the case of offender risk factors, variables at the ontogenic level did not clearly result in stronger effect sizes than those at the microsystem level. In other words, both relationship and individual variables appear to be important in understanding victimization.

Exosystem Risk Factors

As can be seen in Table 3, the effect sizes for the exosystem risk factors for victimization (i.e., income ($r = -.04$), employment ($r = .01$), age ($r = -.07$) and education ($r = -.05$)) were very small. In fact, according to Hanson (2000) effect sizes smaller than $r = .10$ may be too small to be considered useful. Thus, these exosystem risk factors do not appear to be useful in understanding female victimization.

Microsystem Risk Factors

In total, only one victim risk factor resulted in a large effect size. Female violence toward male partners is a strong risk factor for female victimization ($r = .41$).

Of course we do not know if female violence leads to male violence or if female violence is used as a means of self-defense in response to male violence. We can only say that the two variables are associated. Finally, the number/presence of children is a small risk factor for female victimization ($r = .06$).

Ontogenic Risk Factors

In total, two victim factors resulted in moderate effect sizes. Female depression ($r = .28$) and fear of partner violence ($r = .27$) are moderate risk factors for victimization. It is reasonable to assume that depression and fear do not cause partner violence, but are results of partner violence. Female alcohol abuse is a small risk factor for victimization ($r = .13$).

Study Quality

One serious threat to the validity of meta-analysis lies in the validity of the individual studies used in the analysis. If the individual studies are of poor quality, then the results of the meta-analysis might be questionable. In order to address this concern, the codebook contained nine questions designed to assess study quality. A study quality formula was developed to convert answers in the codebook to a numerical representation of quality. The formula calculates a maximum score of one for each study quality question in the codebook. Therefore, the possible range of study quality scores is zero to nine. The mean study quality score was 6.20 with a standard deviation of 1.40. Studies with a quality score less than three were considered low quality studies. Only two studies had quality scores below three. Removal of these studies from the analysis did not significantly alter the results; therefore, none of the studies were excluded on the bases of quality.

Discussion

This study used Dutton's (1995a) nested ecological theory of partner violence to examine risk factors examined in this study. Partial support was given to our predictions. For both perpetration and victimization, risk factors at the exosystem level (assumed to be most distal from the violence) resulted in the smallest effect sizes. However, factors at the microsystem and ontogenic system levels were not clearly different in their relationship to intimate partner violence. Five offender risk factors from the exosystem level (i.e., the offender's employment status, income, age, education and career/life stress) were examined and only career/life stress emerged with a moderate effect size. Five offender risk factors from the microsystem level were examined (i.e., history of partner abuse, jealousy, forced sex, marital satisfaction, and emotional abuse). Emotional/verbal abuse, forced sex, and marital satisfaction emerged with strong effect sizes. One microsystem risk factors (i.e. history of partner abuse) resulted in a moderate effect size and one (jealousy) resulted in a small effect size. Finally, six offender risk factors from the ontogenic level were examined (i.e. illicit drug use, alcohol use, anger/hostility, attitudes condoning violence, traditional sex-role ideology, and depression) and both attitudes condoning violence and illicit drug use emerged with strong effect sizes. Traditional sex-role ideology, anger/hostility, alcohol use and depression emerged with moderate effect sizes. Only one victim microsystem level risk factor, violent toward partner, emerged with a strong effect size. Two ontogenic risk factors, depression and fear, emerged with moderate effect sizes. No victim exosystem level risk factors emerged with either strong or moderate effect sizes. The large number of risk factors with small or moderate effect sizes identified in this study lends support to

the complicated nature of domestic violence. Given the complexity, it is unreasonable to assume that any one variable would account for a large amount of the variance in explaining intimate partner violence. This meta-analysis provides support for the importance of examining intimate partner violence from a multi-factorial perspective.

One method for interpreting the magnitude of the effect sizes is to compare them to the findings of other published meta-analyses relating to the same research topic. As reported earlier, Sugarman and Frankel (1996) examined the relationship between attitudes toward violence and attitudes toward gender roles, and domestic violence. They calculated an effect size, $r = .33$, between positive attitudes toward the use of violence and perpetrating violence and an effect size, $r = .26$, between traditional attitudes about women's gender roles and perpetrating violence. Similar relationships were examined in this study and produced similar findings. Specifically, this meta-analysis calculated an effect size, $r = .30$, for the relationship between male perpetration and attitudes condoning violence and an effect size, $r = .29$, for the relationship between male perpetration and traditional sex-role ideology.

Schumacher and colleagues (2001) from their comprehensive review of risk factors for male-to-female partner aggression, while not computing overall effect sizes for each risk factor, indicated that several risk factors showed moderate to strong effect sizes. The risk factors they highlight as resulting in moderate to strong effect sizes include elevated levels of state and trait anger and hostility; various Axis I psychopathology, particularly depression, alcohol and drug abuse; and attitudes that condone male partner aggression. Similarly, in this study anger, depression and alcohol

abuse showed moderate effect sizes and illicit drug use and attitudes condoning violence showed strong effect sizes with male partner violence.

Limitations

There are a number of limitations to the study that should be considered when interpreting the results. First, it is impossible to obtain every study containing data on each of the risk factors. As a result, studies whose inclusion would dramatically influence the results may have been overlooked. Unpublished master's thesis and doctoral dissertations were purposefully omitted from the study. A number of relevant studies were omitted because the results could not be converted to effect sizes. A number of the largest effect sizes were obtained with relatively few studies. Effect sizes based on a smaller number of studies are at greater risk for bias due to omission. For example, the risk factor of a victim being violent toward her partner emerged with a large effect size, however this composite effect size was computed from only 5 studies with a total sample size of 652. One large study with a small effect size could have a significant impact on the strength of this factor. Furthermore, there exists the possibility of "file drawer bias" that suggests studies that do not find significant results are less likely to be submitted for publication (Hunter & Schmidt, 1990).

A measure of homogeneity, Q^w , was calculated for each of the study variables (Table 4). For all but a few of the risk factors, the measure indicates significantly more variability in the magnitudes of study results than would be expected to occur by chance. Therefore, it is likely that the study variables actually encompass one or more mediating variables. It is also likely that the significant Q^w is a result of varying research methodologies and sample populations. For example, studies in this meta-analysis vary

on whether the information was reported by the offender or victim. Research on reporting biases suggests that male partners often underreport the occurrence of intimate partner violence (Stets & Straus, 1992). In addition, several of the risk factors are likely to be correlated. This is especially true of the demographic variables. The lack of homogeneity within each of the data sets further illustrates the complexity of intimate partner violence.

Suggestion for Future Research

Meta-analyses often highlight areas in which more research is needed. In conducting this meta-analysis, there were a number of important risk factors for which insufficient data was obtained to calculate effect sizes. More data on the relationship between intimate partner violence and prior arrest, violence towards non-family members, child abuse, stalking, marital separation, controlling behaviors, pet abuse, offender taking responsibility and offender empathy would help to increase our understanding of perpetrators of intimate partner violence. More research is also needed on the relationship between victimization and social support, marital separation, illicit drug abuse, marital satisfaction, pregnancy, anger/hostility and victim attitudes condoning violence. Furthermore, our review indicates the need for more research focus on female aggressors and male victims. Out of the total 16 effect sizes calculated for risk factors associated with offenders, only one female offender risk factor, marital satisfaction, had enough research to calculate an effect size. Furthermore, no effect sizes could be calculated for male victims.

A number of studies were excluded from this meta-analysis because they did not include the basic statistics needed to calculate effect sizes. As meta-analysis is

increasingly utilized in the social sciences, it becomes increasingly important for authors to include data necessary to calculate effect sizes in the published results. For example, means, standard deviations, zero-order correlation matrix, and sample sizes should be included for all variables and all groups.

Implications for Practitioners

The relative effect sizes presented in Table 4 should be of considerable interest to clinicians responsible for assessing and intervening with intimate partner offenders and victims. The offender factors with large effect sizes, i.e., emotional abuse, forced sex, illicit drug use, attitudes condoning violence, and marital satisfaction are clearly issues that should be addressed at some point in batterer intervention programs. While most batterer intervention programs address offender attitudes and work to assist offenders in recognizing the impact that emotional abuse has on victims, it is also important to assess for and address the issue of forced sex. Most research concludes that between 15% to 45% of physically abused women are also forced to have sex (Campbell & Soeken, 1999; Painter & Farrington, 1998; Yegidis, 1988). Clearly, the research reviewed establishes the importance of assessing for forced sex whenever clinicians are working with intimate partner violence. Also, this meta-analysis points out the importance of assessing for and treating or mandating treatment for illicit drug use and alcohol abuse.

Finally, the strong effect size between the male offender's rating of low levels of marital satisfaction and physical violence and the moderate effect size for marital satisfaction and female offending suggests that marital satisfaction plays an important role in the ongoing cycle of abuse. Treatment that fails to address this issue in couples that choose to remain together may increase the likelihood that violence will recur. This

seems even more relevant given that research has found that 50 to 80% of battered wives remain with their abusive partners or return to them after leaving a woman's shelter or otherwise separating from them (Ferraro & Johnson, 1983). Therefore, when victims choose not to leave relationships, treatment including a focus on strengthening relationships may prove beneficial at some point in the treatment of intimate partner violence.

The third strongest effect size identified in this meta-analysis, victims' violence toward their partners was the only victim effect size that exceeded $r = .30$. Victims who hit their partners are at greater risk of further victimization. In fact, Shields and Hanneke (1983) found that severe violence was more likely when a wife has been physically aggressive with her partner. Furthermore, Feld and Straus (1989) found that minor assault by either spouse increased the risk of severe assault by the husband. Also, when a wife had severely assaulted her husband but he had not physically assaulted her, there was a 1 in 7 chance that he would severely abuse her in the course of the next year. Clinical services to victims of abuse, whether male or female, have focused on empowering the victim but have not always addressed methods for helping victims to manage their own anger. Results from this meta-analysis highlight the need for clinicians to address this issue with victims.

In conclusion, this study makes an important contribution to the understanding of risk factors related to intimate partner perpetration and victimization. It is the first study to present composite effect sizes for a variety of risk factors using the nested ecological model of partner violence. The study's finding that factors in the exosystem are least important in understanding partner violence while those in both the microsystem and

ontogenic system include factors that are very important in understanding partner violence lend support for our prediction that those factors more proximal to the violence are most important to understanding intimate partner violence. The study highlights important risk factors and points out gaps in the risk factor literature. While the study has not attempted to include all possible variables in the review, we hope that this beginning effort will challenge others to conduct meta-analytic reviews of other important risk factors. Furthermore, we hope that this study will stimulate future research in areas with insufficient research.

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* Study used in meta-analytic review

Risk Factor Analysis

Table 1
Male Offender Risk Factors

Exosystem Risk factor	Study and Sample Size	Measure	Effect (r)	
Income	N= 4,153		-.08***	
	Babcock et al (1993) n=95		-.25*	
	Barbour et al (1998) n=88		-.07	
	Barnett et al (1996) n=95		-.07	
	Bauserman & Arias (1992) n=88		-.04	
	Boyle & Vivian (1996) n=312		-.23***	
	Brinkerhoff et al (1992) n=379		-.08*	
	Caesar (1988) n=44		-.10	
	Cordova et al (1993) n=57		-.17	
	Hampton & Gelles (1994) n=548		-.08**	
	Holtzworth-Munroe & Anglin (1991) n=56		-.09	
	Holtzworth-Munroe & Stuart (1994) n=75		.10	
	Holtzworth-Munroe et al (1997) n=119		-.06	
	Jacobson et al (1994) n=92		-.27**	
	Julian & McKenry (1993) n=92		-.08	
	Kesner & McKenry (1998) n=149		-.21*	
	McKenry et al (1995) n=102		-.40***	
	Murphy et al (1994) n=72		.10	
	Prince & Arias (1994) n=72		-.08	
	Ratner (1995) n=399		.11**	
	Sagrestano et al (1999) n=42		-.19	
	Schuerger & Reigle (1988) n=246		-.05	
	Smith (1990) n=604		-.15***	
	Vivian & Malone (1997) n=327		-.03	
	Age	N=5,100		-.13***
		Aldarondo & Sugarman (1996) n=230		-.32***
Babcock et al (1993) n=95			-.29**	
Barbour et al (1998) n=88			-.07	
Barnett & Fagan (1993) n=182			.01	
Beasley & Stoltenberg (1992) n=84			-.19	
Boyle & Vivian (1996) n=312			-.17**	
Brinkerhoff et al (1992) n=424			-.10**	
Caesar (1988) n=44			-.10	
Cordova et al (1993) n=57			-.31*	
Dewhurst (1992) n=53			-.09	
Dinwiddie (1992) n=380			-.06	
Else et al (1993) n=42			-.08	
Fagan et al. (1998) n=172			-.08	
Hampton & Gelles (1994) n=577			-.10**	
Holtzworth-Munroe & Anglin (1991) n=56			-.09	
Holtzworth-Munroe & Stuart (1994) n=75			-.09	
Holtzworth-Munroe et al (1997) n=119			-.06	
Jacobson et al (1994) n=92			-.30**	

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	Julian & McKenry (1993) n=92		-.08
	Kesner & McKenry (1998) n=149		-.15
	Kyriacou et al (1999) n=915		-.17***
	McKenry et al (1995) n=102		-.11
	Murphy et al (1994) n=72		-.18
	Prince & Arias (1994) n=72		-.77***
	Rosenbaum & O'leary (1981) n=92		-.07
	Rosenbaum et al (1994) n=130		-.23**
	Van Hasselt et al (1985) n=67		-.02
	Vivian & Malone (1997) n=327		-.10***
Education	N=4,685		-.13***
	Babcock et al (1993) n=95		-.22*
	Barbour et al (1998) n=88		-.07
	Boyle & Vivian (1996) n=312		-.27***
	Brinkerhoff et al (1992) n=417		-.07*
	Caesar (1988) n=44		-.44**
	Coleman et al (1980) n=60		-.32*
	Cordova et al (1993) n=57		-.08
	Dewhurst (1992) n=53		-.09
	Else et al (1993) n=42		.21
	Holtzworth-Munroe & Anglin (1991) n=56		-.09
	Holtzworth-Munroe & Stuart (1994) n=75		-.25*
	Holtzworth-Munroe et al (1997) n=119		-.32***
	Jacobson et al (1994) n=92		-.12
	Julian & McKenry (1993) n=92		-.17
	Kesner & McKenry (1998) n=149		-.11
	Kyriacou et al (1999) n=915		-.12**
	McKenry et al (1995) n=102		-.18
	Murphy et al (1994) n=72		-.23*
	Prince & Arias (1994) n=72		-.08
	Ratner (1995) n=399		-.04
	Rosenbaum et al (1994) n=130		-.43***
	Schuerger & Reigle (1988) n=246		-.12**
	Smith (1990) n=604		-.19***
	Van Hasselt et al (1985) n=67		-.06
	Vivian & Malone (1997) n=327		-.03
Career/Life Stress	N=391		.26***
	Barling & Rosenbaum (1986) n=48	Organizational Change Inventory (Sarason & Johnson, 1979)	.26**
	Julian & McKenry (1993) n=92	Life Experiences Survey (Sarason et al., 1978)	.20*
	Kesner & McKenry (1998) n=149	Life Experiences Survey (Sarason et al., 1978)	.26***
	McKenry et al (1995) n=102	Life Experiences Survey (Sarason et al., 1978)	.30***
Employment	N= 3,824		-.10***
	Barnett & Fagan (1993) n=182		-.15*
	Kaufman-Kantor & Straus (1989) n=2,187		-.07**
	Kyriacou et al (1999) n=915		-.11**
	Prince & Arias (1994) n=72		-.11

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	Rankin et al (2000) n=69		-.05
	Ratner (1995) n=399		-.14***
Microsystem Risk Factor	Study and Sample Size	Measure	Effect (r)
Jealousy	N=1,348		.17***
	Dutton et al (1994) n=160	Interpersonal Jealousy Scale (Mathes et al, 1981)	.26***
	Hanson et al (1997) n=997	Question designed for study	.14***
	Holtzworth-Munroe et al (1997) n=119	Interpersonal Jealousy Scale (Mathes et al, 1981)	.30***
	Murphy et al (1994) n=72	Reaction to vignettes of hypothetical jealousy-producing events	.10
Forced Sex	N=2,426		.45***
	Campbell (1989) n=193	Questionnaire designed for study	.47***
	Frieze (1983) n=274	Questionnaire designed for study	.36***
	Hanneke et al (1986) n=307	Questionnaire designed for study	.41***
	Marshall (1996) n=578	Severity Of Violence Against Women (Marshall, 1992)	.50***
	Painter & Farrington (1998) n=1005	Questionnaire designed for study	.42***
	Rankin et al (2000) n=69	Measure Of Wife Abuse (Rodenburg & Fantuzzo, 1993)	.51***
Emotional/Verbal Abuse	N=3,257		.49***
	Aldarondo & Sugarman (1996) n=230	Conflict Tactics Scale (Straus, 1979)	.50***
	Brinkerhoff et al. (1992) n=356	Conflict Tactics Scale (Straus, 1979)	.34***
	Cascardi et al. (1995) n=95	Psychological Maltreatment Of Women Inventory (Tolman, 1989)	.72***
	Dutton (1995b) n=176	Psychological Maltreatment Of Women Inventory (Tolman, 1989)	.52***
	Feldbau-Kohn et al (1998) n=89	Modified version of Conflict Tactics Scale (Straus, 1979)	.65***
	Frieze & McHugh (1992) n=272	Questionnaire designed for study	.58***
	Hanson et al (1997) n=997	Buss-Durkee Hostility Inventory (Buss & Durkee, 1957)	.17***
	Holden & Ritchie (1991) n=74	Conflict Tactics Scale (Straus, 1979)	.82***
	Marshall (1996) n=578	Questionnaire designed for study	.56***
	Ortlepp & Nkosi (1993) n=60	Index of Spouse Abuse (Hudson & McIntosh, 1981)	.88***
	Rankin et al (2000) n=69	Measure of Wife Abuse (Rodenburg & Fantuzzo, 1993)	.82***
	Russell et al (1989) n=42	Conflict Tactics Scale (Straus, 1979)	.52***
	Sagrestano et al (1999) n=42	Conflict Tactics Scale (Straus, 1979)	.79***
	Vivian & Langhinrichsen-Rohling (1994) n=91	Adapted Conflict Tactics Scale (Straus, 1979)	.54***
	Vivian & Malone (1997) n=86	Conflict Tactics Scale (Straus, 1979)	.32**
History of Partner Abuse	N=1,567		.24***

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	Aldarondo and Kaufman-Kantor (1997) n=110	Conflict Tactics Scale (Straus, 1979) and Questionnaire designed for study	.15*
	Browne et al (1999) n=285	Conflict Tactics Scale (Straus, 1979)	.15*
	Follingstad et al (1992) n=172	Questionnaire designed for study	.10
	Murphy et al (1998) n=231	Chart review	.05
	O'Leary et al (1989) n=272	Conflict Tactics Scale (Straus, 1979)	.37***
	Russell et al (1989) n=42	Questionnaire designed for study	.19*
	Schuerger & Reigle (1988) n=278	Violence inventory loosely adapted from Conflict Tactics Scale (Straus, 1979)	.48***
	Weisz et al (2000) n=177	Expanded version of Conflict Tactics Scale (Straus, 1979)	.12*
Marital Satisfaction	N=3,896		-.30***
	Aldarondo & Sugarman (1996) n=230	Questionnaire designed for study	-.40***
	Babcock et al. (1993) n=95	Dyadic Adjustment Scale (Spainer, 1976)	-.34***
	Barling & Rosenbaum (1986) n=48	Short Marital Adjustment Test (Locke & Wallace, 1959)	-.32**
	Barnett & Fagan (1993) n=182	Short Marital Adjustment Test (Locke & Wallace, 1959)	-.43***
	Boyle & Vivian (1996) n=312	Dyadic Adjustment Scale (Spainer, 1976)	-.45***
	Brinkerhoff et al (1992) n=403	Rating of marital satisfaction ("very dissatisfied, neutral, extremely satisfied")	-.14***
	Byrne & Arias (1997) n=66	Dyadic Adjustment Scale (Spainer, 1976)	-.26**
	Cordova et al (1993) n=57	Dyadic Adjustment Scale (Spainer, 1976)	-.49***
	Feldbau-Kohn et al (1998) n=89	Dyadic Adjustment Scale (Spainer, 1976)	-.16*
	Goldstein & Rosenbaum (1985) n=78	Short Marital Adjustment Test (Locke & Wallace, 1959)	-.21**
	Hanson et al (1997) n=997	Dyadic Adjustment Scale (Spainer, 1976)	-.28***
	Holtzworth-Munroe & Stuart (1994) n=75	Short Marital Adjustment Test (Locke & Wallace, 1959)	-.65***
	Holtzworth-Munroe & Anglin (1991) n=56	Short Marital Adjustment Test (Locke & Wallace, 1959)	-.26*
	Holden & Ritchie (1991) n=74	Questionnaire designed for study	-.71***
	Hurlbert et al (1991) n=60	Index of Marital Satisfaction (Hudson, 1982)	-.29*
	Julian & McKenry (1993) n=92	Autonomy and Relationship Inventory (Schaefer & Edgerton, 1982)	-.41**
	Lockhart & White (1989) n=155	Questionnaire designed for study	-.19***
	McKenry et al (1995) n=102	Autonomy and Relationship Inventory (Schaefer & Edgerton, 1982)	-.31***
	Prince & Arias (1994) n=72	Short Marital Adjustment Test (Locke & Wallace, 1959)	-.08

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	Rosenbaum & O'Leary (1981) n=92	Short Marital Adjustment Test (Locke & Wallace, 1959)	-.59***
	Russell et al (1989) n=42	Index of Marital Satisfaction (Hudson, 1982)	-.18
	Sagrestano et al (1999) n=42	Dyadic Adjustment Scale (Spainer, 1976)	-.44***
	Senchak & Leonard (1994) n=109	Short Marital Adjustment Test (Locke & Wallace, 1959)	-.27***
	Vivian & Langhinrichsen-Rohling (1994) n=91	Dyadic Adjustment Scale (Spainer, 1976)	-.60***
	Vivian & Malone (1997) n=277	Dyadic Adjustment Scale (Spainer, 1976)	-.16**
Ontogenic Risk Factor	Study and Sample Size	Measure	Effect (r)
Anger/Hostility	N=2,179		.26***
	Barbour et al (1998) n=88	State-trait Anger Scale (Spielberger et al., 1983)	.40***
	Beasley & Stoltenberg (1992) n=84	State-trait Anger Scale (Spielberger et al., 1983)	.32**
	Boyle & Vivian (1996) n=292	State-trait Anger Scale (Spielberger et al., 1983)	.22***
	Dutton & Starzomski (1993) n=75	Multidimensional Anger Inventory (Siegel, 1986)	.07
	Dutton et al (1994) n=160	Multidimensional Anger Inventory (Siegel, 1986)	.16*
	Dutton (1995b) n=176	Multidimensional Anger Inventory (Siegel, 1986)	.33***
	Feldbau-Kohn et al (1998) n=89	State-trait Anger Scale (Spielberger et al., 1983)	.28***
	Hanson et al (1997) n=997	Buss-Durkee Hostility Inventory (Buss & Durkee, 1957)	.25***
	Holden & Ritchie (1991) n=74	Asked women about frequency of partner's anger	.45***
	McKenry et al (1995) n=102	The Psychiatric Symptom Checklist 90/Brief symptom Inventory (Derogatis et al., 1973)	.36***
	Russell et al (1989) n=42	McNair Profile of Mood States (McNair et al., 1981)	.10
Attitudes Condoning Violence	N=2,318		.30***
	Dewhurst (1992) n=53	Acceptance of Interpersonal Violence Scale (Burt, 1980)	-.04
	Hampton & Gelles (1994) n=573	Questionnaire designed for study	.20***
	Hanson et al (1997) n=997	Questionnaire designed for study	.33***
	Smith (1990) n=604	Husband's Approval of Violence Against Wives Index (Smith, 1990)	.32***
	Stith & Farley (1993) n=91	Modified version of Inventory of Beliefs about Wife Beating (Saunders et al 1987)	.35***
Traditional sex-role ideology	N=1,153		.29***
	Dewhurst (1992) n=53	Sex-role Stereotyping Scale (Burt, 1980)	.09
	Dutton (1995b) n=176	Psychological Maltreatment Of	.55***

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		Women Inventory (Tolman, 1989)	
	Hurlbert et al (1991) n=60	Attitudes Toward Women Scale-Short Version (Spence & Helmerich, 1978)	.49***
	Neidig et al (1986) n=77	Attitudes Toward Women Scale-Short Version (Spence & Helmerich, 1978)	.20
	Rosenbaum & O'Leary (1981) n=92	Attitudes Toward Women Scale-Short Version (Spence & Helmerich, 1978)	.38***
	Smith (1990) n=604	Husband's Patriarchal Beliefs Index (Smith, 1990)	.25***
	Stith & Farley (1993) n=91	Sex-role Egalitarianism Scale (Beere & King, 1994)	.33***
Depression	N=2,720		.23***
	Boyle & Vivian (1996) n=312	Beck Depression Inventory (Beck, 1961)	.33***
	Dewhurst (1992) n=53	Basic Personality Inventory (Jackson, 1989)	.38**
	Dinwiddie (1992) n=380	Home Environment and Lifetime Psychiatric Evaluation Record (Coryell et al., 1978)	.16**
	Dutton (1995b) n=132	Millon Clinical Multiaxial Inventory II (Millon, 1987)	.18**
	Else et al (1993) n=42	Beck Depression Inventory (Beck et al., 1961)	.07
	Feldbau-Kohn et al (1998) n=89	Beck Depression Inventory (Beck et al., 1961)	.21**
	Hanson et al (1997) n=997	Beck Depression Inventory (Beck et al., 1961)	.21***
	Julian & McKenry (1993) n=92	Center for Epidemiologic Studies Depression Scale (Radloff, 1977)	.26*
	Maiuro et al (1988) n=66	Beck Depression Inventory (Beck et al., 1961)	.64***
	Murphy et al (1993) n=72	Millon Clinical Multiaxial Inventory II (Millon, 1987)	.48***
	Rankin et al (2000) n=69	Beck Depression Inventory (Beck et al., 1961)	.22**
	Russell et al (1989) n=42	McNair's Profile of Mood States (McNair et al., 1981)	.10
	Vivian & Langhinrichsen-Rohling (1994) n=91	Beck Depression Inventory (Beck et al., 1961)	.31***
	Vivian & Malone (1997) n=283	Beck Depression Inventory (Beck et al., 1961)	.11
Alcohol Use	N=14,541		.24***
	Coleman et al (1980) n=60	Questionnaire designed for study	.35**
	Cunradi et al (1999) n=480	Questionnaire designed for study	.18***
	Dinwiddie (1992) n=380	Home Environment and Lifetime Psychiatric Evaluation Record (Coryell et al., 1978)	.23***
	Else et al (1993) n=42	Michigan Alcohol Screening Test (Selzer, 1971)	.25
	Fagan et al (1988) n=172	Modified version of Quantity-Frequency Index (Cahalan et al., 1969)	.13

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	Hanson et al (1997) n=997	Short Michigan Alcohol Screening Test (Selzer et al., 1975)	.21***
	Hurlbert et al (1991) n=60	Short Michigan Alcohol Screening Test (Selzer et al., 1975)	.38**
	Hutchison (1999) n=419	Drinking Index (Kaufman-Kantor & Straus, 1990)	.02
	Johnson (2001) n=7,707	Questionnaire designed for study	.22***
	Julian & McKenry (1993) n=92	Michigan Alcohol Screening Test (Selzer, 1971)	.21*
	Katz et al (1995) n=66	Michigan Alcohol Screening Test (Selzer, 1971)	.18*
	Kaufman-Kantor & Straus (1989) n=2,187	Questionnaire designed for study	.30***
	Kyriacou et al (1999) n=887	Abridged version of the Alcohol Use Disorders Identification Test (Saunders et al., 1993)	.42***
	McKenry et al (1995) n=102	Blood serum tests	.31***
	Murphy et al (1993) n=72	Millon Clinical Multiaxial Inventory II (Millon, 1987)	.57***
	O'Farrell et al (1999) n=150	Michigan Alcohol Screening Test (Selzer, 1971)	.36***
	Rosenbaum & O'Leary (1981) n=92	Short Michigan Alcohol Screening Test (Selzer et al., 1975)	.34***
	Rosenbaum et al (1994) n=130	Questionnaire designed for study	.04
	Russell et al (1989) n=42	Questionnaire designed for study	.44**
	Schuerger & Reigle (1988) n=246	Michigan Alcohol Screening Test (Selzer, 1971)	.24***
	Stith & Farley (1993) n=91	Michigan Alcohol Screening Test (Selzer, 1971)	.22**
	Van Hasselt et al (1985) n=67	Michigan Alcohol Screening Test (Selzer, 1971)	.47***
Illicit Drug Use	N=4,496		.31***
	Dinwiddie (1992) n=380	Home Environment and Lifetime Psychiatric Evaluation Record (Coryell et al., 1978)	.09
	Hanson et al (1997) n=997	Asked men about own drug use	.19***
	Kaufman-Kantor & Straus (1989) n=2,187	Asked women about partner's drug use	.34***
	Kyriacou et al (1999) n=860	Asked women about partner's drug use	.43***
	Murphy et al (1993) n=72	Millon Clinical Multiaxial Inventory II (Millon, 1987)	.33**

*p < .05; **p < .01; ***p < .001.

Table 2
Female Offender Risk Factors

Exosystem Risk factor	Study and Sample Size	Measure	Effect (r)
No risk factors			
Microsystem Risk Factor	Study and Sample Size	Measure	Effect (r)
Marital Satisfaction	N= 860		-.25***
	Brinkerhoff et al (1992) n=506	Rating of marital satisfaction ("very dissatisfied, neutral, extremely	-.20***

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		satisfied?)	
	Byrne & Arias (1997) n=66	Dyadic Adjustment Scale (Spainer, 1976)	-.35***
	Lockhart & White (1989) n=155	Asked about sources of conflict	-.19***
	Sagrestano et al (1999) n=42	Dyadic Adjustment Scale (Spainer, 1976)	-.30**
	Vivian & Langhinrichsen-Rohling (1994) n=91	Dyadic Adjustment Scale (Spainer, 1976)	-.58***
Ontogenic Risk Factor	Study and Sample Size	Measure	Effect (r)
No risk factors			

*p < .05; **p < .01; ***p < .001.

Table 3
Female Victim Risk Factors

Exosystem Risk Factor	Study and sample size	Measure	Effect (r)
Income	N= 4,097		-.04***
	Babcock et al (1993) n=95		-.12
	Bauserman & Arias (1992) n=88		-.04
	Browne et al (1999) n=285		-.11
	Campbell (1989) n=193		-.14*
	Cordova et al (1993) n=57		-.14
	Jacobson et al (1994) n=92		-.15
	Kyriacou et al (1999) n=915		-.03
	Ratner (1995) n=399		.04
	Sagrestano et al (1999) n=42		-.31**
	Tollestrup et al (1999) n=1,931		-.05**
	Age	N=5,832	
Astin et al (1995) n=87			-.35***
Babcock et al (1993) n=95			-.16
Barnett & Fagan (1993) n=182			-.04
Bauserman & Arias (1992) n=88			-.17
Browne et al (1999) n=285			-.17**
Bullock et al (1989) n=793			.12**
Campbell (1989) n=193			-.14*
Cordova et al (1993) n=57			-.22
Holden & Ritchie (1991) n=74			-.09
Jacobson et al (1994) n=92			-.21*
Kyriacou et al (1999) n=915			-.14***
Ratner (1995) n=399			-.35***
Rosenbaum & O'leary (1981) n=92			-.07
Tollestrup et al (1999) n=1,931		-.03*	
Education	Van Hasselt et al (1985) n=67		-.05
	Van Hightower & Gorton (1998) n=155		-.08
	Vivian & Malone (1997) n=327		-.10**
	N=4,544		-.05***
	Astin et al (1995) n=87		-.55***
	Babcock et al (1993) n=95		-.25*
	Campbell (1989) n=193		-.05
	Coleman et al (1980) n=60		-.21
	Cordova et al (1993) n=57		-.05

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	Jacobson et al (1994) n=92		-.19
	Kyriacou et al (1999) n=915		-.04
	Ratner (1995) n=399		.04
	Senchak & Leonard (1994) n=117		-.22***
	Simons et al (1993) n=204		-.17***
	Tollestrup et al (1999) n=1,931		-.02
	Van Hasselt et al (1985) n=67		-.04
	Vivian & Malone (1997) n=327		-.10**
Employment	N= 2,979		.01
	Astin et al (1995) n=87		.47***
	Barnett & Fagan (1993) n= 182		-.36***
	Barnett et al (1996) n=95		.24*
	Browne et al (1999) n=285		-.01
	Ratner (1995) n=399		-.04
	Tollestrup et al (1999) n=1,931		.05**
Microsystem Risk Factor	Study and Sample Size	Measure	Effect (r)
Number/Presence of Children	N=4,774		.06***
	Aldarondo & Sugarman (1996) n=302		.04
	Astin et al (1995) n=87		.07
	Barbour et al. (1998) n=88		.07
	Barnett & Fagan (1993) n=182		.24***
	Bauserman & Arias (1992) n=88		.07
	Browne et al (1999) n=285		.18**
	Caesar (1988) n=44		.10
	Campbell (1989) n=193		.05
	Cascardi et al (1995) n=94		.00
	Coleman et al (1980) n=60		.09
	Hampton & Gelles (1994) n=331		.08*
	Holden & Ritchie (1991) n=74		-.04
	Holtzworth-Munroe & Anglin (1991) n=56		.09
	Holtzworth-Munroe & Stuart (1994) n=36		.17
	Holtzworth-Munroe et al (1997) n=119		.06
	Jacobson et al (1994) n=92		.06
	McKenry et al (1995) n=102		.10
	Murphy et al (1993) n=72		.00
	Prince & Arias (1994) n=72		.08
	Ratner (1995) n=399		.26***
	Tollestrup et al (1999) n=1,931		.04*
	Van Hasselt et al (1985) n=67		.14
Violent Toward Partner	N= 652		.41***
	Frieze & McHugh (1992) n=272	Retrospective questionnaire designed for study	.40***
	Jacobson et al (1994) n=92	Conflict Tactics Scale (Straus, 1979)	.43***
	Russell et al. (1989) n=42	Conflict Tactics Scale (Straus, 1979)	.27
	Sagrestano et al. (1999) n=42	Conflict Tactics Scale (Straus, 1979)	.83***
	Simons et al. (1993) n=204	Asked children to report mother's aggression toward their father using	.34***

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Ontogenic Risk Factor	Study and Sample Size	Measure	Effect (r)
		questions based on the Conflict Tactics Scale (Straus, 1979)	
Fear	N= 4,388		.27***
	Bullock et al (1989) n=793	Question designed for study	.02
	Cascardi et al. (1995) n=94	Spouse-Specific Fear Measure (O'leary & Curley, 1986)	.49***
	Demaris & Swinford (1996) n=2,927	Question designed for study	.23***
	Hutchison (1999) n=419	Questionnaire designed for study	.30***
	Van Hightower & Gorton (1998) n=155	Question designed for study	.50***
Depression	N=899		.28***
	Cascardi et al. (1995) n=96	Structured Clinical Interview for DSM III-R (Spitzer et al., 1992)	.26**
	Dienemann et al. (2000) n=82	Beck Depression Inventory (Beck et al., 1961)	.54***
	Hampton & Gelles (1994) n=336	Series of questions derived from Psychiatric Evaluation Research Interview (Dohrenwend et al., 1980) and Perceived Stress Scales (Cohen et al., 1983)	.17**
	Mitchell & Hodson (1983) n=60	Brief Symptom Inventory (Derogatis, 1975)	.31***
	Russell et al (1989) n=42	McNair's Profile of Mood States (McNair et al., 1981)	.21
	Vivian & Malone (1997) n=283	Beck Depression Inventory (Beck et al., 1961)	.21***
Alcohol Use	N= 7,084		.13***
	Browne et al. (1999) n=285	Questionnaire designed for study	.09
	Clark & Foy (2000) n=78	Questionnaire designed for study	.16*
	Cunradi et al (1999) n=480	Questionnaire designed for study	.16***
	Hutchison (1999) n=419	Drinking Index (Kaufman-Kantor & Straus, 1990)	.07*
	Kaslow et al. (1998) n=285	Michigan Alcohol Screening Test – Brief (Pokorny et al., 1972)	.23***
	Kaufman-Kantor & Straus (1989) n=2,187	Questionnaire designed for study	.31***
	Kyriacou et al (1999) n=911	Abridged version of the Alcohol Use Disorders Identification Test (Saunders et al , 1993)	.25***
	Ratner (1995) n=399	CAGE (Ewing, 1984)	.11**
	Russell et al (1989) n=42	Questionnaire designed for study	.18
	Tollestrup et al. (1999) n=1,931	Average number of alcoholic drinks in one setting and number of drinks in the past month	.05**
	Van Hasselt et al. (1985) n=67	Michigan Alcohol Screening Test – Brief (Pokorny et al., 1972), Quantity-Frequency Index (Jessor et al., 1968), Impairment Index (Shelton, 1969)	.25*

*p < .05; **p < .01; ***p < .001.

Table 4
Risk factors for intimate partner violence

<i>Risk factor</i>	<i>d</i>	<i>CI</i>	<i>r</i>	<i>Q^w</i>	<i>Ecological Level</i>	<i>k</i>	<i>N</i>
<u>Male Offenders</u>							
Emotional/Verbal Abuse	1.13	1.07 / 1.20	.49***	36.09***	Micro ^a	15	3,257
Forced Sex	1.02	0.94 / 1.09	.45***	11.73*	Micro	6	2,426
Illicit Drug Use	0.65	0.58 / 0.73	.31***	36.79***	Onto ^b	5	4,496
Attitude Condoning Violence	0.63	0.55/0.71	.30***	12.15*	Onto	5	2,318
Marital Satisfaction	-0.63	-0.69/-0.57	-.30***	151.59***	Micro	25	3,896
Traditional sex-role ideology	0.60	0.70/0.51	.29***	23.59***	Onto	7	1,153
Anger/Hostility	0.54	0.45/0.63	.26***	18.39*	Onto	11	2,179
Career/Life Stress	0.54	0.39/0.70	.26***	.72	Exo ^c	4	391
History of Partner Abuse	0.48	0.41/0.56	.24***	89.71***	Micro	8	1,567
Alcohol Use	0.48	0.44/0.53	.24***	114.87***	Onto	22	14,541
Depression	0.48	0.40/0.56	.23***	36.39***	Onto	14	2,720
Jealousy	0.35	0.22/0.48	.17***	4.16	Micro	4	1,348
Age	-0.26	-0.31/-0.21	-.13***	71.52***	Exo	28	5,100
Education	-0.26	-0.31/-0.21	-.13***	62.78***	Exo	25	4,685
Employment	-0.20	-0.13/-0.27	-.10***	3.29	Exo	6	3,824
Income	-0.16	-0.21/-0.11	-.08***	68.14***	Exo	23	4,153
<u>Female Offenders</u>							
Marital Satisfaction	0.53	0.62/0.43	.25***	35.29***	Micro	5	860
<u>Female Victims</u>							
Violent Toward Partner	0.90	0.76/1.05	.41***	45.63***	Micro	5	652
Depression	0.59	0.45/0.72	.28***	20.44**	Onto	6	899
Fear	0.57	0.49/0.65	.27***	48.48***	Onto	5	4,388
Alcohol Use	0.26	0.22/0.30	.13***	84.68***	Onto	11	7,084
Age	-0.15	-0.19/-0.10	-.07***	47.25***	Exo	17	5,832
#/Presence of Children	0.12	0.08/0.18	.06***	20.75	Micro	22	4,774
Education	-0.10	-0.15/-0.06	-.05***	56.86***	Exo	13	4,544
Income	-0.09	-0.14/-0.04	-.04***	16.54	Exo	10	4,097
Employment	0.02	-0.03/0.08	.01	60.22***	Exo	6	2,979

* $p < .05$; ** $p < .01$; *** $p < .001$.

a Micro= Microsystem

b Onto=Ontogenic

c Exo=Exosystem

NOTE

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