Supplementary material. Characterising the use, users and effects of a health app supporting lifestyle changes in pregnant women. Brit J Nutr.

Supplemental table 1. Demographic characteristics of dropouts and participants continuing the study.

	Total n	Dropouts (n=647)[a]		Participants continuing the study (n=391)[a]		P-value
		n, mean or median	%, SD or IQR	n, mean or median	%, SD or IQR	
Age (years)	645/388	29.3	4.1	29.5	3.7	0.36[b]
Gestational weeks at early pregnancy	647/391	13.1	8.9 – 19.3	16.1	11.1 – 21.6	<0.001[c]
Pre-pregnancy BMI (kg/m²)	644/391	25.3	5.6	24.2	4.5	<0.001[b]
Underweight		13	2.0	9	2.3	0.013[d]
Normal weight		372	57.8	262	67.0	
Overweight		157	24.4	80	20.5	
Obese		102	15.8	40	10.2	
Parity	645/388					<0.001[d]
0		317	49.1	244	62.9	
1		223	34.6	94	24.2	
2		69	10.7	33	8.5	
≥ 3		36	5.6	17	4.4	
Marital status	646/391					0.004[d]
Married		298	46.1	222	56.8	
Cohabiting		322	49.8	154	39.4	
Single		15	2.3	12	3.1	
Other		11	1.7	3	0.8	
Place of residence	646/391					0.21[d]
Southern Finland		277	42.9	175	44.8	
Western Finland		261	40.4	141	36.1	
Eastern Finland		48	7.4	25	6.4	
Northern Finland		60	9.3	50	12.8	
University degree	647/391	405	62.6	287	73.4	<0.001[e]

Low income	642/388	55	8.6	27	7.0	0.41[e]
Smoking status						
Smoking before pregnancy	647/391	129	19.9	41	10.5	<0.001[e]
Smoking during pregnancy	641/388	17	2.7	6	1.5	0.28[e]
Chronic disease[f]	633/387	68	10.7	52	13.4	0.20[e]
Special diet[g]	644/390	171	26.6	109	27.9	0.67[e]
Diet quality scores	640/389	9.1	2.2	9.8	2.0	<0.001[b]
Physical activity scores	644/387	7.5	3.0 – 15.0	7.5	3.0 – 12.5	0.31[c]

BMI, Body mass index

IQR, interquartile range

SD, standard deviation

[a] Original number of participants in the group

[b] Independent samples T-test

[c] Mann-Whitney U test

[d] Chi-squared test

[e] Fisher's exact test

[f] Type 1 diabetes, type 2 diabetes, cardiovascular disease, coeliac disease, irritable bowel syndrome or inflammatory bowel disease.

[g] Lactose-free, milk-free, gluten-free, vegetarian or other diet such as grain-free diet or low fermentable oligo-, di-, monosaccharides and polyols (FODMAP) diet.

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Supplemental table 2. Efficacy of additional evidence-based health information delivered via the app in improving lifestyle during pregnancy between the standard app and enhanced app groups restricted to only frequent app users.

	Total n	All (n=193)[a]		Standard app group (n=98)[a]		Enhanced app group (n=95)[a]		P-value
		n, mean or median	%, SD or IQR	n, mean or median	%, SD or IQR	n, mean or median	%, SD or IQR	
Diet quality total scores								
Diet quality scores in early pregnancy	191/97/94	9.8	2.1	9.5	2.1	10.1	2.0	0.042[b]
Diet quality scores in late pregnancy	144/73/71	9.9	2.0	9.9	1.9	10.0	2.2	0.81[b]
Change in diet quality scores between early and late pregnancy	143/72/71	0.02	1.6	0.2	1.5	-0.2	1.7	0.14[b]
Diet quality components								
Regular eating frequency (≤2 meals skipped per week) in early pregnancy	191/97/94	177	92.7	87	89.7	90	95.7	0.16[c]
Regular eating frequency (≤2 meals skipped per week) in late pregnancy	144/73/71	130	90.3	67	91.8	63	88.7	0.58[c]
Eating vegetables daily in early pregnancy	191/97/94	142	74.3	70	72.2	72	76.6	0.51[c]
Eating vegetables daily in late pregnancy	144/73/71	108	75.0	50	68.5	58	81.7	0.084[c]
Eating fruits and/or berries daily in early pregnancy	191/97/94	119	62.3	55	56.7	64	68.1	0.14[c]
Eating fruits and/or berries daily in late pregnancy	144/73/71	109	75.7	55	75.3	54	76.1	1[c]
Eating vegetables, fruit and/or berries ≥5 portions/day in early pregnancy	191/97/94	89	46.6	38	39.2	51	54.3	0.043[c]
Eating vegetables, fruit and/or berries ≥5 portions/day in late pregnancy	144/73/71	83	57.6	37	50.7	46	64.8	0.095[c]
Weight								
Change in weight between early and late pregnancy, kg	141/69/72	9.4	4.6	9.6	5.3	9.2	3.7	0.62[b]

Weekly weight gain rate, kg	141/69/72	0.5	0.2	0.5	0.2	0.4	0.2	0.62[b]
Physical activity							
MET scores in early pregnancy	191/97/94	7.5	3.0 – 18.8	7.5	3.0 – 18.8	7.5	4.8 – 18.8	0.22[d]
MET scores in late pregnancy	142/71/71	3.0	0.5 – 12.0	2.0	0.0 – 7.5	4.8	1.2 – 12.0	0.015[d]
Change in MET scores between early and late pregnancy	140/70/70	-2.4	-9.3 – 0.0	-2.4	-10.8 – 0.0	-2.0	-9.0 – 0.0	0.48[d]

IQR, interquartile range

SD, standard deviation

[a] Original number of participants (in the group) among frequent app users

[b] Independent samples T-test

[c] Fisher's exact test

[d] Mann-Whitney U test

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Supplemental table 3. The proportion of frequent app users agreeing (strongly agree or agree) with the statements regarding the use of the health app.

Statement	Total n	All (n=193)[a]		Standard app group (n=98)[a]		Enhanced app group (n=95)[a]		P-value[b]
		n agreeing with the statement[c]	%	n agreeing with the statement[c]	%	n agreeing with the statement[c]	%	
It is nice to use the app	133/71/62	65	48.9	32	45.1	33	53.2	0.39
It is difficult to use the app	136/67/69	44	32.4	23	34.3	21	30.4	0.72
I have had technical problems with the app	142/72/70	44	31.0	26	36.1	18	25.7	0.21
It suits me well to record lifestyle factors in the app daily	137/68/69	40	29.2	18	26.5	22	31.9	0.57
It suits me well to record lifestyle factors in the app weekly	135/69/66	63	46.7	30	43.5	33	50.0	0.49
By using the app, I have tried to increase my vegetable consumption	130/64/66	56	43.1	23	35.9	33	50.0	0.12
By using the app, I have tried to increase my fruit consumption	134/67/67	53	39.6	21	31.3	32	47.8	0.077
By using the app, I have tried to improve my eating habits as a whole	130/65/65	51	39.2	19	29.2	32	49.2	0.031
By using the app, I have tried to increase my physical activity	136/67/69	42	30.9	16	23.9	26	37.7	0.096
By using the app, I have tried to improve my lifestyle overall	126/64/62	40	31.7	17	26.6	23	37.1	0.25
Using the app has not affected my lifestyle	129/65/64	72	55.8	41	63.1	31	48.4	0.11
It has been easy to follow my weight during pregnancy with the app	118/59/59	36	30.5	15	25.4	21	35.6	0.32
It has been easy to follow my blood glucose values during pregnancy with the app	32/19/13	10	31.3	4	21.1	6	46.2	0.24

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I will probably use the app during the whole pregnancy	135/67/68	61	45.2	32	47.8	29	42.6	0.61
I would probably use the app if I became pregnant again	118/58/60	28	23.7	14	24.1	14	23.3	1
I could recommend the use of the app to my friend when she's pregnant	127/60/67	54	42.5	24	40.0	30	44.8	0.60

[a] Original number of participants (in the group) among frequent app users

[b] Fisher's exact test

[c] Combination of answers 'strongly agree' and 'agree' compared with combination of answers 'strongly disagree' and 'disagree'; women answering 'not sure' were excluded from the analyses

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Supplemental table 4. The proportion of all participants and app non-users, occasional users and frequent users agreeing (strongly agree or agree) with the statements regarding the use of the health app.

Statement	Total n	All (n=1038)[a]		Non-user (n=652)[a]		Occasional user (n=193)[a]		Frequent user (n=193)[a]		P-value[b]
		n agreeing with the statement[c]	%	n agreeing with the statement[c]	%	n agreeing with the statement[c]	%	n agreeing with the statement[c]	%	
It is nice to use the app	308/113/62/133	83	26.9	14	12.4	4	6.5	65	48.9	<0.001
It is difficult to use the app	325/125/64/136	176	54.2	85	68.0	47	73.4	44	32.4	<0.001
I have had technical problems with the app	296/102/52/142	85	28.7	24	23.5	17	32.7	44	31.0	0.35
It suits me well to record lifestyle factors in the app daily	319/119/63/137	56	17.6	13	10.9	3	4.8	40	29.2	<0.001
It suits me well to record lifestyle factors in the app weekly	314/120/59/135	113	36.0	37	30.8	13	22.0	63	46.7	0.001
By using the app, I have tried to increase my vegetable consumption	253/81/42/130	76	30.0	13	16.0	7	16.7	56	43.1	<0.001
By using the app, I have tried to increase my fruit consumption	257/81/42/134	74	28.8	15	18.5	6	14.3	53	39.6	<0.001
By using the app, I have tried to improve my eating habits as a whole	254/82/42/130	73	28.7	15	18.3	7	16.7	51	39.2	<0.001
By using the app, I have tried to increase my physical activity	259/83/40/136	57	22.0	12	14.5	3	7.5	42	30.9	<0.001
By using the app, I have tried to improve my lifestyle overall	246/80/40/126	58	23.6	13	16.3	5	12.5	40	31.7	0.008
Using the app has not affected my lifestyle	262/88/45/129	170	64.9	64	72.7	34	75.6	72	55.8	0.01
It has been easy to follow my weight during pregnancy with the app	232/73/41/118	52	22.4	13	17.8	3	7.3	36	30.5	0.005

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It has been easy to follow my blood glucose values during pregnancy with the app	78/31/15/32	15	19.2	5	16.1	0	0.0	10	31.3	0.034
I will probably use the app during the whole pregnancy	326/128/63/135	70	21.5	9	7.0	0	0.0	61	45.2	<0.001
I would probably use the app if I became pregnant again	292/115/59/118	49	16.8	18	15.7	3	5.1	28	23.7	0.007
I could recommend the use of the app to my friend when she's pregnant	299/113/59/127	87	29.1	27	23.9	6	10.2	54	42.5	<0.001

[a] Original number of participants (in the group)

[b] Chi-squared test

[c] Combination of answers 'strongly agree' and 'agree' compared with combination of anwers 'strongly disagree' and 'disagree'; women answering 'not sure' were excluded from the analyses