

Figure 1 Risk of bias summary.

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias): All outcomes	Selective reporting (reporting bias)	Overall bias
Barrera et al., 2015	+	?	?	?	-	?	-
Duffecy et al., 2019	+	?	?	+	-	+	-
Felder et al., 2020	+	+	-	-	+	+	-
Fonseca et al., 2019	+	?	+	?	+	+	?
Forsell et al., 2017	+	?	-	-	+	+	-
Heller et al., 2020	+	+	?	?	+	+	?
Jannati et al., 2020	+	?	-	?	+	+	-
Jiao et al., 2019	+	+	-	+	+	+	-
Kalmbach et al., 2020	+	?	-	+	+	+	-
Kersting et al., 2011	+	?	?	?	+	?	?
Kersting et al., 2013	+	?	-	-	+	?	-
King, 2019	+	+	?	?	-	?	-
Klein et al., 2012	+	?	?	?	+	?	?
Loughnan et al., 2019	+	+	-	?	+	+	-
Matvienko-Sikar et al., 2017	+	+	+	?	+	?	?
Milgrom et al., 2016	+	+	-	+	+	+	-
Missler et al., 2020	+	?	-	-	+	+	-
Molenaar et al., 2020	+	?	-	+	+	+	-
Nieminen et al., 2016	+	?	?	?	+	?	?
O' Mahen et al., 2013	+	+	?	?	+	?	?
O' Mahen et al., 2014	+	+	?	?	+	?	?
Pugh et al., 2016	+	+	-	+	+	+	-
Scherer et al., 2016	+	?	?	?	-	+	-
Urech et al., 2018	+	?	?	?	+	?	?
Yang et al., 2019	+	+	?	+	+	?	?

Figure 2 Bubble plot for effect size (Hedges's g) of depression symptoms on age and use of cognitive behavioral therapy.

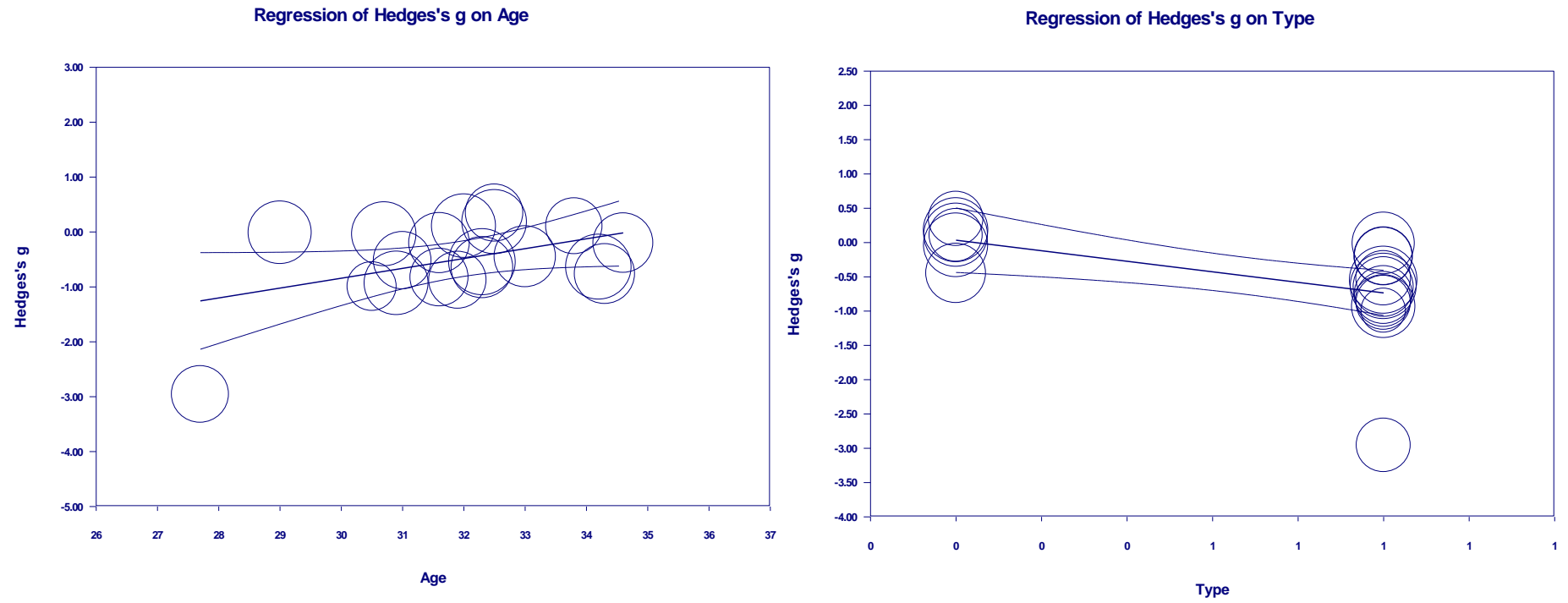
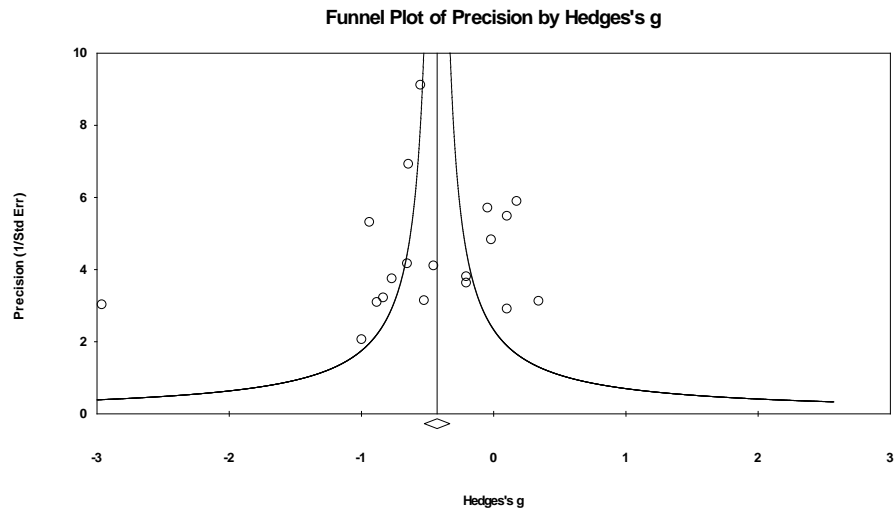
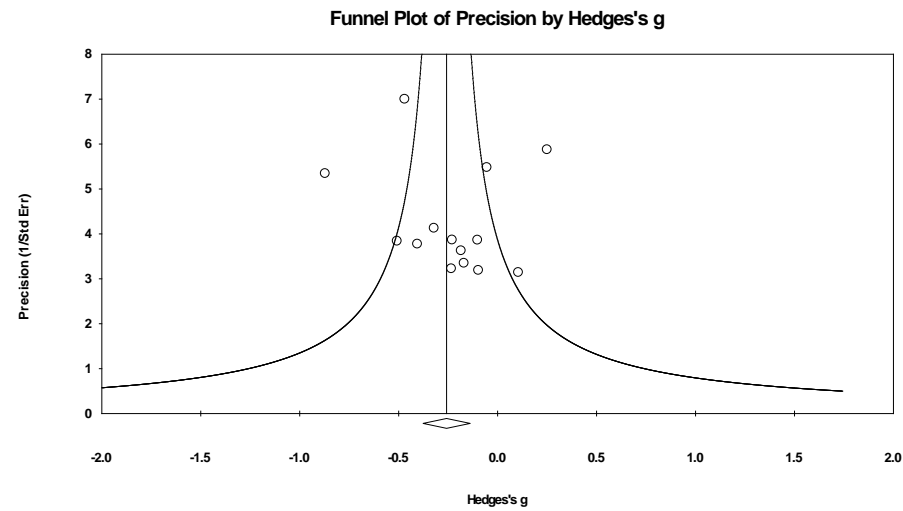


Figure 3 Funnel plots of precision by Hedges's g of depression, anxiety and stress symptoms.

a. Depression symptoms



b. Anxiety symptoms



c. Stress symptoms

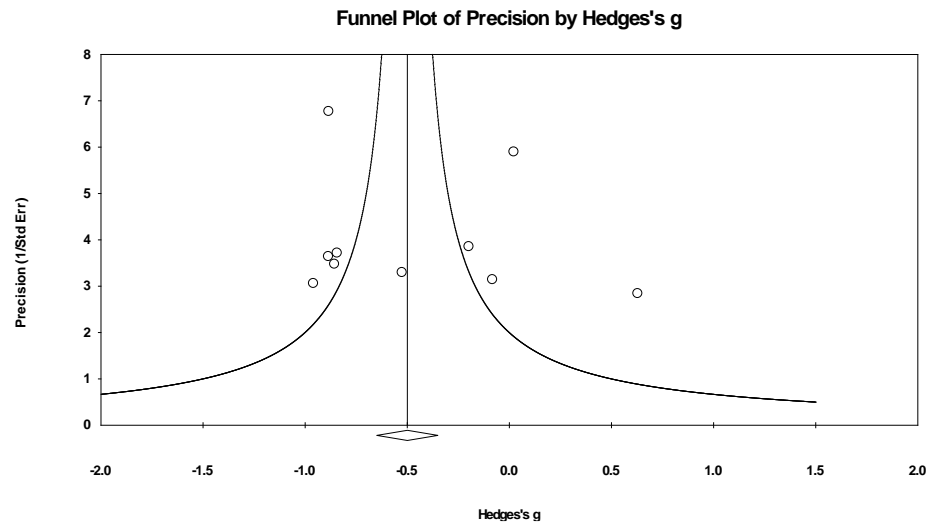


Table 1 Eligible criteria for systematic review

Criteria	Inclusion criteria	Exclusion criteria
Population	Perinatal women aged 18 years and above, including antenatal and postnatal mothers	Women who had complicated pregnancy Women who have cognitive impairment
Intervention	The psychotherapeutic intervention were included if the content design based on theoretical principle of cognitive behavioral theory, mindfulness therapy, problem solving therapy, stress reduction therapy, psychoeducation intervention or its combination that were delivered via website or/and mobile application.	Intervention without using a digital platform Intervention without psychotherapeutic elements
Comparison	treatment as usual, waitlist control or placebo control	

Primary outcomes	Depression symptoms Anxiety symptoms Stress symptoms	
Type of design	Any types of randomized controlled trials (RCTs)	Controlled Clinical Trials (CCTs) One-group pre-test post-test study design Non-experimental studies Qualitative studies Reviews
Years of publication	No limit	
Publication type	Published primary research Unpublished thesis	Abstract only Conference proceedings Book chapter reviews Editorials Letters
Language	English	Non-English

Table 2 Index and keyword terms used in eight databases.

Database	Index and keyword terms
PubMed	<p> “Prenatal Care”[Mesh] OR “Perinatal Care”[Mesh] OR “Pregnancy”[Mesh] OR “Antepartum period”[Mesh] OR “Peripartum period”[Mesh] OR prenatal*[Title/Abstract] OR pre-natal*[Title/Abstract] OR perinatal*[Title/Abstract] OR perinatal women* [Title/Abstract] OR antenatal women*[Title/Abstract] OR peripartum*[Title/Abstract] OR antenatal*[Title/Abstract] OR antepartum[Title/Abstract] OR postnatal*[Title/Abstract] OR post-natal*[Title/Abstract] OR postpartum[Title/Abstract] OR post- partum*[Title/Abstract] pregnant[Title/Abstract] OR pregnan*[Title/Abstract] </p> <p>AND</p> <p> “Mental Health”[Mesh] OR “Psychology”[Mesh] OR “Depression”[Mesh] OR “Psychophysiology”[Mesh] OR “psychotherapy”[Mesh] OR Depress*[Title/Abstract] OR well-being[Title/Abstract] OR stress[Title/Abstract] OR psychosocial[Title/Abstract] OR mental health[Title/Abstract] OR emotion*[Title/Abstract] OR psycholog*[Title/Abstract] OR panic[Title/Abstract] OR anxiety[Title/Abstract] OR anxious[Title/Abstract] OR mood[Title/Abstract] OR phobia[Title/Abstract] OR bipolar[Title/Abstract] OR posttraumatic stress disorder[Title/Abstract] OR posttraumatic stress[Title/Abstract] </p> <p>AND</p> <p> “Therapy, Computer-Assisted”[Mesh] OR “Internet”[Mesh] OR “Computers”[Mesh] OR “Mobile Applications”[Mesh] OR Computer*[Title/Abstract] OR internet[Title/Abstract] OR web[Title/Abstract] OR web- based[Title/Abstract] OR technology[Title/Abstract] OR application[Title/Abstract] OR apps[Title/Abstract] OR e-health[Title/Abstract] OR m-health[Title/Abstract] OR mhealth[Title/Abstract] OR </p>

	<p>teleconferencing[Title/Abstract] OR "behaviour therapy"[Title/Abstract] OR "cognitive therapy"[Title/Abstract] OR "Psychotherapy"[Title/Abstract] OR behavioural activation [Title/Abstract] OR cognitive behaviour [Title/Abstract] OR cognition[Title/Abstract] OR cognitive psychotherapy[Title/Abstract] OR cognition therapy[Title/Abstract] OR "behavioral therapy"[Title/Abstract] cognitive arousal[Title/Abstract] OR "cognitive behavioral"[Title/Abstract] OR "cognitive behavioural"[Title/Abstract] OR CBT[Title/Abstract] OR ICBT[Title/Abstract] OR "cognitive restructuring"[Title/Abstract] OR psychoeducation[Title/Abstract] OR "behaviour modification"[Title/Abstract] OR "cognitive remediation"[Title/Abstract]</p>
EMBASE	<p>'Prenatal Care'/exp OR 'Perinatal Care*':ti,ab OR 'Pregnancy*':ti,ab OR 'Antepartum period*':ti,ab OR 'Peripartum period*':ti,ab OR prenatal*:ti,ab OR pre-natal*:ti,ab OR perinatal*:ti,ab OR perinatal women*:ti,ab OR peripartum*:ti,ab OR antenatal*:ti,ab OR ante-natal*:ti,ab OR antepartum:ti,ab OR ante-partum*:ti,ab OR postnatal*:ti,ab OR post-natal*:ti,ab OR postpartum:ti,ab OR post-partum*:ti,ab OR pregnant:ti,ab OR pregnant*:ti,ab</p> <p>AND</p> <p>'mental health'/exp OR 'psychology'/exp OR 'depression'/exp OR 'psychophysiology'/exp OR 'psychotherapy'/exp OR depress*:ti,ab OR 'well-being':ti,ab OR stress:ti,ab OR psychosocial:ti,ab OR 'mental health':ti,ab OR emotion*:ti,ab OR psycholog*:ti,ab OR panic:ti,ab OR anxiety:ti,ab OR anxious:ti,ab OR mood:ti,ab OR phobia:ti,ab OR bipolar:ti,ab OR posttraumatic stress disorder:ti,ab OR posttraumatic stress:ti,ab</p> <p>AND</p> <p>'computer assisted therapy'/exp OR 'internet'/exp OR 'computer'/exp OR 'mobile application'/exp OR computer*:ti,ab OR internet:ti,ab OR web:ti,ab OR 'web based':ti,ab OR technology:ti,ab OR application*:ti,ab OR</p>

	<p>apps:ti,ab OR 'e health':ti,ab OR 'm health':ti,ab OR mhealth:ti,ab OR teleconferencing:ti,ab OR 'behaviour therapy':ti,ab OR 'cognitive therapy':ti,ab OR Psychotherapy:ti,ab OR 'behavioural activation':ti,ab OR 'cognitive behaviour':ti,ab OR cognition:ti,ab OR 'cognitive psychotherapy':ti,ab OR 'cognition therapy':ti,ab OR 'behavioral therapy':ti,ab OR 'cognitive arousal':ti,ab OR 'cognitive behavioral':ti,ab OR 'cognitive behavioural':ti,ab OR CBT:ti,ab OR ICBT:ti,ab OR 'cognitive restructuring':ti,ab OR psychoeducation:ti,ab OR 'behaviour modification':ti,ab OR 'cognitive remediation':ti,ab</p>
<p>Cochrane Library</p>	<p>MeSH descriptor: [Perinatal Care] explode all trees OR MeSH descriptor: [Prenatal Care] explode all trees OR MeSH descriptor: [Pregnancy] explode all trees OR MeSH descriptor: [Peripartum Period] explode all trees OR (prenatal* OR pre-natal* OR perinatal* OR perinatal women* OR peripartum* OR antenatal* OR ante-natal* OR antepartum OR ante-partum* OR postnatal* OR post-natal* OR postpartum OR post-partum* pregnant OR pregnan*):ti,ab,kw AND MeSH descriptor: [Mental health] explode all trees OR MeSH descriptor: [Psychology] explode all trees OR MeSH descriptor: [Depression] explode all trees OR MeSH descriptor: [Psychophysiology] explode all trees OR MeSH descriptor: [psychotherapy] explode all trees OR (Depress* OR well-being OR stress OR psychosocial OR mental health OR emotion* OR psycholog* OR panic OR anxiety OR anxious OR mood OR phobia OR bipolar OR posttraumatic stress disorder OR posttraumatic stress):ti,ab,kw AND MeSH descriptor: [Therapy, Computer-Assisted] explode all trees OR MeSH descriptor: [Internet] explode all trees OR MeSH descriptor: [Computers] explode all trees OR MeSH descriptor: [Mobile Applications] explode all trees OR (Computer* OR internet OR web OR web-based OR technology OR application OR apps OR e-health OR m-</p>

	<p>health OR mhealth OR teleconferencing OR behaviour therapy OR cognitive therapy OR Psychotherapy OR behavioural activation OR cognitive behaviour OR cognition OR cognitive psychotherapy OR cognition therapy OR behavioral therapy OR cognitive arousal OR cognitive behavioral OR cognitive behavioural OR CBT OR ICBT OR cognitive restructuring OR psychoeducation OR behaviour modification OR cognitive remediation):ti,ab,kw</p>
CINAHL	<p>(MH "Antenatal Period+") OR (MH "Antenatal Care+") OR (MH "Maternal-Child Health") OR (MH "Perinatal Nursing") OR (MH "Perinatal Care") OR TI(prenatal* OR pre-natal* OR perinatal* OR perinatal women* OR peripartum* OR antenatal* OR ante-natal* OR antepartum OR ante-partum* OR postnatal* OR post-natal* OR postpartum OR post-partum* OR pregnant OR pregnan*) OR AB(OR prenatal* OR pre-natal* OR perinatal* OR perinatal women* OR peripartum* OR antenatal* OR ante-natal* OR antepartum OR ante-partum* OR postnatal* OR post-natal* OR postpartum OR post-partum* OR pregnant OR pregnant*)</p> <p>AND</p> <p>(MH "Mental Health") OR (MH "Psychology+") OR (MH "Depression+") OR (MH "Psychophysiology+") OR (MH "Psychotherapy+") OR TI (Depress* OR well-being OR stress OR psychosocial OR "mental health" OR emotion* OR psycholog* OR panic OR anxiety OR anxious OR mood OR phobia OR bipolar OR "posttraumatic stress disorder" OR "posttraumatic stress") OR AB (Depress* OR well-being OR stress OR psychosocial OR "mental health" OR emotion* OR psycholog* OR panic OR anxiety OR anxious OR mood OR phobia OR bipolar OR "posttraumatic stress disorder" OR "posttraumatic stress")</p> <p>AND</p> <p>(MH "Therapy, Computer Assisted+") OR (MH "Internet+") OR (MH "Computers and Computerization+") OR (MH "Mobile Applications") OR TI (Computer* OR internet OR web OR web-based OR technology OR application*</p>

	<p>OR apps OR e-health OR m-health OR mhealth OR teleconferencing OR behaviour therapy OR cognitive therapy OR Psychotherapy OR behavioural activation OR cognitive behaviour OR cognition OR cognitive psychotherapy OR cognition therapy OR behavioral therapy OR cognitive arousal OR cognitive behavioral OR cognitive behavioural OR CBT OR ICBT OR cognitive restructuring OR psychoeducation OR behaviour modification OR cognitive Remediation) OR AB (Computer* OR internet OR web OR web-based OR technology OR application* OR apps OR e-health OR m-health OR mhealth OR teleconferencing OR behaviour therapy OR cognitive therapy OR Psychotherapy OR behavioural activation OR cognitive behaviour OR cognition OR cognitive psychotherapy OR cognition therapy OR behavioral therapy OR cognitive arousal OR cognitive behavioral OR cognitive behavioural OR CBT OR ICBT OR cognitive restructuring OR psychoeducation OR behaviour modification OR cognitive remediation)</p>
<p>PsycINFO</p>	<p>exp Prenatal Care / or exp Pregnancy/ or exp Antepartum period / or exp Peripartum period / or (prenatal* OR pre-natal* OR perinatal* OR peripartum* OR antenatal* OR ante-natal* OR antepartum OR ante-partum* OR postnatal* OR post-natal* OR postpartum OR post-partum* OR pregnant OR pregnan*).ti. or (prenatal* OR pre-natal* OR perinatal* OR peripartum* OR antenatal* OR ante-natal* OR antepartum OR ante-partum* OR postnatal* OR post-natal* OR postpartum OR post-partum* OR pregnant OR pregnan*).ab</p> <p>AND</p> <p>exp Mental Health/ or exp Psychology/ or exp Depression/ or exp Psychophysiology/ or exp Psychotherapy/ or (Depress* or well-being or stress or psychosocial or mental health or emotion* or psychologist* or panic or anxiety or anxious or mood or phobia or bipolar or posttraumatic stress disorder or posttraumatic stress).ti. or (Depress* or</p>

	<p>well-being or stress or psychosocial or mental health or emotion* or psycholog* or panic or anxiety or anxious or mood or phobia or bipolar or posttraumatic stress disorder or posttraumatic stress).ab</p> <p>AND</p> <p>exp Computer Assisted Therapy/ or exp Computers/ or exp Computer Applications/ or exp internet/ or (Computer* or internet or web or web-based or technology or application* or apps or e-health or m-health or mhealth or teleconferencing or behaviour therapy or behavior therapy or cognitive or cognition or coping or behaviour therapy OR cognitive therapy OR psychotherapy OR behavioural activation OR cognitive behaviour OR cognition OR cognitive psychotherapy OR cognition therapy OR behavioral therapy OR cognitive arousal OR cognitive behavioral OR cognitive behavioural OR CBT OR ICBT OR cognitive restructuring OR psychoeducation OR behaviour modification OR cognitive remediation).ti. or (Computer* or internet or web or web-based or technology or application* or apps or e-health or m-health or mhealth or teleconferencing or behaviour therapy or behavior therapy or cognitive or cognition or coping OR behaviour therapy OR cognitive therapy OR psychotherapy OR behavioural activation OR cognitive behaviour OR cognition OR cognitive psychotherapy OR cognition therapy OR behavioral therapy OR cognitive arousal OR cognitive behavioral OR cognitive behavioural OR CBT OR ICBT OR cognitive restructuring OR psychoeducation OR behaviour modification OR cognitive remediation).ab.</p>
ProQuest	<p>MAINSUBJECT.EXACT("Prenatal Care") OR MAINSUBJECT.EXACT("Perinatal Care") OR MAINSUBJECT.EXACT("Pregnancy") OR MAINSUBJECT.EXACT("Antepartum period") OR MAINSUBJECT.EXACT("Peripartum period") OR TI (Perinatal women OR prenatal\$ OR pre-natal\$ OR perinatal\$ OR peripartum\$ OR antenatal\$ OR antenatal\$ OR antepartum OR ante-partum\$ OR postnatal\$ OR postnatal\$ OR postpartum OR post-partum\$ OR pregnant OR pregnan\$) OR AB (Perinatal women OR prenatal\$ OR</p>

pre-natal\$ OR perinatal\$ OR peripartum\$ OR antenatal\$ OR antenatal\$ OR antepartum OR ante-partum\$ OR postnatal\$ OR post-natal\$ OR postpartum OR post-partum\$ OR pregnant OR pregnan\$)

AND

MAINSUBJECT.EXACT("Mental Health") OR MAINSUBJECT.EXACT("Psychology") OR MAINSUBJECT.EXACT("Depression") OR MAINSUBJECT.EXACT("Psychophysiology") OR MAINSUBJECT.EXACT("psychotherapy") OR TI (Depress* OR well-being OR stress OR psychosocial OR "mental health" OR emotion* OR psycholog* OR panic OR anxiety OR anxious OR mood OR phobia OR bipolar OR "posttraumatic stress disorder" OR "posttraumatic stress") OR AB (Depress* OR well-being OR stress OR psychosocial OR "mental health" OR emotion* OR psycholog* OR panic OR anxiety OR anxious OR mood OR phobia OR bipolar OR "posttraumatic stress disorder" OR "posttraumatic stress")

AND

MAINSUBJECT.EXACT("Computer Assisted Therapy") OR MAINSUBJECT.EXACT("Internet") OR MAINSUBJECT.EXACT("Computers") OR MAINSUBJECT.EXACT("Mobile Applications") OR TI (Computer* OR internet OR web OR web-based OR technology OR application* OR apps OR e-health OR m-health OR mhealth OR teleconferencing OR "behaviour therapy" OR "cognitive therapy" OR Psychotherapy OR "behavioural activation" OR cognitive behaviour OR cognition OR "cognitive psychotherapy" OR "cognition therapy" OR "behavioral therapy" OR "cognitive arousal" OR "cognitive behavioral" OR "cognitive behavioural" OR CBT OR ICBT OR "cognitive restructuring" OR psychoeducation OR "behaviour modification" OR "cognitive remediation") OR AB (Computer* OR internet OR web OR web-based OR technology OR application* OR apps OR e-health OR m-health OR mhealth OR teleconferencing OR "behaviour therapy" OR "cognitive therapy" OR Psychotherapy OR

	<p>“behavioural activation” OR cognitive behaviour OR cognition OR “cognitive psychotherapy” OR “cognition therapy” OR “behavioral therapy” OR “cognitive arousal” OR “cognitive behavioral” OR “cognitive behavioural” OR CBT OR ICBT OR “cognitive restructuring” OR psychoeducation OR “behaviour modification” OR “cognitive remediation”)</p>
Scopus	<p>TITLE-ABS(("Perinatal care" OR "Perinatal women" OR "Pregnancy" OR "Prenatal care" OR "Antepartum period" OR "Peripartum period" OR prenatal* OR pre-natal* OR perinatal* OR peripartum* OR antenatal* OR ante-natal* OR antepartum OR ante-partum* OR postnatal* OR post-natal* OR postpartum OR post-partum* OR pregnant OR pregnan*) AND (Depress* OR well-being OR stress OR psychosocial OR mental health OR emotion* OR psycholog* OR panic OR anxiety OR anxious OR mood OR phobia OR bipolar OR "posttraumatic stress disorder" OR "posttraumatic stress") AND (Computer* OR internet OR web OR web-based OR technology OR application* OR apps OR e-health OR m-health OR mhealth OR teleconferencing OR "behaviour therapy" OR "cognitive therapy" OR Psychotherapy OR "behavioural activation" OR "cognitive behaviour" OR cognition OR "cognitive psychotherapy" OR "cognition therapy" OR "behavioral therapy" OR "cognitive arousal" OR "cognitive behavioral" OR "cognitive behavioural" OR CBT OR ICBT OR "cognitive restructuring" OR psychoeducation OR "behaviour modification" OR "cognitive remediation"))</p>
Web of Science	<p>TS=("Perinatal care" OR "Perinatal women" OR "Pregnancy" OR "Prenatal care" OR "Antepartum period" OR "Peripartum period") OR TI=(prenatal* OR pre-natal* OR perinatal* OR peripartum* OR antenatal* OR ante-natal* OR antepartum OR ante-partum* OR postnatal* OR post-natal* OR postpartum OR post-partum* OR pregnant OR pregnan*) AND</p>

TS=("Mental Health" OR "Psychology" OR "Depression" OR "Psychophysiology" OR "psychotherapy") OR
TI=(Depress* OR well-being OR stress OR psychosocial OR mental health OR emotion* OR psycholog* OR panic
OR anxiety OR anxious OR mood OR phobia OR bipolar OR posttraumatic stress disorder OR posttraumatic stress)
AND
TS=("Therapy, Computer Assisted" OR "Internet" OR "Computers" OR "Mobile Applications") OR TI=(Computer*
OR internet OR web OR web-based OR technology OR application* OR apps OR e-health OR m-health OR mhealth
OR teleconferencing OR behaviour therapy OR cognitive therapy OR Psychotherapy OR behavioural activation OR
cognitive behaviour OR cognition OR cognitive psychotherapy OR cognition therapy OR behavioral therapy OR
cognitive arousal OR cognitive behavioral OR cognitive behavioural OR CBT OR ICBT OR cognitive restructuring
OR psychoeducation OR behaviour modification OR cognitive remediation)

Table 3 Description of digital psychotherapeutic intervention of selected 25 trials.

Ref.	Aim	Psychotherapy principle	Elements	Digital platform	Length	Session	Intensity	Duration	Follow-up	Guided by	Theory
Barrera <i>et al</i> ^[62] , 2015	Prevention	Cognitive behavioral therapy	Counselling, Education, Advice, Assignment, Feedback	Website	90 mins	8	Weekly	8 weeks	6 months postpartum	Self	Yes
Duffecy <i>et al</i> ^[63] , 2019	Prevention	Cognitive behavioral therapy	Counselling, Education, Advice, Feedback, Forum, Task	Website + Email	10-15 mins	16	2 times /week	8 weeks	4 and 6 weeks postpartum	Therapist	Yes
Felder <i>et al</i> ^[64] , 2020	Treatment	Cognitive behavioral therapy	Counselling, Education, Advice, Assignment, Reminder, Forum, Support	Website or Mobile application	20 mins	6	Weekly	6 weeks	18 weeks postpartum	Virtual therapist	Yes
Fonseca <i>et al</i> ^[65] , 2019	Treatment	Cognitive behavioral therapy	Counselling, Education, Advice, Assignment, Feedback, Support	Website + Email	NR	5	Weekly	6 weeks	NR	Self	Yes

		Mindfulness component										
		Psychoeducation component										
Forsell <i>et al</i> ^[66] , 2017	Treatm ent	Cognitive behavioral therapy		Counselling, Education, Advice, Assignment, Reminder, Feedback, Support	Website	NR	10	Weekl y	10 weeks	NR	Self	Yes
Heller <i>et al</i> ^[67] , 2020	Treatm ent	Problem solving therapy Psychoeducation component		Counselling, Education, Advice, Assignment, Reminder, Feedback, Q&A	Website + Email, Phone	NR	5	Weekl y	5 weeks	10 weeks antenatal to 6 weeks postpartum	Therapist	Yes
Jannati <i>et al</i> ^[68] , 2020	Treatm ent	Cognitive behavioral therapy		Counselling, Education, Story	Mobile application	45-60 mins	8	Weekl y	8 weeks	2 months	Self	Yes

		Problem solving component										
Jiao <i>et al</i> ^[69] , 2019	Prevention	Psychoeducation intervention	Education, Advice, Reminder, Forum, Q&A	Website	NR	NR	NR	4 weeks	3 and 6 months	Resear ch team	Yes	
Kalmbach <i>et al</i> ^[70] , 2020	Treatment	Cognitive behavioral therapy	Counselling, Education, Advice	Website	NR	6	Weekl y	6 weeks	6 weeks postpartum	Virtual therapi st	Yes	
Kerstin g <i>et al</i> ^[72] , 2011	Prevention	Cognitive behavioral therapy	Counselling, Education, Advice, Assignment, Feedback, Support	Website	45 mins	10	2 times /wee k	5 weeks	12 weeks Post-intervention	Therap ist	Yes	
Kerstin g <i>et al</i> ^[71] , 2013	Prevention	Cognitive behavioral therapy	Counselling, Education, Advice, Assignment, Feedback, Support	Website	45 mins	10	2 times /wee k	5 weeks	12 weeks, 12 months	Therap ist	Yes	

										Post- interve ntion		
King ^[86]], 2009	Preven tion	Stress reduction therapy	Counselling, Education, Advice, Assignment, Support	Website +,Email, Phone	60 mins	4	Weekl y	5 weeks	12 months	Self	Yes	
Klein <i>et al</i> ^[73] , 2012	Preven tion	Psychoeducation intervention	Education, Advice, Forum, Support, Q&A	Website	NR	NR	NR	NR	3 months	Therap ist	No	
Lough nan <i>et</i> <i>al</i> ^[74] , 2019	Preven tion	Cognitive behavioral Problem solving component Psychoeducation component	Counselling, Education, Assignment, Reminder, Q&A, Story	Website + Email, Phone, SMS	NR	3	Weekl y	4 weeks	4 weeks postpar tum	Self	Yes	
Matvie nko- Sikar <i>et</i>	Preven tion	Mindfulness therapy	Body scan, Reflection, Assignment, Reminder	Website + SMS	NR	12	4 times /wee k	3 weeks	NR	Therap ist	Yes	

<i>al</i> ^[75] ,												
2017												
Milgro m	Treatm ent	Cognitive behavioral therapy	Counselling, Education, Advice, Assignment, Feedback, Support, Forum, Personalization, Self-monitoring	Website + Email, Phone	30 mins	6	Weekl y	6 weeks	9,12 weeks	Therap ist	Yes	
<i>al</i> ^[76] ,		Behavioural activation							post- interve ntion			
2016												
Missle r	Preven tion	Psychoeducation intervention	Education, Advice, Support, Booklet, Q&A	Website + Email, Phone	15-20 mins	4	NR	4 weeks	6 and 10 weeks	Resear ch team	No	
<i>al</i> ^[77] ,									postpar tum			
2020												
Molen aar	Preven tion	Cognitive behavioral therapy (Preventive)	Counselling, Education, Advice, Assignment	Mobile applicatio n	30 mins	8	Weekl y	8 weeks	12 weeks	Therap ist	Yes	
<i>al</i> ^[78] ,									postpar tum			
2020												
Niemi nen	Treatm ent	Cognitive behavioral	Counselling, Education, Advice,	Website	NR	8	Weekl y	8 weeks	3 months	Therap ist	Yes	

<i>al</i> ^[79] , 2016		therapy (Trauma focused CBT) Psychoeducation component	Assignment, Feedback, Support						and 6 months		
O'Mahen <i>et al</i> ^[81] , 2013	Treatment	Cognitive behavioral therapy (Behavioural activation)	Counselling, Education, Advice, Assignment, Forum, Support, Reminder, Self-monitoring, Q&A	Website + Email	≥ 40 mins	11	Weekly	≤ 15 weeks	NR	Therapist	Yes
O'Mahen <i>et al</i> ^[80] , 2014	Treatment	Cognitive behavioral therapy (Behavioural activation)	Counselling, Education, Advice, Assignment, Forum, Support, Reminder, Self-monitoring, Q&A	Website + Email, SMS, Phone	NR	12	Weekly	12 weeks	17 weeks and 6 months	Therapist	Yes
Pugh <i>et al</i> ^[82] , 2016	Treatment	Cognitive behavioral therapy	Counselling, Education, Advice, Assignment, Support, Q&A	Website + Email, Phone	NR	7	Weekly	7 weeks	4 week after post-	Therapist	Yes

									interve ntion		
Schere r <i>et al</i> ^[83] , 2016	Preven tion	Cognitive behavioral therapy Stress reduction therapy Problem solving component Psychoeducation component	Counselling, Education, Advice Assignment, Feedback, Q&A	Website + Phone	NR	6	Weekl y	6 weeks	NR	Therap ist	Yes
Urech <i>et al</i> ^[84] , 2018	Preven tion	Cognitive behavioral therapy Stress reduction therapy Problem solving component Psychoeducation component	Counselling, Education, Advice Assignment, Feedback, Forum	Website	NR	6	Weekl y	6 weeks	NR	Self	Yes

Yang <i>et al</i> ^[85] , 2019	Treatm ent	Mindfulness therapy Stress reduction component	Counselling, Education, Assignment, Forum, Q&A, Tracking	Mobile applicatio n + Phone	40 mins	4	2 /wee k	8 weeks	NR	Therap ist	Yes
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Mins: Minutes; SMS: short messaging service; Q&A: Questions and answers; CBT: Cognitive Behavioral therapy

Table 4 GRADE criteria.

		Certainty assessment					No. of perinatal women		Effect Size	Certainty	Importance
No. of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Intervention group	Control group	Hedges' g [95% CI]		
Depression symptoms											
19	RCTs	Serious ^a	Serious ^b	Serious ^c	Serious ^d	Not detected	875	861	-0.49 [-0.75 - -0.23]	⊕○○○ ○ VERY LOW	IMPORTANT
Anxiety symptoms											
14	RCTs	Serious ^a	Serious ^b	Serious ^c	Serious ^d	Not detected	536	555	-0.25 [-0.42 - -0.07]	⊕○○○ ○ VERY LOW	IMPORTANT
Stress symptoms											

10	RCTs	Serious ^a	Serious ^b	Serious ^c	Serious ^d	Not detected	359	361	-0.47 [-0.79 -0.15]	⊕○○ ○ VERY LOW	IMPORTANT
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CI=Confidence interval; SMD=Standardised mean difference; RCT=Randomised controlled trials

Explanation

- More than half of the trials had unclear or high risks of selection, performance and detection biases
- Heterogeneity is high ($I^2 > 40\%$)
- There are variation of components, frequency, approach and duration in designing digital psychotherapeutic intervention across trials
- More than half of the trials used less than sample size of 50 per group, with wide confidence intervals.

