Supplementary Table 1. PRISMA 2020 Checklist

Section and Topic	ltem #	Checklist item	Location where item is reported			
TITLE						
Title	1	Identify the report as a systematic review.	1			
ABSTRACT						
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	2			
INTRODUCTION						
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	4-5			
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	5			
METHODS						
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	6-7			
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	6			
Search strategy	strategy 7 Present the full search strategies for all databases, registers and websites, including any filters and limits used.					
Selection process	rocess 8 Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.					
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	7			
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	7			
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.				
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	8			
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	9			
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).				
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.				
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	9			

Section and Topic	ltem #	Checklist item	Location where item is reported			
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	9			
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	NA			
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	NA			
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	NA			
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	8			
RESULTS						
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	10			
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.				
Study characteristics	17	Cite each included study and present its characteristics.	12-15			
Risk of bias in studies	18	Present assessments of risk of bias for each included study.				
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	10-12			
Results of	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	10			
syntheses	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	NA			
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	NA			
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	NA			
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	NA			
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	10			
DISCUSSION						
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	16-18			
	23b	Discuss any limitations of the evidence included in the review.	18-19			
	23c	Discuss any limitations of the review processes used.	19			
	23d	Discuss implications of the results for practice, policy, and future research.	19			

Section and Topic	ltem #	Checklist item	Location where item is reported					
OTHER INFORMA	TION							
Registration and	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	2&6					
protocol	24b	ndicate where the review protocol can be accessed, or state that a protocol was not prepared.						
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	NA					
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	20					
Competing interests	26	Declare any competing interests of review authors.	20					
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	20					

NA: not applicable.

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

Supplementary materials

Supplementary Table 2: Searching terms and outputs for six databases.

Database	Terms	Result
PubMed	((Probiotic* OR Prebiotic* OR Synbiotic* OR ("Probiotic* OR Prebiotic* OR Symbiotic*" [MeSH] OR	456
	("Probiotic* OR Prebiotic* OR Synbiotic*" [All Fields]))) AND (Pregnancy OR Lactation OR Antepartum OR	
	Prenatal OR Perinatal OR Postpartum OR ("Pregnancy" [MeSH] OR ("Pregnancy" [All Fields]))) AND	
	(Preeclampsia OR Hypertension disorders OR Gestational diabetes mellitus OR Premature rupture of membrane	
	OR Mastitis OR Breast engorgement OR Mental disorder OR Psychosis OR Depression OR Anxiety OR Safety	
	OR Pregnancy outcome OR Neonatal outcome OR Infection OR Preterm-labor OR Abortion OR Miscarriage OR	
	("Complication* OR Outcome*" [All Fields])) AND (Systematic review and meta-analysis OR Review OR meta- analysis))	
Web of	((Probiotic* OR Prebiotic* OR Synbiotic*) AND (Pregnancy OR Lactation OR Antepartum OR Prenatal OR	380
Science	Perinatal OR Postpartum) AND (Preeclampsia OR Hypertension disorders OR Gestational diabetes mellitus OR	
	Premature rupture of membrane OR Mastitis OR Breast engorgement OR Mental disorder OR Psychosis OR	
	Depression OR Anxiety OR Safety OR Pregnancy outcome OR Neonatal outcome OR Infection OR Preterm-labor	
	OR Abortion OR Miscarriage) AND (Systematic review and meta-analysis OR Review OR meta-analysis))	
Cochrane	(((Probiotics) OR (Prebiotics)OR (synbiotics) OR (symbiotics)) AND ((Systematic review and meta-analysis) OR	24
Library	("meta-analysis") OR (review)) AND ((Pregnancy) OR (lactation) OR (pregnancy outcome) OR (infant outcome)))	
	in Title Abstract Keyword - (Word variations have been searched)	
EMBASE	(((Probiotics) OR (Prebiotics)OR (synbiotics) OR (symbiotics)) AND ((Systematic review and meta-analysis) OR	554
	("meta-analysis") OR (review)) AND ((Pregnancy) OR (lactation) OR (pregnancy outcome) OR (infant outcome)))	
Science Direct	((Probiotics OR Prebiotics OR Synbiotics) AND (Pregnancy OR Lactation) AND (Systematic review and meta-	928
	analysis OR Review OR meta-analysis))	
Scopus	((probiotic* OR prebiotic* OR synbiotic*) AND (pregnancy OR lactation) AND (systematic AND review AND	240
	meta-analysis OR review OR meta-analysis))	
Total	·	2582

Review	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Certainty
Othman, et al. 2007	Serious	Not applicable	No serious	No serious	Not reported	•••0
Dugoua, et al. 2009	Not reported	No serious	No serious	No serious	Unlikely	•••0
Han, et al. 2019	No serious	No serious	No serious	No serious	Unlikely	••••
Masulli et al. 2020	No serious	No serious	No serious	No serious	Likely	•••0
Kuang, L., Y. 2020	No serious	No serious	No serious	No serious	Unlikely	••••
Moore, et al. 2020	No serious	Not applicable	No serious	No serious	Not applicable	••••
Desai, et al. 2021	No serious	No serious	No serious	No serious	Not done	•••0
Pérez et al. 202	Serious	No serious	No serious	No serious	Unlikely	•••0
Chen, et al. 2022	No serious	Serious	No serious	No serious	Likely	•000
Menichini, D. 2022	Serious	No serious	No serious	No serious	Unlikely	•••0
Colquitt, et al. 2022	No serious	Not reported	No serious	Not reported	Likely	•000
Yu, et al. 2022	No serious	No serious	No serious	No serious	Not done	•••0
Mahdizade et al. 2022	No serious	No serious	No serious	No serious	Likely	•••0
Movaghar, R 2022	No serious	Serious	No serious	No serious	Not reported	•••0
Martin, et al. 2022	No serious	Not applicable	No serious	No serious	Not applicable	••••
Halemani, et al. 2023	No serious	Serious	No serious	No serious	Not reported	•••0
Bekalu et al 2023	No serious	Serious	No serious	No serious	Unlikely	•••0

Supplementary Table 3: Certainty of evidence included in the umbrella review using the GRADE system.

SRMA: Systematic Review and Meta-analysis; SR: Systematic Review; GDM: Gestational diabetes Mellitus; SBP: Systolic blood pressure; DBP: Diastolic blood pressure; MA: Meta-analysis; RoB: Risk of bias; NR: Not reported; •••• high; ••• Moderate; •000 Low.

Supplementary Table 4: Graphical crosstabulation to display the overlapping and selection of studies included in Gestational diabetes theme. Blue highlighted reviews are selected after overlapping evaluation while green boxes indicate original articles in the respective reviews.

	0 -				0-					2					r					
	(Zheng, Feng et al. 2018)	(Pan, Pan et al. 2019)	(Han, Sun et al. 2019)	(Masulli, et al. 2020)	(Lagowska, et al. 2020)	(Okesene-Gafa, et al. 2020)	(Hasain, Che et al. 2021)	(Ramanathan, et al. 2021)	(Pan, Zheng et al. 2021)	Zhou, Ding et al. 2021)	(Davidson, et al. 2021)	(Cetinkaya, et al. 2022)	Mahdizade Ari, et al.	(Obuchowska, et al. 2022)	(Pakmehr, et al. 2022)	Chen et al. 2022)	(Chu, Yan et al. 2022)	(Kaminska, et al. 2022)	(Yefet, Bar et al. 2023)	(Mu, Guo et al. 2023)
Laitinen et	0	0	0	0	0		0	0	0	0	0	E		E	0	Ē		0	0	0
al. 2009																				
Allen, 2010 Luoto et al.																				
2010																				
Brantsæter																				
et al. 2011																				
Ilmonen et al 2011																				
Asemi 2012																				
Raakel																				
Luoto,																				
2012 Asemi et al																				
2013																				
Marloes																				
Nitert1 2013																				
Hoppu																				
2014																				
Lindsay et																				
al. 2014 Taghizadeh																				
etal 2014																				
afarnejad																				
KL 2015 Dolatkhah																				
2015																				
Lindsay																				
2015 Ahmadi et																				
al. 2016																				
Barthow																				
2016 Jafarnejad																				
2016																				
Jamilian et																				
al. 2016 Karamali																				
2016																				
Luisa F,																				
2016 Sofie																				
Ingdam																				
Halkjaer,																				
2016																				
Kristin 2017																				
Luisa F,																				
2017																				

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Shaun																
Sabico,																
2017																
Wickens et																
al. 2017																
Badehnoos																
h 2018																
Hajifaraji 2																
2018																
Karamali,																
2018																
Nabhani et																
al. 2018																
Nordqvist																
et. al. 2018		 														
Asgharian																
2019 Babadi																
Babadi 2019																
Callaway														 	 	
2019																
Ebrahim																
etr. al, 2019																
Jamilian														 		
2019																
Kijmanawat						 										
2019																
Lihui Si,																
2019																
Okesene- et																
al., 2019																
Oksene-																
Gafa 2019																
Pellonperä,																
2019																
Sahhaf																
2019																
Asgharian																
2020																ļ
Halkjaer et																
al 2020					L											
Godfrey et																
al 2021																
Reyes- et																
al. (2021)																
Shahriari et																
al 2021						 										
Amirani et al., 2022																
al., 2022 Baloch																
Baloch 2022																
2022									l							

Supplementary Table 5: Graphical crosstabulation to display the overlapping and selection of studies included in Group B Streptococcus theme.

	Jois, R. S. 2020	Menichini, D. 2022
Hanson et al 2014		
Ho et al 2016		
Ming-Ho, 2016		
Olsen et al 2018		
Azizet al 2018		
Sharpe et al., 2019		
Farr, 2020		

Supplementary Table 6: Graphical crosstabulation to display the overlapping and selection of studies included in the preeclampsia theme.

	Movaghar, R 2022
Kopp 2008	
Yuniati, 2013	
García-Ródenas, 2016	
Cabana 2017	
Hajifaraji 2 2018	

Supplementary Table 7: Graphical crosstabulation to display the overlapping and selection of studies included in the infant allergies theme.

infant allergies theme.					1	[
	(Colquitt, et al. 2022)	al.	6	ıl.	ລ	al.
	t, el	(Yin, He et al. 2019)	(Kuang 2020)	(Doege, et al. 2012)	(Voigt 2022)	(Amalia, et al. 2020)
	quit	, He	ng	ge,	gt 2	alia,
	Colc 022	Yin, 019	Kua	Оое 012	Voig	Am: 020
Kalliomäki et al 2001	Б Э	БА		Б Q	E	ъС
Rautava et al. 2002						
Kalliomäki et al. 2003						
Kukkonen et al. 2006						
Abrahamsson et al. 2007						
Kukkonen et al 2007						
Kallioma [°] kietal. 2007						
Huurre et al. 2008						
Bottcher 2008						
Kopp 2008						
Prescott 2008						
Wickens 2008						
Samanta et al 2008						
Hurreeetal. 2008						
Niers 2009						
Soh 2009						
Kuitunen 2009						
West 2009						
Kim 2009						
Boyle et al. 2010 Dotterud et al. 2010						
Kim 2010						
Wu Fuling, 2010						
Allen et al.2010						
Luoto et al. 2010						
Boyle 2011						
Ou 2012						
Rautava 2012						
Wickens 2012						
Jensen 2012						
Abrahamsson 2013						
Wickens 2013						
West 2013						
Benor et al. 2013						
Allen 2014						
Lindsay et al 2014						
Nomoto,et al.2014						
Bertelsen, et al. 2014						
Simpson et al. 2015						
Mastromarino et al. 2015						
Cabana 2017						
Wickens et al. 2017						
Peldan et al. 2017						
amm,et al.2017						
Wickens et al. 2018						
Davies,et al.2018						
Rautava et al. 2021						

Supplementary Table 8: Graphical crosstabulation to display the overlapping and selection of studies included in the lactation mastitis theme.

	(Barker, et al. 2020)	(Yu, et al. 2022)
Jime´nez et al. 2008		
Arroyo et al. 2010		
MaldonadoLobo'n et al. 2015		
Ferna´ndez et al. 2016		
Hurtado et al. 2017		
Jime'nez et al. 2021		

Supplementary Table 9: Graphical crosstabulation to display the overlapping and selection of studies included in the mental health theme.

	(Desai, et al. 2021)	(Trifkovič, et al. 2022)	(Halemani, et al. 2023)
Mi, 2015			
Mastromarino, 2015			
Mirghafourvand et al 2016			
Slykerman et al 2016			
Slykerman, 2017			
Korpela, 2018			
Okesene-Gafa et al. 2019			
Dawe et al. 2020			
Hulkkonen, 2021			
Browne, 2021			
Hulkkonen, 2022			
Yıldız Karaahme, 2022			

Neri 1993 Image: Constraint of the second seco	included in the pregnancy outcome theme.						
Neri 1993 Image: Constraint of the second seco		(Othman, et al 2007)	(Dugoua, et al. 2008)	(Grev, et al. 2017)	(Jarde, et al. 2018)	(Pérez et al. 2021)	Bekalu et al 2023
Rautava etal. 2002 Image: Constraint of the second se	Neri 1993						
Nishijima 2005 Image: Constraint of the second	Kalliomaki 2001						
Gueimonde etal. 2006 Image: Constraint of the second	Rautava etal. 2002						
Kukkonen etal. 2006 Image: Constraint of the second s	Nishijima 2005						
Abrahamsson 2007 Image: Constraint of the second seco	Gueimonde etal. 2006						
Kaplas etal. 2007 Image: Constraint of the second sec	Kukkonen etal. 2006						
Kukkonen etal. 2007 Image: Constraint of the second s	Abrahamsson 2007						
Kopp 2008 Image: Constraint of the second seco	Kaplas etal. 2007						
Bergmann, 2008 Image: Constraint of the second	Kukkonen etal. 2007						
Bababi et al 2008 Image: Constraint of the second sec	Kopp 2008						
Wickens et al 2008 Image: Constraint of the second sec	-						
Laitinen 2009 Image: Constraint of the second s	Bababi et al 2008						
Niers, 2009 Image: Constraint of the second se	Wickens et al 2008						
Kim, 2010 Image: Constraint of the second secon	Laitinen 2009						
Allen, 2010 Image: Constraint of the second sec	Niers, 2009						
Dotterund 2010 Image: Constraint of the second	Kim, 2010						
Luoto 2010 Image: Constraint of the second seco	Allen, 2010						
Asemi 2011 Image: Constraint of the second seco	Dotterund 2010						
Boyle 2011 Image: Constraint of the second seco	Luoto 2010						
Krauss-Silva 2011Image: Silva 2011Image: Silva 2012Ou 2012Image: Silva 2012Image: Silva 2012Hantoushzadeh, 2012Image: Silva 2012Image: Silva 2012Taghizadeh et al 2013Image: Silva 2013Image: Silva 2012Lindsay 2014Image: Silva 2014Image: Silva 2014Benor 2014Image: Silva 2015Image: Silva 2015Dolatkhah 2015Image: Silva 2015Image: Silva 2015Okesene-Gafa 2016Image: Silva 2015Image: Silva 2015Fernández 2016Image: Silva 2015Image: Silva 2015Jacobsson 2016Image: Silva 2016Image: Silva 2015Mantaring 2016Image: Silva 2016Image: Silva 2015Jafarnejad 2016Image: Silva 2016Image: Silva 2016	Asemi 2011						
Ou 2012Image: Constraint of the system of the s	Boyle 2011						
Rautava 2012Image: constraint of the systemImage: constraint of the systemHantoushzadeh, 2012Image: constraint of the systemImage: constraint of the systemTaghizadeh et al 2013Image: constraint of the systemImage: constraint of the systemLindsay 2014Image: constraint of the systemImage: constraint of the systemBenor 2014Image: constraint of the systemImage: constraint of the systemLindsay 2015Image: constraint of the systemImage: constraint of the systemDolatkhah 2015Image: constraint of the systemImage: constraint of the systemDolatkhah 2015Image: constraint of the systemImage: constraint of the systemMastromarino 2015Image: constraint of the systemImage: constraint of the systemOkesene-Gafa 2016Image: constraint of the systemImage: constraint of the system <td< td=""><td>Krauss-Silva 2011</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Krauss-Silva 2011						
Hantoushzadeh, 2012Image: Constraint of the second sec	Ou 2012						
Taghizadeh et al 2013Image: Constraint of the second s	Rautava 2012						
Lindsay 2014Image: Constraint of the second sec	Hantoushzadeh, 2012						
Benor 2014Image: constraint of the second secon							
Lindsay 2015Image: Constraint of the second sec							
Dolatkhah 2015Image: Constraint of the second s							
Mastromarino 2015Image: Constraint of the second secon							
Okesene-Gafa 2016Image: Constraint of the second secon							
Fernández 2016Image: Constraint of the second s							
Jacobsson 2016Image: Constraint of the second s	Okesene-Gafa 2016						
Mantaring 2016Image: Constraint of the second s	Fernández 2016						
Karamali, 2016Image: Constraint of the second s	Jacobsson 2016						
Jafarnejad 2016							
Up 2016	Jafarnejad 2016						
	Но 2016						
Ahmadi et al 2016	Ahmadi et al 2016						
Gille et al 2016	Gille et al 2016						

Supplementary Table 10: Graphical crosstabulation to display the overlapping and selection of studies included in the pregnancy outcome theme.

Jamilian et al 2016			
Baldassarre 2016			
Dewanto et al 2017			
Wickens et al. 2017			
Vähämiko et al 2017			
Karamali 2018			
Badehnoosh 2018			
Mantaring et al 2018			
McMillan et al 2018			
Nabhani et al. 2018			
Okense-Gafa et al 2018			
Olsen et al. 2018			
Kijmanawa 2019			
Callaway 2019			
Asgharian et al.2019			
Chen et al 2019			
Jamilian et al 2019			
Pellonperä et. 2019			
Sahhaf et al 2019			
Sharpe et al. 2019			
Ali Pourmirzaiee et al 2020			
Halkjær et al. 2020			
Yang et al. 2020			
Pastor et al., 2020			
Karaahmet 2022			

Supplementary Table 11: Graphical crosstabulation to display a study included in the safety theme with no overlap.

	(Dugoua, et al. 2009)
Kalliomäki et al. 2001	
Rautava et al. 2002	
Nishijima et al. 2005	
Gueimonde et al.2006	
Kukkonen et al. 2006	
Abrahams son et al. 2007	
Kaplas et al. 2007	
Kukkonen et al. 2007	

	(Moore, et al. 2020)	(Martin et al. 2022)	bekalu et al 2023
Lahtinen et al 2009			
Abrahamsson et al, 2009			
Grzeskowiak L et al 2012			
Yuniati, 2013			
Enomoto T 2014			
Dotterud et al 2015			
Rutten et al 2015			
Mastromarino, 2015			
Baglatzi, 2016			
Cooper, 2016			
García-Ródenas, 2016			
Bazanella, 2017			
Chien Chua, 2017			
Frese, 2017			
Korpela, 2018			
Hurkala, 2020			
Pastor-V et al, 2020			
Estorninos, 2021			
Phavichitr, 2021			

Supplementary Table 12: Graphical crosstabulation to display the overlapping and selection of studies included in the bacterial transfer to infant theme.

	(Hasain, Che Roos et al. 2021)																			
Cetinkaya et al. 2022	50.00%	Cetinkay a et al. 2022)																		
(Mahdizade Ari, Teymouri (Masulli,	35.70%	28.60%	Mahdizad e et al. 2022)	et -												0-5%	slight over	rlap		
Vitacolonn a et al. 2020)	0.00%	0.00%	10.25%	(Masulli, Vitacolonna et al. 2020)												6-10%	Moderate	overlap		
(Obuchows ka, Gorczyca et al. 2022)	25.00%	38.50%	17.60%	25.00%	(Obuchowsk a, Gorezyca et al. 2022)												High over	lap		
(Yefet, Bar et al. 2023)	60.00%	57.00%	53.50%	5.00%	33.00%	(Yefet, Bar et al. 2023)											Very high			
(Zheng, Feng et al. 2018) (Mu, Guo	25.00%	11.00%	18.75%	0.00%	0.00%	20.00%	(Zheng, Feng et al. 2018)	æ												
et al. 2023) (Pan, Pan	75.00%	72.72%	39.29%	0.00%	31.25%	78.57%	23.53%	(Mu, Guo et al. 2023)	Pan											
et al. 2019) (Ramanatha n,	33.33%	27.27%	17.24%	0.00%	6.67%	25.00%	23.10%	30.76%	(Pan, Pan et al. 2019)	et ju										
Jagadeesh et al. 2021)	35.71%	21.43%	23.33%	0.00%	5.56%	27.78%	46.15%	33.33%	50.00%	(Ramanathan, Jagadeesh et al. 2021)										
(Lagowska, Malinowsk a et al. 2020)	47.06%	43.75%	48.28%	11.11%	19.10%	52.63%	38.89%	62.50%	23.53%	41.18%	(Lagowska, Malinowska et al. 2020)									
(Pakmehr, Ejtahed et al. 2022)	0.00%	0.00%	15.15%	25.00%	11.11%	4.35%	11.11%	0.00%	6.67%	11.76%	4.17%	(Pakmehr, Ejtahed et al. 2022)								
(Zhang, Niu et al. 2023)	0.00%	0.00%	9.68%	22.22%	14.29%	5.26%	0.00%	0.00%	9.10%	7.14%	0.00%	33.33%	(Zhang, Niu et al. 2023)							
(Pan, Zheng et al. 2021)	36.36%	33.33%	50.00%	19.10%	25.00%	84.62%	36.36%	47.62%	18.18%	31.82%	66.67%	20.00%	13.04%	(Pan, Zheng et al. 2021)						
(Okesene- Gafa, Moore et al. 2020)	46.15%	41.67%	32.14%	0.00%	18.75%	43.75%	18.75%	42.86%	36.36%	35.71%	33.33%	5.56%	7.14%	26.10%	(Okesene- Gafa, Moore et al. 2020)					
(Zhou, Ding et al. 2021)	66.67%	80.00%	37.90%	0.00%	29.41%	62.50%	22.22%	64.28%	20.00%	31.25%	50.00%	0.00%	0.00%	39.13%	61.54%	(Zhou, Ding et al. 2021)				
(Davidson, Barrett et al. 2021)	0.00%	0.00%	12.90%	50.00%	21.43%	5.00%	21.43%	0.00%	8.30%	13.33%	10.00%	23.53%	30.00%	28.57%	6.67%	5.56%	(Davidson, Barrett et al. 2021)			
(Chu, Yan et al. 2022)	0.00%	0.00%	13.79%	50.00%	25.00%	5.56%	7.14%	0.00%	0.00%	0.00%	11.11%	36.36%	22.22%	19.10%	0.00%	0.00%	9.10%	(Chu, Yan et al. 2022)		
(Han, Sun et al. 2019)	27.78%	16.67%	20.59%	5.88%	4.55%	22.73%	64.29%	26.32%	26.67%	46.67%	40.00%	9.53%	0.00%	32.00%	22.22%	25.00%	17.65%	5.88%	(Han, Sun et al. 2019)	
(Kaminska, Stenclik et al. 2022)	6.25%	0.00%	12.90%	20.00%	13.33%	10.53%	17.65%	5.88%	8.33%	14.29%	4.76%	30.77%	30.00%	22.73%	14.29%	5.56%	40.00%	20.00%	17.65%	(Kaminska, Stenclik et al. 2022)

Supplementary Figure 1: Citation matrix for overlapping management in GDM.