Supplementary material 2

Retrieval strategy of database

Pubmed:

((((((Depressive Symptoms) OR (Depressive Symptom)) OR (Symptom, Depressive)) OR (Emotional Depression)) OR (Depression, Emotional)) OR (depression)) AND ((((((((((((((((((((((dental caries) OR (Caries, Dental)) OR (Dental Cavity)) OR (Dental Decay)) OR (Dental Cavities)) OR (Cavities, Dental)) OR (Cavity, Dental)) OR (Carious Lesions)) OR (Carious Lesion)) OR (Lesion, Carious)) OR (Lesions, Carious)) OR (Decay, Dental)) OR (Carious Dentin)) OR (Carious Dentins)) OR (Dentin, Carious)) OR (Dentins, Carious)) OR (Dental White Spot)) OR (Spot, Dental White)) OR (Spots, Dental White)) OR (White Spot, Dental)) OR (White Spots, Dental)) OR (Dental White Spots)) 372

Web of science

TS=((Depressive Symptoms OR Depressive Symptom OR Symptom, Depressive OR Emotional Depression OR Depression, Emotional OR depression)) AND TS=((dental caries OR Caries, Dental OR Dental Cavity OR Dental Decay OR Dental Cavities OR Cavities, Dental OR Cavity, Dental OR Carious Lesions OR Carious Lesion OR Lesion, Carious OR Lesions, Carious OR Decay, Dental OR Carious Dentin OR Carious Dentins OR Dentin, Carious OR Dentins, Carious OR Dental White Spot OR Spot, Dental White OR Spots, Dental White OR White Spot, Dental OR White Spots, Dental OR Dental White Spots)) 191

Embase

Session results

.......................................................

No. Query results Results Date

#31. #7 AND #30 675 10 Jun 2024

#30. #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR 106,590 10 Jun 2024

#15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR

#22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR

#29

#29. dental AND white AND spots 264 10 Jun 2024

#28. white AND spots, AND dental 264 10 Jun 2024

#27. white AND spot, AND dental 1149 10 Jun 2024

#26. spots, AND dental AND white 264 10 Jun 2024

#25. spot, AND dental AND white 1149 10 Jun 2024

#24. dental AND white AND spot 1149 10 Jun 2024

#23. dentins, AND carious 10 10 Jun 2024

#22. dentin, AND carious 2532 10 Jun 2024

#21. carious AND dentins 10 10 Jun 2024

#20. carious AND dentin 2532 10 Jun 2024

#19. decay, AND dental 4916 10 Jun 2024

#18. lesions, AND carious 4585 10 Jun 2024

#17. lesion, AND carious 1878 10 Jun 2024

#16. carious AND lesion 1878 10 Jun 2024

#15. carious AND lesions 4585 10 Jun 2024

#14. cavity, AND dental 29,033 10 Jun 2024

#13. cavities, AND dental 7043 10 Jun 2024

#12. dental AND cavities 7043 10 Jun 2024

#11. dental AND decay 4916 10 Jun 2024

#10. dental AND cavity 29,033 10 Jun 2024

#9. ‘dental caries’ 70,311 10 Jun 2024

#8. dental AND caries 77,190 10 Jun 2024

#7. #1 OR #2 OR #3 OR #4 OR #5 OR #6 979,422 10 Jun 2024

#6. depression, AND emotional 71,510 10 Jun 2024

#5. emotional AND depression 71,510 10 Jun 2024

#4. depressive AND symptom 29,562 10 Jun 2024

#3. symptom, AND depressive 29,562 10 Jun 2024

#2. depressive AND symptoms 120,926 10 Jun 2024

#1. ‘depression’/exp OR depression 971,397 10 Jun 2024

.......................................................

Cochrane library

#1 Depressive Symptoms OR Depressive Symptom OR Symptom, Depressive OR Emotional Depression OR Depression, Emotional OR

#2 dental caries OR Caries, Dental OR Dental Cavity OR Dental Decay OR Dental Cavities OR Cavities, Dental OR Cavity, Dental OR Carious Lesions OR Carious Lesion OR Lesion, Carious OR Lesions, Carious OR Decay, Dental OR Carious Dentin OR Carious Dentins OR Dentin, Carious OR Dentins, Carious OR Dental White Spot OR Spot, Dental White OR Spots, Dental White OR White Spot, Dental OR White Spots, Dental OR Dental White Spots

#3 #1 and #2 85

Supplementary Table 1. Characteristics of excluded studies.

|  |  |  |
| --- | --- | --- |
| Study | Title | Reasons for exclusion |
| Costa 2017 [1] | Maternal depression and anxiety associated with dental fear in children: a cohort of adolescent mothers in Southern Brazil | The article is about the relationship between maternal depression and children’s dental fear |
| Costa 2017 [2] | Do maternal depression and anxiety influence children’s oral health‐related quality of life? | This article is about the impact of depression and anxiety symptoms on young mothers’ perceptions of their children’s oral health-related quality of life (COHRQoL) |
| Adeniyi 2023 [3] | Associations between maternal mental health, child dental anxiety, and oral health of 6- to 12-year-olds in Nigeria | The article focuses on the relationship between maternal mental health and oral hygiene in children aged 6 to 12 years |
| Tang 2005 [4] | Examining the association between parenting stress and the development of early childhood caries | The article focuses on the relationship between parental stress and early childhood caries (ECC) and does not explicitly address maternal depression |
| Alessandro 2014 [5] | Correlation between oral health in disabled children and depressive symptoms in their mothers | The article is about the correlation between mothers’ depression risk and their sons’/daughters’ oral health, but the relevant data could not be extracted. |
| Tsuchiya 2021 [6] | Influence of maternal postpartum depression on children’s toothbrushing frequency | This study was about the relationship between postpartum depression and toothbrushing frequency in 2-year-old children |
| Lucchi 2023 [7] | Maternal mental health and children oral health: a literature review | This is a review of maternal mental health and children’s oral health |
| Adeniyi 2023 [8] | Associations between oral habits, dental anxiety, dental service utilization, and maternal mental health status among 6‑ to 12‑year‑old children in Ile–Ife, Nigeria | This article examines the relationship between maternal mental health and oral habits, dental anxiety, and dental service utilization among children aged 6–12 years in Nigeria. |
| Gomes 2019 [9] | Are maternal mental disorders associated with children’s oral health? A systematic review | This is a review of maternal mental health and children’s oral health |
| Knoblauch 2019 [10] | The association between socioeconomic status, psychopathological symptom burden in mothers, and early childhood caries of their children | Maternal mental disorders and socioeconomic status as risk factors for early childhood dental caries (ECC) |
| Folayan 2020 [11] | Psychosocial, education, economic factors, decision-making ability, and caries status of mothers of children younger than 6 years in suburban Nigeria | Article on the association between maternal psychosocial characteristics and dental caries prevalence. No relevant data could be extracted. |
| Barbosa 2016 [12] | Factors associated with oral health-related quality of life in children and preadolescents: a cross-sectional study | The relationship between children’s oral health and psychological factors such as anxiety and depression |
| Al-Jewair 2010 [13] | The prevalence and risks of early childhood caries (ECC) in Toronto, Canada | The article focused on the prevalence and risk factors of early childhood caries. No relevant data were available. |
| Goettems 2017 [14] | Influence of maternal psychological traits on sleep bruxism in children | The article is about the relationship between maternal depression and children’s bruxism |
| Almeida 2012 [15] | Family context and incidence of dental caries in preschool children living in areas covered by the Family Health Strategy in Salvador, Bahia State, Brazil | The article mainly focused on the relationship between common mental disorders in mothers and the incidence of early dental caries, but the article failed to clearly state that the mental disorder was depression, so it was excluded. |
| Anonymous 1999 [16] | Chronicity of maternal depressive symptoms, maternal sensitivity, and child functioning at 36 months. NICHD Early Child Care Research Network | The article focused primarily on the relationship between maternal depression and child functioning and did not touch upon the issue of early dental caries. |
| Colleen 2013 [17] | Dental hospital admissions in the children of mothers with an alcohol-related diagnosis: a population-based, data-linkage study | The article focuses on the relationship between maternal alcohol use disorder and children’s oral health problems |
| Kavanaugh 2006 [18] | Maternal depressive symptoms are adversely associated with prevention practices and parenting behaviors for preschool children | The article focuses on the relationship between maternal depression and children’s dental care and toothbrushing frequency, and does not involve the risk of early childhood caries. |
| Kahn 2004 [19] | Combined effect of mothers’ and fathers’ mental health symptoms on children’s behavioral and emotional well-being | The article mainly focuses on the relationship between parents’ mental health and children’s behavior, and does not involve early childhood dental caries |
| Soares 2016 [20] | Maternal risk behavior and caries incidence in children with sickle cell disease | The article mainly focuses on the relationship between maternal risk behaviors and child dental caries, but does not explicitly state that maternal depression |
| Goettems 2012 [21] | Influence of maternal dental anxiety on the child’s dental caries experience | The article mainly focuses on the relationship between maternal dental anxiety and early childhood caries but does not explicitly mention maternal depression. |
| LaValle 2000 [22] | The effect of parental stress on the oral health of children | The article mainly focuses on the relationship between maternal anxiety behavior and children’s oral health but does not explicitly mention maternal depression. |
| Goettems 2017 [23] | Influence of maternal characteristics and caregiving behaviours on children’s caries experience: an intergenerational approach | This article focuses on the impact of maternal dental anxiety and dental care patterns on children’s dental caries, not maternal depression. |

Supplementary Table 2. Quality assessment of the individual studies according to the Newcastle–Ottawa Quality Assessment Score.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study | Selection | | | | Comparability | Exposure | | | Score |
| 1 | 2 | 3 | 4 | 1 | 1 | 2 | 3 |
| Pinto 2017 | \* | \* | \* | \* | \*\* | \* | \* | \* | 8 (High quality) |
| Sun 2020 | \* | \* | \* |  | \* | \* | \* |  | 6 (Moderate quality) |
| Cumerlato 2023 | \* | \* | \* | \* | \* | \* | \* | \* | 8 (High quality) |
| Alade 2021 | \* | \* | \* | \* | \* | \* | \* | \* | 8 (High quality) |
| Seow 2009 |  |  |  | \* | \* | \* | \* |  | 4 (Low quality) |
| Finlayson 2007 | \* | \* | \* | \* | \*\* | \* | \* |  | 8 (High quality) |
| Auger 2020 | \* | \* | \* | \* | \*\* | \* | \* | \* | 9 (High quality) |

Note: Selection 1: Is the case definition adequate? Selection 2: Representativeness of the cases; Selection 3: Selection of controls; Selection 4: Definition of controls; Comparability: Comparability of cases and controls based on the design or analysis; Exposure 1: Ascertainment of exposure; Exposure 2: Same method of ascertainment for cases and controls; Exposure 3: Non-response rate. \*: each star represents the highest score the research received under this item; \*\*: the maximum score for an item in this category is 2 points.

References

[1] Costa VPP, Correa MB, Goettems ML, Pinheiro RT, Demarco FF. Maternal depression and anxiety associated with dental fear in children: a cohort of adolescent mothers in Southern Brazil. Brazilian Oral Research. 2017; 31: e85.

[2] Costa FDS, Azevedo MS, Ardenghi TM, Pinheiro RT, Demarco FF, Goettems ML. Do maternal depression and anxiety influence children’s oral health-related quality of life? Community Dentistry and Oral Epidemiology. 2017; 45: 398–406.

[3] Adeniyi AA, Folayan MO, Chukwumah NM, Oziegbe EO, El Tantawi M. Associations between maternal mental health, child dental anxiety, and oral health of 6- to 12-year-olds in Nigeria. Brazilian Oral Research. 2023; 37: e091.

[4] Tang C, Quinonez RB, Hallett K, Lee JY, Whitt JK. Examining the association between parenting stress and the development of early childhood caries. Community Dentistry and Oral Epidemiology. 2005; 33: 454–460.

[5] D'Alessandro G, Cremonesi I, Alkhamis N, Piana G. Correlation between oral health in disabled children and depressive symptoms in their mothers. European Journal of Paediatric Dentistry. 2014; 15: 303–308.

[6] Tsuchiya S, Tsuchiya M, Momma H, Nagatomi R, Arima T, Yaegashi N, *et al*. Influence of maternal postpartum depression on children’s toothbrushing frequency. Community Dentistry and Oral Epidemiology. 2022; 50: 300–310.

[7] Ludovichetti FS, Zuccon A, Zambon G, Signoriello AG, Zerman N, Stellini E, *et al*. Maternal mental health and children oral health: a literature review. European Journal of Paediatric Dentistry. 2023; 24: 99–103.

[8] Adeniyi AA, Folayan MO, Arowolo O, Oziegbe EO, Chukwumah NM, El-Tantawi M. Associations between oral habits, dental anxiety, dental service utilization, and maternal mental health status among 6- to 12-year-old children in Ile–Ife, Nigeria. European Archives of Paediatric Dentistry. 2023; 24: 177–185.

[9] Gomes MAB, Cademartori MG, Goettems ML, Azevedo MS. Are maternal mental disorders associated with children’s oral health? A systematic review. International Journal of Paediatric Dentistry. 2020; 30: 252–264.

[10] Knoblauch U, Ritschel G, Weidner K, Mogwitz S, Hannig C, Viergutz G, *et al*. The association between socioeconomic status, psychopathological symptom burden in mothers, and early childhood caries of their children. PLOS ONE. 2019; 14: e0224509.

[11] Folayan MO, El Tantawi M, Oginni A, Adeniyi A, Alade M, Finlayson TL. Psychosocial, education, economic factors, decision-making ability, and caries status of mothers of children younger than 6 years in suburban Nigeria. BMC Oral Health. 2020; 20: 131.

[12] de Souza Barbosa T, Gavião MB, Castelo PM, Leme MS. Factors associated with oral health-related quality of life in children and preadolescents: a cross-sectional study. Oral Health and Preventive Dentistry. 2016; 14: 137–148.

[13] Al-Jewair TS, Leake JL. The prevalence and risks of early childhood caries (ECC) in Toronto, Canada. The Journal of Contemporary Dental Practice. 2010; 11: 001–008.

[14] Goettems ML, Poletto-Neto V, Shqair AQ, Pinheiro RT, Demarco FF. Influence of maternal psychological traits on sleep bruxism in children. International Journal of Paediatric Dentistry. 2017; 27: 469–475.

[15] Almeida TF, Vianna MI, Cabral MB, Cangussu MC, Floriano FR. Family context and incidence of dental caries in preschool children living in areas covered by the Family Health Strategy in Salvador, Bahia State, Brazil. Cadernos de Saúde Pública. 2012; 28: 1183–1195.

[16] Chronicity of maternal depressive symptoms, maternal sensitivity, and child functioning at 36 months. Developmental Psychology. 1999; 35: 1297–1310.

[17] O'Leary CM, Slack-Smith LM. Dental hospital admissions in the children of mothers with an alcohol-related diagnosis: a population-based, data-linkage study. The Journal of Pediatrics. 2013; 163: 515–520.e1.

[18] Kavanaugh M, Halterman JS, Montes G, Epstein M, Hightower AD, Weitzman M. Maternal depressive symptoms are adversely associated with prevention practices and parenting behaviors for preschool children. Ambulatory Pediatrics. 2006; 6: 32–37.

[19] Kahn RS, Brandt D, Whitaker RC. Combined effect of mothers’ and fathers’ mental health symptoms on children’s behavioral and emotional well-being. Archives of Pediatrics & Adolescent Medicine. 2004; 158: 721–729.

[20] Soares FF, Cangussu MC, Vianna MI, Rossi TR, Carvalho AS, Brito MG. Maternal risk behavior and caries incidence in children with sickle cell disease. Brazilian Oral Research. 2016: 30: S1806-83242016000100202.

[21] Goettems ML, Ardenghi TM, Romano AR, Demarco FF, Torriani DD. Influence of maternal dental anxiety on the child’s dental caries experience. Caries Research. 2012; 46: 3–8.

[22] Gazzaz AZ, Carpiano RM, Aleksejuniene J. Parenting stress as a mediator in the oral health of children and adolescents: a stress process model. Community Dentistry and Oral Epidemiology. 2020; 48: 288–295.

[23] Goettems ML, Nascimento GG, Peres MA, Santos I, Matijasevich A, Barros AJD, *et al*. Influence of maternal characteristics and caregiving behaviours on children’s caries experience: an intergenerational approach. Community Dentistry and Oral Epidemiology. 2018; 46: 435–441.