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The Impact of Women's Perinatal Mental Health Status on the Social Behavior of Children: A Systematic Review

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Abstract

Perinatal mental health disorders are common among women during pregnancy and up to a year after delivery, primarily due to significant hormonal changes. These conditions can lead to emotional and behavioral instability that may adversely affect a child's social development. Children whose social development is impaired due to compromised maternal perinatal mental health are more likely to experience difficulties in concentrating on learning, adapting socially, and forming relationships with peers. This study aims to explore in depth how perinatal mental health status influences the development of children's social behavior. A systematic review was conducted using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) and SWiM (Synthesis Without Meta-analysis) approaches. The literature search covered three major databases—PubMed, ScienceDirect, and Wiley—and two search engines—Google Scholar and Research Rabbit—for publications from 2015 to 2024. Keywords related to the impact of perinatal mental health on children's social behavior were used. Studies meeting the inclusion criteria were assessed for quality using the Joanna Briggs Institute (JBI) guidelines. Children of mothers who experienced depression during pregnancy and the postpartum period had a significantly higher risk of problems with emotional regulation (4.2-fold), hyperactivity (2.17-fold), attention disorders (1.64-fold), and anxiety disorders (0.79-fold) compared to children of mothers with good perinatal mental health. Poor maternal mental health during the perinatal period is associated with an increased risk of social behavior problems in children aged 2–5 years. Therefore, close attention to maternal mental health during pregnancy and postpartum is crucial to mitigating negative impacts on child development and emotional well-being. These findings underscore the importance of perinatal mental health interventions in reducing early childhood social disorders. Further research is needed to better understand the relationship between maternal mental health and children's social behavior and to develop effective clinical interventions.

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Introduction

Perinatal mental health is a condition of individuals who have awareness of their abilities, can deal with life pressures, can live productively and are able to contribute to the community in the perinatal period. This condition is a vulnerable condition and needs to be maintained in every cycle of a woman's life because it causes various mental problems or disorders (WHO, 2020). Perinatal mental health disorders often occur in women during pregnancy and one year postpartum. Types of perinatal mental health problems or disorders such as perinatal depression, post- traumatic stress disorder, postpartum psychosis, postpartum grief and postpartum depression (Hu et al., 2021).

According to the World Health Organization about 10% of pregnant women and 15% of women who have given birth experience mental problems, especially depression in developed countries. The incidence in developing countries is even higher, at 15.6% during pregnancy and 19.8% after childbirth. The cause of mental health problems or disorders in the perinatal period is not yet known with certainty, but drastic hormonal changes in the female body during pregnancy and childbirth can cause more sensitive feelings and unstable emotional conditions (WHO, 2020). Physical changes such as weight gain, malnutrition, neurological changes, peripartum and postpartum stress, trauma, experiences of discrimination, poverty, limited access to quality health services, lack of social support, and health policies that are not friendly to diversity are also causes of perinatal mental health problems or disorders (Blount et al., 2021).

Mothers who have mental health problems or disorders during pregnancy and postpartum may endanger themselves and their children. In addition, unfavorable stigma in the community and negative perceptions will affect the mother's behavior towards her child (Bassi et al., 2017). Research results (Syahputra et al., 2022) Children raised by mothers with depression have a 19.5 times higher risk of experiencing suboptimal parenting. Meanwhile, anxiety increases the risk by 56 times, and stress increases the risk by 19.5 times for the implementation of poor parenting. This provides evidence that a mother's mental health during pregnancy and the first year postpartum is very important for her child's cognitive, social, and emotional development (de Waal et al., 2023; Goodman, 2019). Maternal mental health problems or disorders during pregnancy and after childbirth have a negative impact on mothers and children, these problems can cause premature labor, low birth weight and early neonatal complications (Puspitasari, 2019), children will become more often fussy and cry because they do not get attention from the mother, children will experience mental health problems in the future and experience delays in social development (Hardiningrum & Firdaus, 2020).

Early childhood mental health plays a crucial role in their emotional and cognitive development. Children with good mental health are better able to manage emotions, build social relationships, and complete academic tasks. Conversely, maternal perinatal mental health disorders can cause stress in children, hinder emotional regulation, and increase the risk of behavioral problems such as aggression or social anxiety (Hoffman et al., 2017). Social development in children is characterized by children being able to socialize with peers. Social development itself is related to the process of achieving maturity in social relationships and learning in order to adapt to the norms that apply to traditional and moral groups (Syahrul & Nurhafizah, 2021) (Anggraini et al., 2020). Factors that influence children's social development are family, especially mothers (Hijriati, 2019) (Indanah & Yulisetyaningrum, 2019). Mothers who experience unresolved emotional, behavioral and mental health problems will have a negative impact on child development, especially on personality, emotional disorders, behavior and social development. Children who experience disturbances in social development will find it difficult to focus when learning, adapting to peers and difficult to be able to establish good relationships with peers. In addition, if the mother does not provide adequate comfort to the child, such as being rude, often scolding, paying less attention, and not providing guidance, examples, teaching, or habituation in implementing religious norms and manners, this can have a negative impact on the child's social-emotional development which has the potential to cause bad behavior (Dewi et al., 2020).

Research results (Ummah & Fitri, 2020) Family has a crucial role in the socio-emotional development and personal growth of early childhood. This influence is evident through the difference in developmental achievement recorded at 0.06%. Children's socio-emotional development is categorized as being in a stage that is not yet fully optimal. Therefore, early screening is needed to identify potential deviations in children's socio-emotional development (Silver et al., 2023; Windiastri & Nurhaeni, 2020). Previous systematic reviews addressed various aspects of perinatal mental health, including the impact on children's emotional development (Rees et al., 2019), weight growth (Cook et al., 2018) and behavioral development and biological impact (Shahhosseini et al., 2015).

However, there has been no systematic observation that specifically highlights the impact of perinatal mental health on children's social behavior. Therefore, this study aims to fill this gap by assessing the relationship between maternal perinatal mental health and children's social behavior in various dimensions. This is important because social development is a major component of children's well-being and success in various aspects of life.

Methods

Study Design

This research used a Systematic Review study design and followed the PRISMA Systematic Review methodology guidelines (Page et al., 2021). The question used in this study is "what is the impact of perinatal mental health status on children's social development?". In this study, the authors used the PICO framework. The PICO framework format is attached in table 1.

Table 1. Framework PICO

PICO Element	Description
Population	Children
Intervention	Women's perinatal mental health status
Comparison	Women without perinatal mental health issues
Outcome	Social behaviour of children

Inclusion and Exclusion Criteria

Articles were selected using inclusion criteria and exclusion criteria. The inclusion and exclusion criteria format is attached in table 2.

Table 2. Kriteria Inklusi dan Eksklusi

Kriteria Inklusi	1. Articles published in 10 years (2015-2024) 2. English and Indonesian articles 3. An articles discussing perinatal mental health that affects children's behavior
Kriteria Eksklusi	1. *Review article*

Review articles were excluded to avoid duplication and risk of bias.

Article Search

The article search used 3 databases (Pubmed, ScienceDirect and Wiley) and 2 search engines (Google Scholar and Research Rabbit) from 2015 to 2024. Google scholar search was conducted on the first 100 articles based on relevance. The keywords used are ((Child) AND (woman) AND (perinatal) AND (mental health) AND (social behavior)).

Article Screening

All articles used were managed and screened using Covidence (https://www.covidence.org/). Articles were reviewed by two reviewers (SL, AA) with a multi-stage screening process, selecting relevant titles and abstracts, as well as ensuring full-text availability and conformance to predefined inclusion criteria. In case of disagreement between the two reviewers, a third reviewer (MW) was involved. The third reviewer is tasked with reconciling the disagreement, ensuring both reviewers have conducted the screening process correctly.

Quality Assessment

Quality assessment refers to the extent to which a study is designed, conducted, analyzed, interpreted and reported to avoid systematic errors (Furuya-Kanamori et al., 2021). The quality assessment of the article used the Joanna Briggs Institute (JBI) Cohort Studies design (https://jbi.global/critical-appraisal-tools) by providing answers of 'No', 'Not Applicable, 'Unclear', or 'Yes' (Joana Brings Institute, 2020). Scoring was conducted by 2 reviewers (SL, AA) and a third party (MW) was included in case of disagreement. Scoring and cut-offs were agreed by the reviewers prior to scoring, as recommended by the JBI guidelines, and studies (Franco et al., 2020);(Melo et al., 2018).

Bias Risk Assessment

Risk of bias assessment refers to what weaknesses in the design, implementation and analysis affect the results of the study (Furuya-Kanamori et al., 2021). The risk of bias assessment uses the Joanna Briggs Institute (JBI) Cohort Studies design assessment tool by providing low, medium and high risk of bias answers (Joana Brings Institute, 2020).

Data Extraction

The selected articles were extracted by all reviewers containing several pieces of information, namely article ID, author, year of publication, country, purpose, research methods, sample. All reviewers identified all included articles based on the above information and summarized them in a table. The extraction data is attached in table 3.

Data Analysis

The authors applied the Synthesis Without Meta-analysis (SWiM) guidelines in analyzing the data (Campbell et al., 2020). Data analysis uses descriptive qualitative methods by compiling or classifying, analyzing and interpreting data relating to significant influences and impacts on children's social development. The literature selection and screening process followed the PRISMA guidelines, but because this study focused on the synthesis of findings without meta-analysis, the SWiM approach was chosen to better suit the variety of study designs, measurement methods, and populations studied (Page et al., 2021).

Result

Study Selection

Articles were selected based on criteria and relevance of the literature to the research topic, a total of (N=533) articles were obtained from search results in PubMed (N=65), Science Direct (N=228), Wiley (N=217), Google Scholar (N=14) and Research Rabbit (N=8). There were duplicates (N=2), resulting in (N=530) articles. Title and abstract screening (N=513) were excluded because they did not match the research topic, resulting in (N=17). Screening through abstract reading and full text (N=10) were included as they met the criteria. The PRISMA Flowchart diagram is attached in figure 1.

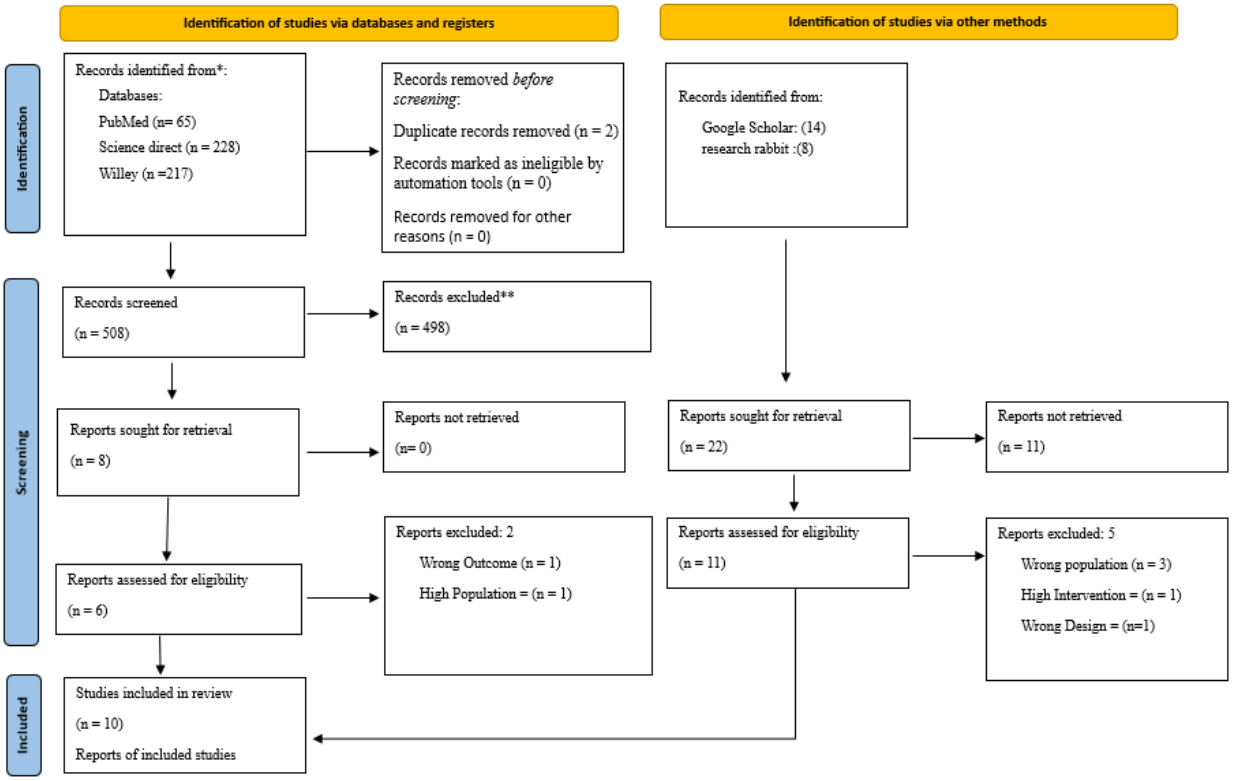

Figure 1. Prisma Flowchart

Study Characteristics

Table 3. Article Characteristics

Author/ Year	Study Design	State	Sample Size	Results
Junge et al/ 2017	Study cohort	Norwegia	1.235 participants	Depressi maternal during pregnancy and on Postpartum is strongly associated with social emotional problems in 2 year olds
Kingston et al/ 2018	Study cohort	Kanada	1.983 participants	Children of mothers with high depressive symptoms and persistent tend to experience more behavioral problems by age three
Lipschutz et al/ 2024	Study cohort	Amerika Serikat	527 participants	Symptoms stress post trauma at mom influence the ability of the child in directing attention and organizing responses to them.
Ibanez et al/ 2015	Study cohort	Perancis	1.380 participants	This study provides significant the relationship between maternal anxiety on the eve of birth and decline in cognitive development children at two and three years old
Pickles et al/ 2017	Study cohort	Inggris	813 participants	This study provides a relationship of anxiety mothers from pregnancy to birth with scores in the form of emotional, somatic reactivity, withdrawal.
Van Der Waerden et al/ 2015	Study cohort	Perancis	1183 participants	Children with mothers who have symptoms of persistent depression-either moderate or high-have a high level of emotional distress and behavior is highest at 5 years of age.
Giallo et al/ 2015	Study cohort	Australia	1085 participants	Symptoms of depression at subclinical level related to poor emotional-behavioral outcomes in children participants.
Park et al/ 2018	Study cohort	Kanada	191 participants	Women who continued to experience depressive symptoms after pregnancy had an impact on their child's behavior. These children showed higher internalizing and externalizing behaviors at 3 years of age, as well as poorer executive functioning at 6 years of age. Women who continued to experience symptoms of depression after pregnancy had an impact on their child's after pregnancy had an impact on their child's showed higher internalizing and externalizing behaviors at 3 years of age as well as worse executive functioning at age 6.
Garthus-Niegel et al/ 2017	Study cohort	Jerman	1.472 participants	Postpartum PTSD symptoms affect social-emotional development of children at age 2 years, with an impact comparable to postpartum depression
Dachew et al/ 2021	Study cohort	Australia	About 8000 (at 7 age) up to 4000 (at 15 years old) participants	Relationship between mother and symptoms of depression during the perinatal period and children who suffered from ODD during childhood and teenager.

The ten articles used in this systematic review were from Norway, Canada, the United Kingdom, the United States, France, Germany and Australia. Of these articles, three were published in 2015 (Ibanez et al., 2015);(van Der Waerden et al., 2015) ;(Giallo et al., 2015), three in 2017 (Garthus-Niegel et al., 2017); (Junge et al., 2017); (Pickles et al., 2017), two articles in 2018

(Kingston et al., 2018); (Park et al., 2018), one article in 2021 (Dachew et al., 2021) and one article in 2024 (Lipschutz et al., 2024).

Article Quality and Risk of Research Bias

Table 4. Articles Quality and Risk of Bias

No	Author	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Skor	Interpretation
A1	Junge et al., 2017	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	33/33	Very good
A2	Kingston et al., 2018	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	33/33	Very good
A3	Lipschutz et al., 2024	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	33/33	Very good
A4	Ibanez et al., 2015	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	27/33	Very good
A5	Pickles et al., 2017	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	30/33	Very good
A6	Van Der Waerden et al., 2015	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	33/33	Very good
A7	Giallo et al., 2015	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	33/33	Very good
A8	Park et al., 2018	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	33/33	Very good
A9	Garthus-Niegel et al., 2017	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	30/33	Very good
A10	Dachew et al., 2021	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	27/33	Very good

Note (Al-Jundi & Sakka, 2017):
*Q1-Q8 indicates questions 1 to 10 based on JBI's quality assessment.
Yes = 3, *Unclear* = 2, *Not applicable* = 1, *No* = 0
*Excellent (23-33), Good (12-22), Poor (0-11)

The ten articles used in this systematic review all used a cohort study design and were published between 2015 and 2024. The risk of bias in these articles was assessed using the Joanna Briggs Institute (JBI) according to the following with a cohort study research design. The assessment was conducted by 2 reviewers (SL, AA) and a third party (MW) was included in case of disagreement. The ten articles used in this Systematic Review were all indexed in Scopus Q1 indicating excellent quality. The risk of bias assessment on these articles showed that all had a low risk of bias with a range of scores between 27-33. Of these articles, five articles scored 33 (Junge et al., 2017); (Kingston et al., 2018); (Lipschutz et al., 2024); (van Der Waerden et al., 2015); (Park et al., 2018), three articles scored 30 (Pickles et al., 2017); (Giallo et al., 2015); (Garthus-Niegel et al., 2017); and two articles scored 27 (Ibanez et al., 2015);(Dachew et al., 2021). This

shows that most articles meet almost all critical appraisal criteria, providing a solid basis for the conclusions in this study.

Outcome Synthesis

Table 5. Data Extraction

Article	Perinatal Mental Health Status	Social Behaviour of Children	OR (95% CI)	p-value
Junge et al., 2017	Perinatal depression	Social-emotional	3.63	0.05
Kingston et al., 2018	Perinatal depression	Separation anxiety	1.64	0.019
Lipschutz et al., 2024	Perinatal anxiety, depression, and PTSD	Temperamental	–	0.001
Ibanez et al., 2015	Perinatal anxiety and depression	Difficulty in interacting with peers	8.39	0.004
Pickles et al., 2017	Perinatal anxiety and depression	• Social-emotional • Difficulty in interacting with peers	• 0.142 • 0.106	0.067
Van Der Waerden et al., 2015	Perinatal depression	• Hyperactivity • Social-emotional	• 0.78 • 0.94	0.03
Giallo et al., 2015	Perinatal depression	Difficulty in interacting	–	0.001
Park et al., 2018	Perinatal depression	Attention Deficit Hyperactivity Disorder (ADHD)	0.3	0.006
Garthus-Niegel et al., 2017	Perinatal depression and PTSD	• Social-emotional • Hyperactivity	–	0.01
Dachew et al., 2021	Perinatal depression	• Oppositional Deficiency Disorder • Adaptation Difficulties • Attention-Focusing Disorder • ADHD & Anxiety Disorders	• 1.75 • 0.84 • 0.89 • 0.79	

Based on table 5, the following are the results of data extraction regarding the impact of perinatal mental health status on children's social behaviour, Perinatal depression and anxiety have been shown to significantly influence a child's social-emotional development and behavior. (Junge et al., 2017) found that children born to mothers who experienced perinatal depression were at higher risk of developing social-emotional problems, with an odds ratio (OR) of 3.63 ($p = 0.05$). Similarly, studies by (Giorio et al., 2020) and (Pickles et al., 2017) highlighted the negative impact of both perinatal anxiety and depression on children's social-emotional development, though the results approached marginal significance (OR = 0.142 and OR = 0.106; $p = 0.067$).

More specifically, (Giallo et al., 2015) demonstrated a strong association between perinatal depression and interaction difficulties in children ($p = 0.001$), which was further supported by (Ibanez et al., 2015), who reported that perinatal anxiety and depression increased peer interaction difficulties (OR = 8.39, $p = 0.004$). Beyond social challenges, perinatal depression has also been linked to specific behavioral problems. For instance, (van Der Waerden et al., 2015) identified an association between maternal depression and child hyperactivity (OR = 0.78–0.94, $p = 0.03$), while (Park et al., 2018) connected it to Attention Deficit Hyperactivity Disorder (ADHD)

(OR = 0.3, p = 0.006). (Dachew et al., 2021) further broadened this perspective, associating perinatal depression with a range of behavioral disorders, including oppositional defiant disorder, adaptation issues, and attention deficits (p = 0.05).

Lastly, emotional and anxiety-related disorders have also been observed, with (Kingston et al., 2018) linking perinatal depression to child separation anxiety (OR = 1.64, p = 0.019), and (Lipschutz et al., 2024) noting a significant relationship between perinatal anxiety, depression, and PTSD with temperamental problems in children (p = 0.001). Collectively, this body of evidence underscores the profound and lasting impact of maternal mental health during the perinatal period on various dimensions of child development. This systematic review shows that perinatal depression and anxiety impact various aspects of children's social-emotional and behavioral development. Children of mothers who experience perinatal depression tend to have a higher risk of developing social-emotional problems, interaction difficulties, hyperactivity and other behavioral disorders.

Discussion

This systematic review identified literature on the impact of perinatal mental health problems on the social behavior of children aged 1 to 5 years. The ten articles used were of excellent quality. The risk of bias assessment of these articles showed that all had a low risk of bias with a range of values between 27-33. From the ten articles reviewed, it was found that maternal mental health status such as anxiety, depression and PTSD during the perinatal period had an effect on children's social behavior. Maternal depression during pregnancy and postpartum is strongly associated with social-emotional problems in 2-year-old children. Maternal depression at various times during the prenatal and postnatal periods is associated with a three to fourfold increased risk for children to experience social emotional problems (Junge et al., 2017).

Mental health symptoms in mothers during the perinatal period have an impact on the behavioral development of their children. Maternal depressive symptoms during pregnancy and the postpartum period have a significant association with the risk of oppositional defiant disorder in children and endanger the health of mother and child (Hentges et al., 2020; Racine et al., 2020). Children of mothers who experience postpartum PTSD often have difficulty in controlling their emotions, as well as ongoing anxiety and depression. Hyperactive or impulsive behaviors are also often observed in these children, which may hinder their overall development (Garthus-Niegel et al., 2017).

(Fauziah, 2021; Kingston et al., 2018) describes four symptoms of depression in mothers during pregnancy and a year after delivery. Children of mothers with high and persistent depressive symptoms tended to experience more behavioral problems at age three. Other factors affecting child behavior include maternal age, education, income, mental health history, anxiety symptoms, relationship status and language spoken at home. Most women (64.7%) experienced depressive symptoms, with at least (10.9%) experiencing symptoms in the early postpartum period, (18.8%) experiencing periodic subclinical depressive symptoms and (5.6%) experiencing persistent high depressive symptoms (Muzzamil, 2021).

Children of mothers who experience depression or anxiety tend to withdraw from social environments and exhibit less responsive behavior. This can hinder their ability to interact with peers and participate in social activities that are important for their development (Ibanez et al., 2015). In addition, they often exhibit high levels of negative affect such as anger, fear or sadness and are prone to emotional disturbances and difficulties in regulating emotions that can continue until the age of 3 years or older (Giallo et al., 2015).

Risk factors for perinatal depression include stressful life events, history of depression, poor social support, poor relationship quality and low socioeconomic status (Gusmaladewi et al., 2023; Lindayani & Marhaeni, 2020; Musfiroh et al., 2023). This mental disorder has been shown to have negative effects on the quality of life of mothers and their intimate relationships, birth outcomes, and the likelihood of breastfeeding, as well as long-term effects on the cognitive and emotional development of the child (Dagher et al., 2021; Veri et al., 2024). Mothers with

perinatal mood and anxiety disorders affect the early life development of the infant including the development of neurosynaptic, regulatory development, and cognitive development. Early identification and treatment is critical to ensure optimal infant development (Hoffman et al., 2017).

There is a clear correlation between maternal depression and hyperactive behavior and inattention in children leading to Attention Deficit Hyperactivity Disorder (ADHD) and impacting the child's ability to function effectively in school and home environments (Dachew et al., 2021). Depression during pregnancy and the postpartum period can affect a child's ability to speak, understand language and gross and fine motor skills (Nix et al., 2021). This suggests that maternal mental health affects not only the emotional aspects of children, but also their physical and cognitive development (van Der Waerden et al., 2015). In a review (Power et al., 2021) the impact of perinatal depression on children was studied focusing on cognitive functions such as working memory, distraction, and response inhibition. The social emotional development of early childhood and also influences the personal development of early childhood, as evidenced by the difference in achievement, namely 0.06% (Ummah & Fitri, 2020).

These overall findings emphasize the importance of attention to maternal mental health during pregnancy and postpartum. Appropriate interventions can reduce the negative impact on child development and support children's emotional and cognitive well-being. Study limitations include the scope of sources, dominance of developed countries, and the absence of meta-analysis. Further research is needed to formulate effective intervention strategies and ensure continuous support for mothers and children throughout the perinatal period and recommended to expand the scope, conduct longitudinal studies, and explore early interventions and adaptations of early childhood education.

Conclusion

This systematic review shows that maternal perinatal mental health conditions such as anxiety, depression, PTSD during perinatal and postpartum periods affect children's social behavior in the form of risk of oppositional defiant disorder, difficulty in controlling emotions, Attention Deficit Hyperactivity Disorder (ADHD) hyperactive behavior, and inhibit children's ability to interact socially (such as peers), thus having a significant impact on the social behavior of children aged 2 to 5 years. The key findings of this review underscore the close relationship between maternal mental health status during pregnancy and the postpartum period and various social- emotional problems in children. The review also emphasizes the importance of screening and early intervention for maternal mental health in health policy and clinical practice, as well as increased awareness and education among health professionals. Risk of bias assessment of these articles showed that all had a low risk of bias, with good research quality. The synthesis of results showed a significant impact of maternal mental health disorders on children's social development, providing a strong basis for the study's conclusions. Further research is needed to understand the mechanisms underlying this relationship and to develop more effective interventions in practice to support the sustainability of maternal and child mental well-being and promote better social-emotional development in children.

Declarations

Author Contribution Statement

AA served as the Lead Author and Project Coordinator, leading the team in the development and execution of the systematic review. AA conducted database searches, performed the initial screening of titles and abstracts, screened full-text articles as Reviewer 1, conducted data extraction, critical appraisal, and risk of bias evaluation, and drafted the manuscript. SL and MW contributed to database searching, title and abstract screening, full-text screening as Reviewers 2 and 3 respectively, and participated in data extraction, critical appraisal, risk of bias evaluation, and manuscript drafting. KAJ and SEC were involved in database searches, data extraction, critical appraisal, risk of bias evaluation, and manuscript drafting. CSP and FME provided critical

feedback, reviewed manuscript drafts, offered editorial suggestions to improve clarity and quality, and ensured compliance with journal submission guidelines.

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Declaration of interest statement

The authors declare that there is no conflict of interest related to the authorship and publication of this research.

Implications and Limitations

This study found that maternal depression, anxiety and PTSD were strongly associated with two aspects of child behavior and social development, providing strong evidence that maternal distress impacts child behavior. The review also showed that maternal distress 2-5 years postpartum can negatively impact children's social-emotional and behavioral development. These results were obtained through a robust and systematic review of the quality of relevant articles. The review underscores the importance of attention to maternal mental health during pregnancy and postpartum, as health Poor perinatal mental health can have a significant impact on children's social development. This may support the formulation of better health policies, including mental support programs for pregnant and new mothers, to reduce the risk of social disorders in children. It is expected that future studies should consider and evaluate specific maternal mental health problems so that the outcomes shown are appropriate.

Despite the strengths of this article, there are some limitations in this review of the influence of maternal mental health disorders on children's social behavior. Limited data from a limited number of studies as well as sample variation may affect the generalizability of the findings. This review included only three databases with limited manual searches and focused on developed countries. It is hoped that similar studies will also be conducted in developing countries to ensure more relevant and widely applicable results, especially in developing countries.

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