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Systematic Literature Review: Paternal Postpartum Depression Scale

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ABSTRACT

Postpartum depression in fathers has an impact on the harmony of household relationships, children's emotional development disorders, children's behavior disorders, even children can also be 2-4 times at risk of depression before adulthood. This study aims to review several instruments used to assess fathers' PPD (Postpartum Depression). The database used in this literature review is PubMed. Based on 10 studied, there are 9 different father PPD instruments, including EPDS (Edinburgh Postnatal Depression Scale), GMDS (Gotland Male Depression Scale), BDI (Beck Depression Inventory), BDI-II, GHQ-12 (General Health Questionnaire- 12), PHQ-9 (Patient Health Questionnaire - Depression Module) CES-D (Center for Epidemiological Studies Depression), Zung SAS (Zung's Self-rated Anxiety Scale), and HAD-A (Hospital Anxiety and Depression Scale. EPDS is an instrument most frequently used in detecting paternal PPD, appeared in 10 out of 10 studies. This study concludes that there are 9 different instruments for detecting PPD in the father, and the EPDS is the most frequently used instrument in detecting PPD in the father, which consists of 10 questions with a score limit of 10/11.

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INTRODUCTION

The postpartum period is a critical period and requires adaptation not only for the mother but also for the father and at this time can also pose a risk of depression (1). Postpartum depression (PPD) is often defined as a major disorder after the birth of a child (2). Paternal PPD is a global problem however, it is rarely discussed, and there are no current studies focusing on screening for paternal depression in Indonesia.

A study of 80 couples in Virginia found that as many as 1 in 10 fathers had PPD, with a 25-50% increased risk in fathers whose partner suffered from depression (3). Becoming a father is not an easy thing, there is some evidence that explains that the transition to becoming a father is a complicated thing, which can cause distress, anxiety, so that the risk of depression occurs (4). The authors previously found that there was a 25.6% increase in the prevalence of depression during the 3 to 6 month postpartum period (5).

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Women and men both express and manage their depressive symptoms differently, but paternal PPD is characterized by additional symptoms (6). It has been well documented that men are more likely to display hyperactive behavior, and irritability. Sometimes exhibits avoidant behavior, and uses drugs and/or alcohol (7). Paternal PPD is often undervalued or undiagnosed because of this uncertain clinical picture (8).

The PPD factor experienced by the father occurs due to hormonal changes, previous history of depression, domestic quarrels, poverty, depression in the mother, unwanted pregnancy and lack of sleep are factors for depression (9) (10). A study explained explains that both father and mother PPD are associated with emotional development disorders in their children. Children are two to four times more likely to develop depression before adulthood when they have a parent who suffered from depression. couple relationship (11) (12).

Previous systematic literature review studies, only focused on maternal depression screening tools. Therefore, it is necessary to have early detection of depression in fathers, so that they can immediately get further treatment. The purpose of this study is to review several instruments used to assess fathers' PPD (Postpartum Depression).

METODE

The method used in writing this article is a literature review. The literature search strategy is as follows:

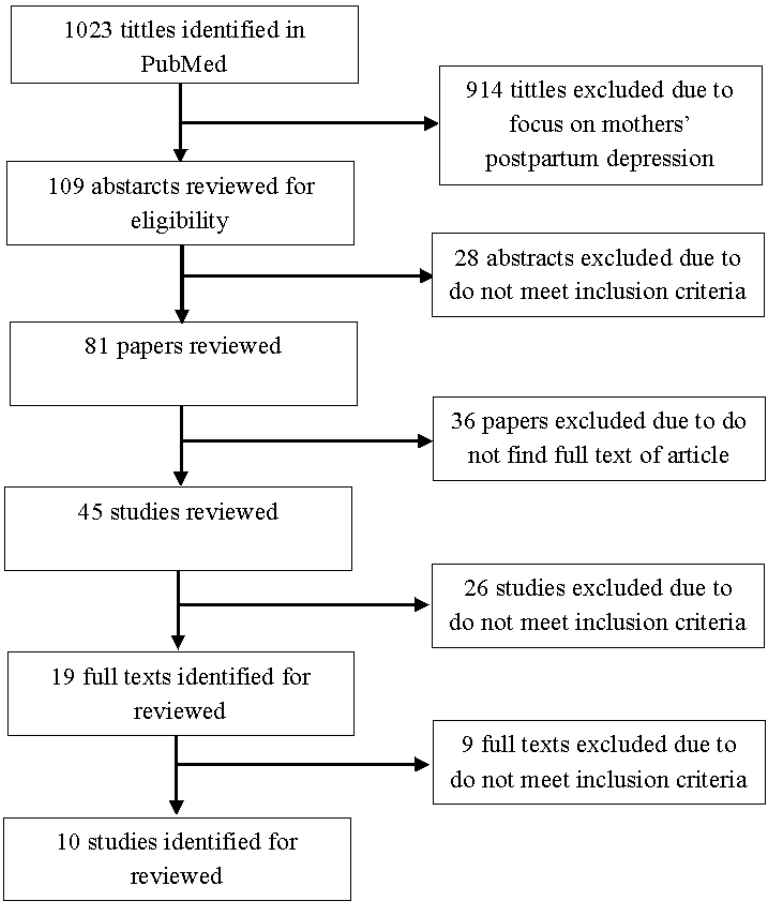

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Figure 1. Selection process for included studies according to Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA)

Search Strategy

A systematic literature search was carried out in the PubMed database to identify relevant records. All databases were screened in January 2022. The search strategy used the terms: “Postpartum Depression Scale for Man” AND “Paternal Depression” AND “Paternal Postnatal Depression” AND “Postpartum Depression” AND “Validation.”

Screening and Selection Procedure

The following inclusion criteria were applied to the identified records: (a) Men in the postpartum transition stage, (b) Assessment of mood-specific symptoms (depression), (c) Only studies published in English. Exclusion criteria included studies of pharmacological and non-pharmacological treatment, investigations in postpartum women only, studies that did not specify the instrument for assessing depression in fathers. The final selection is to read the full text of all the remaining records to evaluate eligibility. The screening and selection procedure is shown in Figure 1.

Data Extraction

Included articles were examined for information about the first author, year of publication, country of study, sample size, and instrument used to assess postpartum depression in fathers. This search did not use a time limit due to the lack of research related to measuring instruments for postpartum depression in fathers.

RESULTS

Search result

Our search yielded 1,023 articles, 914 of which were excluded because they did not focus on fathers as a respondent and did not present original research with primary data. The assessment of titles and abstracts identified irrelevant totaled 28 articles. Full text assessments for eligibility of the remaining 45 were traced. Twenty-six articles were excluded because they included studies of pharmacological and non-pharmacological treatment, investigations in postpartum women only, studies that did not specifically describe the instrument for assessing depression in fathers. In total, 10 articles were identified eligible for inclusion in this review.

Symptoms of Father's Postpartum Depression

In a study conducted in Sweden with a study population consisting of men who had become fathers during November-December 2010 and May-June 2011 explained that anger and irritability are characteristics of postpartum depression in fathers (13). Meanwhile, in a study conducted in England explained the characteristics of postpartum depression, namely sleep disturbances, changes in appetite, and weight loss (15).

Prevalence and Risk Factors for Postpartum Depression in Fathers

The overall prevalence of depression in fathers often appears in the first year after birth, fathers are also at risk for depression if their partner also suffers from these symptoms. Other risk factors for paternal depression are financial/life stress, and lack of social support, low education level, low income, poor quality of partner relationships, young age of the father (13). A study revealed that the most likely risk factors for paternal depression after childbirth were maternal depression, having a previous history of depression, having a bad relationship with their partner, poor social functioning, unemployment, and age >30 years (16).

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Father's Postpartum Depression Assessment

Overall, a total of 9 different scales were used to assess mood across the studies conducted although only 1 of them was used repeatedly. EPDS (Edinburgh Postnatal Depression Scale), GMDS (Gotland Male Depression Scale), BDI (Beck Depression Inventory), BDI-II, GHQ-12 (General Health Questionnaire-12), PHQ-9 (Patient Health Questionnaire - Depression Module) CES -D (Center for Epidemiological Studies Depression), Zung SAS (Zung's Self-rated Anxiety Scale), HAD-A (Hospital Anxiety and Depression Scale).

Tabel 1. Summary of findings

Author (year)	Country	Respondent	Scale	Cut-off point
Matthey et al. (2001)	Australia	230 mothers and 208 fathers were sent the EPDS, then they were diagnostic interviewed at 6 weeks postpartum.	EPDS; CES-D; diagnostic interview	EPDS 9/10 (anxiety 5/6) CES-D
Edmondson, et al. (2010)	England	192 fathers were sent the EPDS at 7 weeks after the birth of their child. A structured clinical interview was conducted to determine whether they were suffering from depression.	EPDS	EPDS 10
Lai, et al. (2010)	China	551 fathers at 8 weeks after birth .	EPDS; PHQ-9 BDI	EPDS 10/11 PHQ-9 3/4 BDI 5/6
Nishimura, et al. (2010)	Japan	146 fathers	EPDS dan CES-D	EPDS 7/8 CES-D 16
Trans, et al. (2011)	Vietnam	231 fathers	EPDS; Zung SAS; GHQ12	EPDS 4/5 Zung SAS 35/36 GHQ-12 0/1
Massoudi et al. (2013)	Sweden	1014 couples were sent EPDS and HAD-A at 3 months after birth. Fathers with high score were followed by diagnostic interview to assess their depression and anxiety.	EPDS HAD-A	EPDS (severe > 12, depression >9) HAD 4 HAD 8
Loscalzo et al. (2015)	Italy	436 fathers	EPDS; CES-D.	EPDS 13/12
Psouni et al. (2017)	Sweden	447 fathers	EPDS; GMDS; BDI-II	EPDS 14 BDI-II 14
Carlberg et al. (2018)	Sweden	3656 fathers	EPDS dan GMDS	EPDS 10/12 GMDS 13
Shaheen et al. (2019)	Saudi Arabia	290 fathers	EPDS;	EPDS 8/9

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DISCUSSION

EPDS (Edinburgh Postnatal Depression Scale)

EPDS was developed by Cox et al (17) which contains 10 question items and consists of 4 options and each is rated 0-3. With a total score of 0-30 points, a high score indicates a degree of depressive symptoms. The EPDS asked whether during the past seven days the respondent was able to laugh/see the funny side of things, look forward to things happily, blame themselves unnecessarily when something went wrong, worried or worried for no apparent reason, felt scared or panicked for no apparent reason, feel that the situation is “up” [respondent], so unhappy that it is difficult to sleep, feeling sad or miserable, so displeased that [respondent] cries, and if the respondent thinks about hurting himself (17).

There are 10 studies that used EPDS for assessment. Those 10 studies have different number of cut-off score. According to research conducted in Sweden (13), show that the cut off score used is 10/12 or more. Sensitivity and specificity were not reported. Cronbach's measure of internal reliability for the EPDS (0.83).

A study conducted in the UK (15), couples were recruited 7 weeks after birth. Shows the results of a cut off score of 10, resulting in sensitivity of 77.3% and specificity of 92.9%.

Another study conducted in Italy (18), it found a cut off score of 13/12 with sensitivity of 90% and specificity of 90%.

GMDS (Gotland Male Depression Scale)

Another instrument discussed is the GMDS which consists of 13 items with 4 options, and is rated 0-3 which addresses typical depressive symptoms in men (19). The GMDS asks about stress, external aggressiveness or reactivity or difficulty maintaining self-control, feelings of burning and emptiness, persistent unexplained tiredness, irritability or restlessness or frustration, difficulty making daily decisions, sleep problems, morning restlessness or anxiety or anxiety, excessive alcohol or pill consumption or hyperactivity or overeating or undereating, biological predispositions to abuse or depression or denial or suicide attempts or susceptibility to behaviors that involve harm, are unrecognizable or difficult to deal with as perceived by oneself or others, expressions of despair, and self-pity over the past month (19).

A study conducted in Sweden (13) stated a cut-off score of 13 for GMDS, Sensitivity and specificity were not reported, Cronbach's measure of internal reliability for GMDS (0.88).

Two studies using GMDS explained that the screening tool was less independent to screen for postpartum depression in fathers (13) (20).

BDI dan BDI-II *(Beck Depression Inventory*

The BDI is a 21-item self-report rating scale developed to measure the severity of depression. It is one of the most commonly used scales for assessing depression in both research and clinical settings (21).

BDI has a sensitivity of 100% and a specificity of 81%. With a cut off score of 5/6 and a negative predictive value of 100% (14). This research was conducted in Hong Kong with respondents from Chinese fathers. There is an updated version of the BDI, namely BDI-II which was used in a study conducted in Sweden (20). The cut-off score of BDI-II was 14 for mild depression, 20 for moderate depression. However, the specificity and sensitivity are not clearly explained.

PHQ-9 9 (Patient Health Questionnaire)

The PHQ-9 is the nine-item depression module of the Patient Health Questionnaire (23). It is a criteria-based instrument originally developed for depression screening in

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primary care. It consists of nine questions with 4 options, and is rated 0-3. PHQ-9 asks for interest or pleasure in doing something, feeling sad or hopeless, having trouble sleeping or sleeping too much, feeling tired or having little energy, having a bad appetite or overeating, feeling bad about yourself or feeling like a failure or feeling let down alone or with family, difficulty concentrating on things such as reading the newspaper or watching TV, moving or speaking too slowly for others to notice or feeling restless and moving more than usual, thinking it would be better to die or hurt yourself (23).

A study conducted in Hong Kong among Chinese fathers 8 weeks postpartum, had a cut off score of with Sensitivity of 85% and specificity of 81%, positive predictive value 23%, and negative predictive value 98% (14).

CES-D (Center for Epidemiological Studies Depression)

The CES-D scale is a short self-report scale designed to measure depressive symptoms in the general population. This scale consists of 20 question items, namely: I am bothered by things that usually don't bother me, I don't want to eat / my appetite is bad, I feel that I can't get rid of my sadness even with the help of my family or friends, I I feel that I am as good as other people I have trouble controlling my thoughts and what I do I feel pressured I feel that everything I do is an effort I feel hopeful about the future I think my life has ragged I I feel scared, I'm restless when I sleep, I feel happy, I talk less than usual, I feel lonely, People are not friendly, I enjoy life, I have a crying spell, I feel sad, I feel like people don't like me, I don't can go".

A study conducted in Japan (16) at 4 weeks postpartum, assigning a cut off score of 16 for depression, while a study conducted in Italy (18) did not explain the cut off score for CES-D.

Zung SAS (Self-rated Anxiety Scale)

The Zung SAS is a 20-item self-rating scale for detecting anxiety disorders. The scoring method is obtained by dividing the total number (obtained on 20 items) by the maximum possible score, converted to decimal and multiplied by 100 (24). A cut-off of 44/45 was suggested to detect comorbid anxiety and depression in men and women (25).

However, in the study conducted in Vietnam (26), the cut off score was 35/36 with sensitivity of 70.7% and specificity of 79.0%.

GHQ-12 (**General Health Questionnaire)**

GHQ is a self-administered screening tool to detect mental disorders. GHQ has been translated into 38 languages (27). Initially developed the GHQ is a 60-item questionnaire, there are several shortened versions (30-item, 28-item, 20-item, and 12-item). This 12-item version has been adopted as a screening tool in a multi-country study by the World Health Organization (WHO) (28).

The GHQ-12 is rated on a 4-point scale using a timeframe of “within the last two weeks”. There are three events for assessing GHQ-12: the bimodal (0-0-1-1) GHQ assessment method recommended by the trial authors for use in clinical settings; and the Likert rating method (0-1-2-3) which is commonly used in research, and the C-GHQ scoring method in which items with positive phrases are scored (0-0-1-1) and items with negative phrases (0-1- 1-1).

A review of the international validity studies of GHQ-12 conducted 20 years ago, reported that the optimal threshold varies from 1/2 to 6/7, with the most common limit being 2/3 (28). While in the research conducted by (26) the limit score used is 1/2 with sensitivity of 75.6% and specificity of 74.7%.

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HAD-A (Hospital Anxiety and Depression Scale)

The HAD is a self-rating scale developed to identify anxiety and depression in non-psychiatric patients. It consists of two subscales, the depression subscale (HAD D) and the anxiety subscale (HAD-A), each consisting of seven items. HAD is presented as a reliable instrument for screening for depression, anxiety in the general population. The HAD-A subscale used in the study used a cut-off score of 9 with sensitivity of 51% (29).

The limitation of this study is only use PUBMED database, that may not include a study from other databases. However, this study has included sufficient number of screening tools to provide variety of father's depression screening tools.

CONCLUSION

The study concluded that depression in men is a serious problem, and that most men who suffer from the condition are not aware of it. Both men and women experience depression after the birth of their baby, but most men are not open about sharing their feelings, unlike women. It is important to identify fathers' depression in order to prevent the occurrence of behavioral problems in their children and disturbances in their partner's relationship. Perinatal mental health assessments should focus on the family as a unit.

In conclusion, our findings indicate the need for further research on the development and profile of postpartum depression in fathers. Lack of specific Paternal PPD questionnaires to assess Paternal PPD complex symptoms. The findings of this study suggest further attention and research should be focused on developing new father screening with questionnaires based on a combined scale to improve the detection of mood disorders, including generalized disorders, anxiety, and depression.

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