Assessing Postpartum Depression Symptoms in Teenage Mothers Using Patient Health Questionnaire-9: A Preliminary Study

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Abstract. Postpartum depression is the most mood disorder in the first year after-birth. Higher in teenage than adult mothers. The purpose of this study was to assess symptoms of postpartum depression using Patient Health Questionnaire-9. A descriptive study of 203 teenage' mothers located in West Java Province, Indonesia. Instrument of Patient Health Questionnaire-9 Indonesia version using Google form. Descriptive analysis was performed and reliability test by alpha Cronbach = 0.78. The findings showed that 32% participants exhibited symptoms of postpartum depression with the most feeling little interest 33.50%, 52.22% sleeping problem, 56.16% feeling tired, 37.44% poor appetite/overeating and 2.95 thought dead/hurting. Patient Health Questionnaire-9 is good to assess symptoms of depression after birth in teenage mothers.

Keywords: Assessment, Patient Health Questionnaire-9, Postpartum depression, Teenage' mothers.

1   Introduction

Postpartum depression (PPD) is the common mental disorders after delivery and a considerable becomes a public health problem until one year after-birth [1]. PPD has been called as a hidden illness cause of big difficulties in detecting depression symptoms. Symptoms of PPD may be occasionally awkward to be detected regarding symptoms may be natural in postpartum phenomena. PPD can occur as early as four weeks after childbirth [2],[3]. However, PPD mostly begins within the first one year after-birth [4],[5]. Depression is one of cause of suicide, because prolonged depression that is not treated immediately can cause suicide. At this time, suicide is the second cause of death at the age of 15-29 years [6]. Itis important to early as possible to detect postpartum particularly in teenage mothers

The prevalence of PPD was a ranged from 10% to 20% in worldwide [1], [7],[8]. While the estimates of the prevalence of PPD in Indonesia reported to range from 2.5% - 26.15% [9],[10]. Judging from the population, postpartum mothers are the second largest contributor to depression after the adolescent population. World Health Organization [11] released that 16% adolescent in the world risk for mental health disorder including depression, while about 11,6% girls in the world getting pregnant. The other condition is in postpartum period a mother had an average three times higher for developing depression than in

other periods [6]. However, this prevalence varies across studies depending on factors such as the instrument used to measure PPD, time of assessment, cut-off point scores, and population characteristics [12].

Some research in west countries showed that the prevalence of PPD in adolescence mothers was higher than adult mothers. Based on data, the marriage rate for children aged 16 years or less in Indonesia has increased on average from 11.2% to 20%. The three provinces in Indonesia with the highest youth marriage are South Kalimantan 22.77%, West Java 20.93% and East Java 20.73% [13]. Furthermore, research regarding postpartum depression among teenage mothers is limited in Indonesia.

Screening is an effective method used for surveillance and prevention of PPD. There are 2 types of questionnaires for general screening: a self-report and professional report. Self-report assessment is an assessment by a person using a tool designed for examining symptoms of depression according to her perceptions or feelings. A professional report is an assessment by a specialist such as a psychiatrist, obstetrician, or nurse who cares for people with depression for monitoring the symptoms of depression. Postpartum depression screening is important for helping and caring for the patient. Options for screening for PPD often rely on the use of standardized scales or measures. Several tools have been used in the screening and evaluation of postpartum depression. Prior to implementation of the screening protocol, a review of literature conducted the use of standardized scales for the aim of screening or assessment. The instruments for screening PPD include the Edinburgh Postnatal Depression Scale (EPDS), The Postpartum Depression Screening Scale (PDSS), the Beck Depression Inventory (BDI)-II, The Center for Epidemiologic Studies Depression Scale (CESD), The Patient Health Questionnaire (PHQ-9), The Hospital Anxiety and depression Scale (HADS), and The Perinatal Depression Inventory (PDI)-14. In Indonesia most common screening for PPD was using EPDS, and rare using PHQ-9. PHQ-9 is a tool to detect postpartum depression symptoms that consist of 9 items. The researcher predict that PHQ-9 can be used to detect postpartum depression in teenage mother in Indonesia population. Our research objective was to asses postpartum depression symptoms in teenage mothers using Patient Health Questionnaire-9 (PHQ-9).

2   Method

Design and study settings

A descriptive design, conducted during July 2020 to August 2020 at Public Health Center in Cianjur and Sukabumi District, West Java Province, Indonesia.

Sample

An eligible-participants consisted of 203 teenage mothers with age no more than 20 years, postpartum period at one month to one year, who had lived with husband, the baby born weight ≥ 2500 gram, healthy, and mature, and be able to read, write and speak Bahasa Indonesia. However, subjects who are mentally ill or have a family history of psychiatric problems and baby stillbirth will be excluded. Samples were recruited by consecutive sampling technique.

Instruments

The instruments used in this study included Patient Health Questionnaire-9 (PHQ-9). Patient Health Questionnaire-9 Indonesia version used to measure postpartum depression symptomatology among teenage mothers. The PHQ-9 was developed as a screener for depression during the development of Primary Care Evaluation of Mental Disorders (PRIME-

MD) [13]. The PHQ-9 is a self-administered tool based on DSM-IV criteria for diagnosing depressive disorder. The PHQ-9 can be used to monitor severity of depression by the frequency assessing each symptom. The PHQ scale of 0 – 3 range of total score is 0 - 27.

Data collection

Institutional Review Board approval from Faculty of Health Sciences, Universitas Islam Negeri Syarif Hidayatullah Jakarta, Indonesia, Number KE.SP/07.08.018/2020. After getting approval, researcher selected randomly the following sites: Public health center in Cianjur District and Sukabumi District West Java, Indonesia, then trained 9 research assistants as an enumerator. Trained one day in data collection in which researcher explained the research objectives, the role of research assistants and the instruments that will be used, provided a manual for data collection.

The researcher or research assistants first met head of public health center to get permission for collected data and ask data of proposed participants. We visited their home guided by cadre of integrated health post. The Assistant researcher asked to selected participants and if they agreed to participated, they filled informed consent. Data collection was conducted at their home. Researcher or assistant researcher asked the participants to complete the questionnaire within 10-15 minutes.

Validity and reliability test was performed in research samples among teenage mothers. Validity test was by using Spearman rho and reliability test was by alpha Cronbach. All items were valid (results more than 0.35 all item) and the result of reliability was 0.78.

Statistical analyses

Data analyses were performed with a statistical software program in response to the research objectives. The descriptive statistics was used to describe the studied variables.

3   Result

Respondents' Characteristics

The data from respondents' characteristics showed that more than three-quarter of the participants had graduated from basic education (elementary and intermediate school), almost all (95.56%) were house-wives. More than half had family income less than IDR 3 million (equal to $20), almost all participants was first-time mothers, and almost all had a vaginal delivery (99.01%). Just over half of the mothers (59.11%) had a baby boy at the current delivery. (Table 1).

Table 1. Characteristics of the Respondents

Variable	n	%
Level of education Elementary school	67	33.00
Intermediate school	98	48.28
High school	38	18.72
Working status House-wives	194	95.56
Working	19	14.44
Family Income (IDR)		
≤ 3.000.000	136	66.99

> 3.000.000	67	33.01
Number of Children		
One child	188	92.61
Two or more children	15	7.39
Type of deliver		
Vaginal birth	201	99.01
Elective C-section	2	0.99
Current baby's gender		
Boy	120	59.11
Girl	83	40.89

Symptom of Postpartum Depression

Symptom of Postpartum Depression was 32.02%. Based on category of postpartum depression by using PHQ-9 exhibited in Table 2.

Table 2. Category of Postpartum Depression using Patient Health Questionnaire-9 (N=203)

Category	n	%
No. Depression	138	67.98
Mild depression	53	26.11
Moderate depression	5	2.46
Moderate severe depression	6	2.96
Severe Depression	1	0.49
Total	203	100

From total 32.02% symptom depression by using PHQ-9, 26.11% adolescent mothers experienced mild depression and there was 1 mother (0.49) who had experienced severe depression. If we break-down into nine, items of symptom depression exhibited that more than half of the participants were trouble falling or staying asleep, or too much sleep and feeling tired or having little energy; and six participants were thought dead or hurting their selves. (Table 3).

Table 3. Symptom of Postpartum Depression in Patient Health Questionnaire-9 (N=203)

No	Item	n	%
1.	Little interest or pleasure in doing things	68	33.50
2.	Feeling down, depressed, or hopeless	46	22.66
3.	Trouble falling or staying asleep, or sleeping too much	106	52.22
4.	Feeling tired or having little energy	114	56.16
5.	Poor appetite/overeating	76	37.44
6.	Feeling bad about yourself — or feeling a failure or have let yourself or your family down	43	21.18
7.	Trouble concentrating on things, such as reading the newspaper or watching television	42	20.69
8.	Moving or speaking so slowly that other people could have noticed	29	14.29
9.	Thought dead/hurting	6	2.95

4. Discussion

The PHQ-9 has been used in a variety of settings. The PHQ-9 has been translated and adapted for diagnosing depressive disorder in several countries including Indonesia. A meta-

analysis reported that the summary sensitivity of the PHQ-9 was 0.77 (0.71–0.84) and specificity was 0.94 (0.90–0.97). The PHQ-2 can be used as a screening tool for depression in primary health care, and patients who screen positive are subject needed to further evaluation [15]. In this research reliability of PHQ-9 was 0.78. This reliability remains good that means PHQ-9 can be used as tool for self-assessment to detect symptoms of PPD among teenage mothers.

In addition, PHQ-9 was adapted by Hanwela et al [16] in Sri Lanka. Hanwela studied the validity testing that was assessed by correlating total score of PHQ-9 compared to instrument of the Centre for Epidemiological Studies Depression Scale (CESD). The Structured Clinical Interview for DSM-IV conducted by a psychiatrist was the gold standard. The result showed that there was a significant difference in the mean PHQ-9 scores between cases (14.71) and controls (2.55) ($p < 0.001$) with the specificity was 0.97; the sensitivity was 0.58. Receiver operating characteristic (ROC) analysis found that cut-off score of $\geq$10 had sensitivity of 0.75 and specificity of 0.97. Furthermore, as comparison standard, the Edinburgh Postpartum Depression Scale (EPDS) Indonesia version is the well-known PPD screening instruments in Indonesia. According to reliability and validity test among 60 postpartum women, EPDS in Indonesian version has sensitivity 92,5% with prediction value 76,7% and Alpha coefficient 0,95% [17].

The research yielded, by using PHQ-9 that 32.02% teenage mothers had experienced symptom of PPD. If compare to previous study using EPDS, about 35.96% teenage mothers had experienced symptom of PPD. This finding is higher than similar studies conducted by Nurbaeti et al [10] among adult mothers that reported the prevalence of postpartum depression was 18.37% in the first month, 15.19% in the second month and 26.15% in the third month after-birth. Another research in 2019 in South Jakarta, Indonesia showed a lower rate, about 19.88% mothers experienced PPD [18]. However, this result is similar with previous study in USA that depression after birth among teenage mother higher fifty percent than adult mother [19]. Although most of mothers experienced mild depression, some of them experienced moderate to severe depression that need further examination and intervention.

From 32.02% adolescent mothers experienced symptom of postpartum depression, 26.11% experienced symptom of mild depression, while one mother (0.49%) experienced symptom of severe depression. This study is higher than previous study in USA [20] in adult mothers that showed 11.30% mothers experienced symptom of postpartum depression. It exhibited that teenage mothers tend to have higher risk to get symptom postpartum depression. In line with symptom of depression, more than half mothers felt tired or had little energy and trouble falling or staying asleep or sleeping too much. Even though a small number, there are 2.95% mothers though dead or hurt their selves. This study is lower than previous study in USA that 6.2% mothers had suicidal ideation [20].

5 Conclusion

The reliability of PHQ-9 remains good to detect symptom of PPD among teenage mothers in Indonesia. We recommend teenage mother to screen for PPD in range from one month to one year after birth, and those who have symptom depression can be evaluated further.

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