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Community Medicine

HOW TO DIAGNOSE POSTPARTUM DEPRESSION?

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ABSTRACT

Post-partum depression is one of the neglected domains of mental health. But it can affect not only the mother but also the new-born child. Depression in the mother can result in increased suicidality of the mother, mother-child bonding oper cognitive, language and socio-behavioural development of the child. American Congress of Obstetricians and

impairment, and improper cognitive, language and socio-behavioural development of the child. American Congress of Obstetricians and Gynaecologists Committee on Obstetric Practice (ACOG) recommends the clinicians to screen women at least once during the perinatal period to assess for the development of mental health disorders. The "United States Preventive Services Task Force (USPSTF)" and "The American Academic of Paediatrics" also recommend the early screening and diagnosis of post-partum mental health disorders of the mother. Different screening tools are available to detect post-partum depression within a short period like – EPDS, BDI I & II, PHQ 9, CES-D, PDSS etc. Trained clinicians and psychologists can confirm the diagnosis of depression with the help of various diagnostic tools like – ICD 10 & 11, DSM-V. Hence there is a need to understand the details of different scales – their advantages, administration time, sensitivity, specificity & other properties. This article summarises various tools used to detect post-partum depression.

KEYWORDS: Depression, Postpartum Depression, Screening Tools, Diagnostic Tool, DSM - V, ICD

INTRODUCTION-

Depression is a state of persistent sadness and a lack of interest or pleasure in previously rewarding or enjoyable activities, disturbance in sleep and appetite. It is defined by American Psychiatric Organization (APA) as - "a common and serious medical illness that negatively affects how you feel, the way you think and how you act."(1) Globally around 5% adults suffer from depression and it is one of the leading causes of disability which contributes greatly to the Global Burden of Diseases. Postpartum depression is defined as intense feelings of sadness, anxiety, or despair of the mothers that prevent them from being able to do their daily tasks.(2) Postpartum depression can occur up to 1 year after delivery, but it usually starts about 1-3 weeks after childbirth (ACOG) Increased maternal stress, low income, lack of support, serious health problems, divorce or separation, death, multiple births, hormonal changes during and after birth are the various factors responsible for the development of post-partum depression.(3) Prevalence of post-partum depression from a metaanalysis was found to be 17.22%.(4) Depression of the mothers can affect the mother and child adversely. Post-partum depression can affect mothers' physical health, psychological health, relationship with partner & amp; family. Not-only that the growth and development of the child can also be affected, including anthropometry, physical health, sleep, and motor, cognitive, language, emotional, social, and behavioral development. Post-partum depression also negatively impacts the mother-child relationship- mother-child interactions, including bonding, and breastfeeding is grossly affected. Still there is stigma regarding the diagnosis of depression in the society. According to a recent study 1 in 7women experience PPD in the year after giving birth.(5) 50% of the depressed women remain undiagnosed by clinicians. So post-partum depression is also called the "worst kept secret". As postpartum depression has a dangerous consequence on the health of the mother as well as her child, and finally the whole family is affected, it is necessary to screen for postpartum depression in at-risk mothers. Most pediatricians now want to implement some form of screening tool during the postpartum check-up.(6) There is importance of screening because many studies have shown that most of the mothers with postpartum depression are ashamed of having symptoms and they are afraid of the social stigma associated with the depression.

A large number of validated screening tools are available to screen maternal depression including both provider and patient administered tools.

Beck's Depression Inventory Primary Care – It is a seven item self-reported instrument composed of cognitive and affective questionnaire. Total score ranges from 0-21, minimum score zero and maximum score 21.(7) For each question, scores have been categorized as 0, 1, 2, 3. It takes less than 5 minutes time to complete the questionnaire. The sensitivity of this scale varies from 91-97% and specificity from 91-99%. It is not a free tool, because of its patency.

BDI-PC is the simplest version of BDI which can be easily administered in a primary care setting.(8) A study conducted by A T Beck et al. in 1997 with the same tool found that the internal consistency of BDI-PC was very high & was moderately co-related with hospital depression subscale. It was not significantly related with the age, sex or ethnicity but cut off score of 4 and above have yielded maximum clinical efficiency.(9)

Beck's Depression Inventory I - Aaron T Beck invented it. The original BDI was first published in 1961. Later it was revised in 1978. Beck had relied on the theory of "negative cognitive distortion as central to depression" to develop BDI.(10) It is a 21-item multiple choice self-report inventory to assess the severity of depression. Lowest score is zero and highest score is 63. The administration time is from 5-10 minutes. BDI-IA was a revised version of the original tool and was copyrighted in 1978.(8) For easy administration of the tool, "a and b statements" were removed & the respondents' feelings in the last two weeks were asked. However, the version had some flaws as it only addressed six out of the nine DSM-5 criteria. BDI administration was straightforward and could be administered by clinician or as a selfreport instrument. Score 0-10 was taken as normal, 11-16 was considered as mild mood disturbance, 17-20 as borderline clinical depression, 21-30 as moderate depression, 31-40 as severe depression and more than 40 as extreme depression. (7)

Beck's Depression Inventory II - The revised version of BDI was introduced in 1996 in collaboration with "American Psychiatric Association Publication" of the "Diagnostic and statistical manual of mental disorders". (11) Like the original BDI, BDI-II also consists of 21 questions and each answer is scored on a scale value of 0-3. Score 0-13 defined as minimal depression, 14-19 as mild depression, 20-28 as moderate depression and 29-63 as severe depression.(7) BDI-I was mainly based on clinical observation and patient descriptions, but BDI II contains items that consists of cognitive, affective, somatic and vegetative symptoms of depression. The main strength of BDI II was its ability to distinguish different levels of depression but the weakness was the apparent nature of the items. BDI II addressed all the criticisms of BDI I. Sensitivity of BDI II varies from 56-57% and specificity varies from 97-98%. It also demonstrates the treatment efficacy and progress among depressed patients. The age of administration is 13 years and above.(8)

Centre for Epidemiologic Studies Depression Scale – It was originally published by Radloff in 1977 to know how often the respondent has experienced the symptoms associated with depression over the past one week. It is a 20-item questionnaire where each item score ranges from 0-3 on a likert-scale. The minimum score is zero and highest score being 60.(12) The CESD also provide a cut-off score i.e., 16 or more to identify to identify the patients at risk for clinical depression with a good sensitivity, specificity as well as internal

consistency. Score 0-16 - no or mild depression, 16-23 is denoted as moderate depression and 24-60 - severe depression(8) It can be administered in the prenatal period until 4 months post-delivery. It takes approximate 10 minutes to complete the questionnaire. A study by Lijun Jiang et al. has found that CESD has good reliability and validity for assessing sub-threshold depression.(7)

Edinburgh Post-partum Depression Scale - EPDS was developed 30 years ago by Jenifer Holden and Ruth Sagovsky, transcultural and social psychiatrists (JLC). It was originally developed in Britain and one of the most widely used screening tool for assessment of "Perinatal Common Mental Disorders" (PCMD) of depression and anxiety. (13) It is a self-administered screening tool. It can also be used as a diagnostic tool. The scale contains 10 questions; each question score is 0-3. The minimum score is 0, the maximum score is 30. A total score of 13 or more is considered as a flag for possibility of depressive symptoms. If the score is >13 the test has to be repeated in 2-4 weeks.(7) It tells about how the mother has been feeling for the previous 7 days. Most mothers can easily complete the scale in less than 5 minutes. It has a sensitivity ranging from 59-100% and a specificity of 49-100%. EPDS 3A can be used as a time-efficient screening tool for detecting anxiety among ante-natal and post-natal mothers. Ideally, EPDS can be administered throughout the pregnancy at least once, preferably twice (between 12-13 weeks and 26-28 weeks of gestation) during the ante-natal period and 6-12 weeks after delivery in the post-natal period.(8)

Patient Health Questionnaire-9 is a self-administered version of the PRIME-MD diagnostic instrument for common mental disorders. It scores each of the nine item of DSM-4 criteria as zero (not at all) to 3 (nearly every day).(14) It is used to monitor the severity of depression as well as response to treatment. The minimum score is being zero and maximum score being 27.(7) A score of more than10 is taken as positive. Score 5-9 is classified as minimal depression, where patient is asked to return in one month and education is given. Score 10-14 is classified as minor depression with or without dysthymia. The treatment given is with or without anti-depressants and psychotherapy is provided. 15-19 is classified as major depression. Intervention in severe depression is necessary. >20 is taken as severe depression and multi-modality treatment is being provided.(8)

Patient Health Questionnaire-2 – PHQ-2 is a primary screening tool, administered before the administration of PHQ-9. PHQ-2 includes the first two items of PHQ-9.(8) It asks about the respondent has experienced "little interest or pleasure or hopelessness or down or depressed in the previous two weeks." The minimum score is zero and maximum score is six. Score of more than three is taken as positive.(7) The purpose of PHQ-2 is not to establish a final diagnosis or to monitor depression severity but to screen for depression as a "first step approach."(15)

Montgomery- Asberg Depression Rating Scale – It is a ten-item Table 1: Screening Tools for Post-Partum Depression

diagnostic questionnaire which the psychiatrists use to measure the severity of depressive episodes of patients with various mood disorders. It was formulated in 179 by Marie Asberg (Swedish) and British researchers as an adjunct to the Hamilton Rating Scale for Depression (HAMD).(16) Higher the HAMD score, more severe the depression is. The overall score varies from 0-60. For each item, the score ranges from of 0-6. Score 0 to 6 indicates normal, 7-19 indicates mild depression, 20-34 moderate depression, >34 severe depression.(8) A self-administered version i.e., MADRS-S with nine questions is sometimes used in clinical practice. Here the overall score ranges from 0-54. The sensitivity of this scale is around 97%, whereas the specificity is around 100%.(7)

Post-partum depression Screening Scale – PDSS is a 35-item self-reported tool that can be administered in only 5-10 minutes. It identifies the mothers who are at high risk for post-partum depression so that referral is possible for definitive diagnosis and treatment.(17) The minimum score is zero and the maximum score is 28. Score nine is taken as cut off score.(7) Sensitivity of PDSS ranges from 91-94% and specificity ranges from 72-98%.(8)

Zung self-rating depression scale-

The scale was first designed by Duke university psychiatrist William W. K. Zung to assess the severity of depression for patients diagnosed with depressive disorder. The Zung Self-Rating Depression Scale is a self-administered questionnaire to categorize the severity of depression of a patient.(18) There are 20 items on the scale that scores the four common characteristics of depression: "the pervasive effect, the physiological equivalents, other disturbances, and psychomotor activities". There are ten positively assessed and ten negatively assessed questions.(7) For each question, the is score ranges from 1-4 on a likart scale — "a little of the time, some of the time, good part of the time, most of the time". The minimum and maximum scores range from 25-100. 25-49 is denoted as normal Range. Score 50-59 categorized as mildly depressed, score 60-69 as Moderately Depressed and 70 and above defined as Severely Depressed.(8)

RAND-3 Question for depression -

It is a three-item depression screening questionnaire takes less than 1 min to complete.(7) The screener composed of the items for assessing major depressive and dysthymic disorders from the 12-month Composite International Diagnostic Interview (CIDI) and items assessing depression symptoms in the past month.

The original CIDI items were developed by Dr. Gavin Andrews with in collaboration with the "National Institute of Mental Health and the World Health Organization".(19) Patients were diagnosed if they had 2 weeks or more of depressed mood or loss of interest in activities which used to give them pleasure during the last year or persistent depression over the year, along with having at least 1 week of depression in the past 30 days.(8)

Tools	Description	Time to Complete(Min)	Cost	Sensitivity & Specificity	Self- administered
BDI-PC (Beck's Depression Inventory Primary Care)	Seven items Score = 0-21 Cut off score = 4	<5 mins	Cost to purchase the complete kit, cost varies by format	Sensitivity 91-97% Specificity 91-99%	Yes
BDI-I (Beck's Depression Inventory I)	21 Items Score = 0-63 >17-Borderline clinical depression	5-10 mins	Cost to purchase the complete kit	Sensitivity 47- 82% Specificity 85-89%	Yes
BDI-II (Beck's Depression Inventory II)	21 Items Score = 0-63 >13 - Mild depression	5-10 mins	Cost to purchase the complete kit	Sensitivity 56-57% Specificity 97-98%	Yes
Centre for Epidemiologic Studies Depression Scale (CES-D)		5-10 mins	Free	Sensitivity 60 % Specificity 90%	Yes
Edinburgh Post-partum Depression Scale (EPDS)	10 Questions Score = 0-30 Cut off score = 13	5-10 mins	Free	Sensitivity 59-100% Specificity 49-100%	
Patient Health Questionnaire—9 (PHQ- 9)	9 Questions Score = 0-27 Cut off score = 10	<5 mins	Free	Sensitivity 75% Specificity 90%	Yes
Patient Health Questionnaire—2 (PHQ- 2)	2 Items Score = 0-6 Cut off score = 3	<1 min	Free	Sensitivity 90% Specificity 70%	Yes (or by clinician)

Montgomery- Asberg	10 Items	15 mins	Free	Sensitivity 97%	No
Depression Rating Scale	Score = 0-60			Specificity 100%	
(MADRS)					
Post-partum depression	35 Items	5-10 mins	Cost to purchase the complete	Sensitivity 91-94%	Yes
Screening Scale (PDSS)	Score = 0-28		kit (25 auto score test forms	Specificity 72-98%	
	Cut off score = 9		and scoring manual)		
Zung Self-rating	20 Items	5-10 mins	Free	Sensitivity 45-79%	Yes
Depression Scale	Score = 20-80			Specificity 77-88%	
RAND-3 Question	3 Items	<1 minute	Free	Sensitivity	Yes
Screen				Specificity	

Diagnostic Tools for Depression:

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DSM V	Total 9 symptoms five or more symptoms during the same 2-week period and at least one of the symptoms should be either (1) depressed mood or (2) loss of interest or pleasure.	-	-	Sensitivity 100% Specificity 98%	No
ICD-10	Total 10 symptoms At least 4 should be present to diagnose depression	-	-	-	No
ICD -11	Total 10 symptoms Concurrent presence of at least five out of the ten symptoms which must occur most of the day, nearly everyday or for at-least 2 wks.	-	-	-	No
Hamilton Rating Scale for Depression (HAMD/HDRS)	21 items, but scoring is based on first 17 items Score = 0-54	20-30 minutes		Sensitivity 93% Specificity 98%	No
Mini International Neuropsychiatric Interview (MINI)	Total questions -6. A point is scored every time a patient answers yes to a question. In questions 2, 4 and 5, a point is scored if the patient answers yes to either a or b. If the total number of points is equal to or greater than 3, the patient presents a probable (hypo-) manic episode with depressive features.	15 mins	Paid	Sensitivity 75-92% Specificity 90-99%	

DSM-V vs ICD-10 vs ICD-11

According to DSM-V, out of total nine items, presence of five or more symptoms during the same 2-week period and at least one of the symptoms have to be either (a) depressed mood or (b) loss of interest or pleasure in contrary to the ICD-10, the threshold for the diagnosis of depression is the same as in the DSM, in ICD 11 i.e., at least five depressive symptoms. However, according to the ICD-11, at least five symptoms out of a list of ten symptoms are required for depression diagnosis where-as only nine symptoms are there in the DSM-5. The main critical point of DSM-V is the unhealthy influence of the pharmaceutical industry in the revision process and the overmedicalization of normal behavior or mood patterns. The ICD 11 also differs from the DSM 5 in for the classification of "Secondary Mental or Behavioural Syndromes Associated with Disorders or Diseases Classified Elsewhere". It refers to Mental Disorders due to some other medical Condition in the DSM 5." In the ICD-11, a depressive episode is defined as simultaneous presence of at least five out of a list of ten symptoms, which must occur most of the day, nearly every day, for at least 2 weeks. One symptom must have to be a depressed mood or markedly diminished interest or pleasure in activities. The major difference between ICD-11 and ICD-10 in chapter organization is the exclusion of a separate disorder grouping for "mental and behavioral disorders with onset during childhood and adolescence".(20-24)

MINI International Neuropsychiatric Interview:

The MINI tool was formulated as a brief structured diagnostic interview to diagnose major psychiatric disorders. Psychiatrists and clinicians of the United States and Europe develop it. It has good validity and reliability compared to other diagnostic tools. But administration time of MINI is shorter compared to other diagnostic tools. Median administration time of the tool 15 mins. A trained Clinician can administer the questionnaire. The MINI focuses mainly on current and lifetime diagnostic skills where it is clinically relevant to the present.(25) The kappa coefficient, sensitivity and specificity are suitable for all diagnosis except for 'generalized anxiety disorder' (kappa = 0.36), 'agoraphobia" (sensitivity = 0.59) and 'bulimia" (kappa = 0.53). The MINI tool is highly accurate for screening depression in psychiatric and primary care. The standardized MINI assesses the 17 most common disorders in mental health. MINI is compatible with DSM-III, IV and ICD-10 diagnostic criteria. There are four different versions of MINI- "Standard MINI", 'MINI for psychotic disorder studies', "MINI for suicidality disorders, and "MINI Screen". (26)

Hamilton Rating Scale for Depression – "Hamilton Rating Scale for Depression" or "Hamilton Depression Rating Scale (HDRS)", is also known as HAM-D.(27) It is a multiple items questionnaire to diagnose depression. It was initially discovered by Max Hamilton in 1960 and revised in 1966, 1967, 1969 & 1980 consecutively.(28) The original version consists of 17 items and 4 other questions were not added to the score as they are only used for additional clinical information.(8) Each

of the questions is scored on a 3 or 5-point scale. 10-13 = mild depression, 14-17 = mild to moderate depression, >17 = moderate to severe depression. The sensitivity of this scale is 93%, but the specificity is very high, around 98%. Trained clinicians can only administer it.(7)

Detection of Post-partum Depression & Different Guidelines:

United States Preventive Services Task Force (USPSTF) recommends screening, accurate diagnosis, effective treatment & appropriate follow-up of pregnant and post-partum women being included in the general adult population. They have suggested that clinicians should provide or prefer pregnant and post-partum mothers who are at increased risk of perinatal depression for counselling interventions (Grade B).(29) American Congress of Obstetrician and Gynaecologist Committee on Obstetric Practice (ACOG) recommends the clinicians to screen the women at least once during the perinatal period to assess the symptomatology of depression and anxiety. (8) American Academy of Paediatrics (AAP) has also suggested that screening of the mothers has proven successful initiative for well child care schedule. The mothers should be informed about psycho-social issues that can happen in the ante-natal & post-natal period. Although if a patient is screened for mental health symptoms during the pregnancy, another assessment should be carried out during the subsequent post-partum visit. Mothers with post-partum blues should be closely monitored before the worsening of symptoms. During the post-partum visit at 4-6 weeks post-partum, mother should be reviewed for the significant symptoms of depression and assessed for any intervention if needed.(30) American Academy of Family Physicians has not put forward any specific recommendations for post-partum depression, general recommendations for screening are same as that of USPSTF. In contrary to the other organizations, American College of Nurse Midwives recommends universal screening, treatment & referral for depression among mothers as an integral part of routine primary healthcare.(31) United Kingdom National Institute for Health and Clinical Excellence has suggested to screen the woman's' at their very first contact with their primary care physician with two questions "feeling down, depressed or hopeless" and "little interest or pleasure in doing things". If any of the answers come yes, a third question should be asked about the need for help. Despite the widespread recognition of the burden of post-partum depression, a study has found that only 8% of the paediatricians asked routinely the mothers about any depressive symptoms & surprisingly none of the clinicians reported using any standardized screening questionnaire.(32)

DISCUSSION:

With the advancement of treatment, various drugs have also been discovered to treat post-partum depression. The "Food and Drug Administration (FDA") has also approved a drug named brexanolone to treat postpartum depression in the mothers. Brexanolone is administered by a doctor or nurse through an IV for about 2½ days admitting the patient in Hospital. ECT can also be used in extreme

conditions.(5) The NICHD (National Institute of Child Health and Human Development) in collaboration with organizations like the World Health Organization involved in conducting research on the psychosocial development of children with part of their efforts going towards the support of mothers' health.(33) The Infant and Early Childhood Mental Health Consultation (IECMH) centre is a related technical assistance program that utilizes evidence-based treatments services in order to address issues of PPD.(34) HOPE Group is another postpartum adjustment support group providing both virtual and in-person options which is led by maternal health nurses and a peer who has experienced perinatal mood and anxiety disorder. (35) If postpartum depression is not treated timely it can lead to dangerous consequences - higher risk of attempting suicide, the mother may not be able to fulfil the needs of the child. It can cause behaviour problem, mother-child bonding impairment, delay in language development. So, the mother who are at higher risk of post-partum depression likepast history of postpartum depression, any other Depression not related to pregnancy, Severe premenstrual syndrome (PMS), stressful marriage-life or relationship issues, lonely environment, Stressful life events - during pregnancy or after childbirth like severe illness during pregnancy, preterm birth, or post-delivery complications should be screened early with the help of various screening tools. Any mother coming screen positive for depression should be referred to the psychiatrist for confirmation of diagnosis with the help of the diagnostic tools. Early screening of post-partum depression and secondary prevention for PPD is beneficial not only for the mother but also for the baby. As more mothers will be accurately identified as having symptoms of PPD, the requirement for secondary and tertiary prevention and treatment resources will simultaneously increase. There should be a multidisciplinary approach involving obstetricians, family physicians, paediatricians, and mental health professionals will increase the outcome.(35)

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