Section: Microbiology

Research

OBSTETRIC AND MENTAL HEALTH OUTCOME IN ADOLESCENT PREGNANCY: A HOSPITAL BASED OBSERVATIONAL STUDY

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Abstract

Background: Adolescents are defined as people aged between 10 and 19 years according to the World Health Organization (WHO). Adolescent childbearing is a remarkably common occurrence in India, seen across all geographic, racial, ethnic, and socioeconomic groups. Additionally, the prevalence and implications of postpartum depression have garnered significant attention in the fields of clinical medicine and public health, leading to advocacy for maternal mental health screening during the infant's well child visits. **Materials and Methods:** This is a Observational study assessing depression psychosocial risk factors and Obstetric outcome in pregnant adolescents attending to Department of Obstetrics and Gynaecology PRMMCH, from September 2021- September 2022. Adolescent pregnancy of age 10 - 19 year attended OBGY OPD and admitted to Labour Room during the study period were included. Participants completed the researcher-designed demographic such as age, Education, Socioeconomic Status (SES) middle, Low, marriage status, Sexual transmitted disease, Parity and psychosocial risk factors questionnaire and PHQ-9 Kiswahili version. There Obstetric outcome was measured. **Result:** In our study Mean age at the time of delivery 18.1±0.6. In our study, most of the patients had anaemia 43 (71.6%) followed by Hypothyroidism 11 (18.3%), Pregnancy-induced hypertension were 9 (15%), Fetal growth restriction 5 (8.3%), Intrahepatic cholestasis of pregnancy 4 (6.6%) and Thrombocytopenia 3 (5.0%). Distribution of Depression Severity on PHQ-9: No Depression (0-4) were 11 (18.3%) followed by Mild Depression (5-9): 16 (26.6%), Moderate Depression (10-14): 13 (21.6%), Moderately Depression (15-19): 11 (18.3%) and Severe Depression (20-27): 9 (15.0%). **Conclusion:** Most evidence-based perinatal depression interventions in Lower and Middle income Countries (LMICs) are focused on adults and there exists very limited understanding of depression related risk factors in depressed pregnant or parenting adolescents. Although a body of epidemiological research in adolescent pregnancies in LMIC context have established mental health problems to be dominant, for good intervention research vulnerable population specific risk factors need to be ascertained and our study fills in that gap in depression prevalence estimate and associated risk factors in pregnant adolescents.

INTRODUCTION

Adolescents are defined as people aged between 10 and 19 years according to the World Health Organization (WHO).[1] Adolescent childbearing is a remarkably common occurrence in India, seen across all geographic, racial, ethnic, and socioeconomic groups. Medical providers often struggle to provide comprehensive care to young families, many of whom face a wide variety of barriers to optimal health and development.[2] Because teen mothers often face significant environmental and psychosocial stressors and are at risk for a number of mental health concerns that can affect them and their children, primary care for young mothers and their children must include attention to these problems. Indeed, in recent years there has been a growing call for pediatric primary

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care providers to become more engaged in the early detection and treatment of mental health concerns in the primary care setting, and models of integration have been developed and disseminated.[3]

Additionally, the prevalence and implications of postpartum depression have garnered significant attention in the fields of clinical medicine and public health, leading to advocacy for maternal mental health screening during the infant's well child visits.[3] This increasing attention to the need for mental health awareness, assessment, and management within primary care is very relevant for clinicians caring for adolescent mothers and has driven the development of this study.[4]

In addition to navigating the developmental tasks of adolescence, teenage mothers must also adjust to the responsibilities and demands of parenting, often in the context of economic and social disadvantage. Such stressors may contribute to a range of mental health problems that can adversely affect the functioning and parenting behavior of adolescent mothers and increase the risk of behavioral problems in their offspring.[5]

Among adolescent mothers, rates of depression are estimated to be between 16% and 44%. In contrast, the lifetime prevalence of major depression among nonpregnant adolescents and adult women is between 5% and 20%.[5] Depression symptoms among young mothers are also more likely to persist well after the birth of their child.[6] Although there are few prospective, longitudinal studies on the long-term mental health outcomes of adolescent mothers, 1 study of African American adult women who became mothers during adolescence found a twofold increase in depression 20 years after the birth of their first child.[7]

Teen mothers are also at risk for developing symptoms of posttraumatic stress disorder, mainly because of their high risk for community and interpersonal violence exposure.[8] One study found that on average, teenage mothers had experienced >5 traumatic events, including physical attacks by a partner, neglect, abuse by a parent, incarceration, and traumatic loss. Almost 50% of the adolescent parents in this study met full criteria for posttraumatic stress disorder.[9] Compared with adult mothers, adolescent mothers are 2 to 3 times more likely to be victimized by their partner, the father of their child, or a family member.[10]

MATERIALS AND METHODS

This is an Observational study assessing depression and associated psychosocial risk factors and Obstetric outcome in pregnant adolescents attending at Department of Obstetrics and gynecology PRMMCH, from September 2021- September 2022.

Inclusion Criteria

Adolescent pregnancy of age 10 - 19 year attended OBGY OPD and admitted to Labour Room during the study period.

Exclusion Criteria

Those who have not given consent were excluded from study.

Study Procedures

Participants completed the researcher-designed demographic such as age, Education, Socioeconomic Status (SES) middle /Low, Married /unmarried, Sexual transmitted disease, Parity and psychosocial risk factors questionnaire and PHQ-9 Kiswahili version. There Obstetric outcome was measured.

The study team discussed the data collection, Obstetric care such as number of antenatal care, Cognitive Behavior Therapy (CBT) received or not received. The participants recording high scores with a cut off of 15+ on the PHQ-9. Within this inquiry, we had a nested small qualitative study exploring participants' interpersonal, practical and cultural challenges and barriers to accessing depression and general mental health care.

Measures

Perinatal Depression Screening Tool

We used Kiswahili translated version of Edinburgh Postnatal Depression Screen (EPDS).[11] EPDS has demonstrated acceptable clinical utility as a screening scale in India and SSA. To assess perinatal depression including carrying out a formal Kiswahili translation of EPDS and cross-cultural emic-etic issues in translation and it was this version of the tool that was administered orally to the participants.[12] The lead researcher first gave the socio-demographic tool followed by EPDS. A cut off of 13+ confirmed presence of peri-partum depression. A cut-off of 13 is recommended for probable major depression and a cut-off of 10 is recommended for probable minor depression.[13] We used this instrument as a primary screener and to enhance comparability with other studies carried out in India.

Depression Diagnosis and Severity Assessment

We used PHQ-9 as our main outcome variable (> 15+) and also to identify severity, the higher scores are an indication of greater severity depression.

Due to the peripartum nature of depression in adolescents, we used EPDS as a screener to identify likelihood of depression. We reported scores on PHQ- 9 for those who tested positive in EPDS primarily for test-retest reliability and to categorize depression severity.[14] The collection of data from these tools ensured internal validity through triangulation in evaluation of data and findings while external validity was obtained to the extent that these study findings can be generalized to other

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populations. During assessments, we targeted participants whose gestation period was 4 months and above and sought clarification on the duration of somatic symptoms of depression from normal pregnancy related symptoms. Participants who scored above >=15+ on PHQ-9 (i.e. from moderately severe category onwards) were considered to have symptoms of depression and were therefore referred for specialized care.

Obstetric outcome was measured interms of maternal morbidity like Anemia, Pregnancy induced Hypertension, Gestational Diabetes, Hypothyroidism, Intrahepatic cholestasis of pregnancy, cesarean section, Fetal growth restriction, Maternal Mortality and Postpartum depression.

Statistical Analysis

SPSS version 25 was used in data analysis. The association between depression and its psychosocial correlates was determined in two ways. Firstly, we divided our sample into two groups (depressed and non-depressed according to PHQ-9 cut-off score 15+ or more) and compared these groups using chi-square test. Secondly, we assessed each potential correlates with the PHQ-9 score using independent samples t-test and ANOVA. Prior to running the analysis, all assumptions were checked including univariate/multivariate normality, linearity, homoscedasticity and diagnostic testing for multi-collinearity and independence of errors. After checking for univariate normality, the PHQ depression scores was transformed by a two-step approach using inverse distribution function (IDF) using maximum likelihood estimator (MLE) in which we retained the original series mean and standard deviation to improve the interpretation of results. The level of statistical significance was kept at $P < 0.05$, all tests were two sided.

RESULTS

In our study Mean age at the time of delivery 18.1±0.6 in [Table 1].

Table 1: Mean age at the time of delivery

Mean age at the time of delivery	18.1±0.6

Table 2: Distribution of Marital Status

Marital Status	Frequency	Percentage
Married	53	90.1
Unmarried	07	9.9

Table 3: Distribution of Parity

Parity	Frequency	Percentage
Primigravida	49	81.6
Multigravida	11	18.3

Table 4: Distribution of Socio-economic status

Socio economic status	Frequency	Percentage
Lower	11	18.3
Upper lower	26	43.3
Lower middle	13	21.6
Upper middle	9	15.0
Upper	1	1.6

Table 5: Distribution of Risk factors of adolescent pregnancy

Risk factors of adolescent pregnancy	Frequency	Percentage
Early marriage	53	88.8
Family pressure	41	68.3
School dropout	21	35.0
Gender Based Violence (GBV) during Pregnancy	7	11.6

Table 6: Distribution of Pregnancy related complications

Pregnancy related complications	Frequency	Percentage
Pregnancy-induced hypertension	9	15
Gestational diabetes	0	0
Hypothyroidism	11	18.3
Anaemia	43	71.6
Thrombocytopenia	3	5.0
Intrahepatic cholestasis of pregnancy	4	6.6
Fetal growth restriction	5	8.3
Maternal mortality	4	6.6

In our study, most of the patients had anaemia 43 (71.6%) followed by Hypothyroidism 11 (18.3%), Pregnancy-induced hypertension were 9 (15%), Fetal growth restriction 5 (8.3%), Intrahepatic cholestasis of pregnancy 4 (6.6%), Thrombocytopenia 3 (5.0%) and Maternal mortality 4 (6.6%) in [Table 6].

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Table 7: Distribution of Pregnancy outcome

Pregnancy outcome	Frequency	Percentage
Abortion	7	11.6
Preterm delivery	19	23.3
Term delivery	34	56.6

Table 8: Distribution of Mode of delivery

Mode of delivery	Frequency	Percentage
Vaginal delivery	47	78.3
Caesarean section	13	21.6

Table 9: Distribution of Depression Severity on PHQ-9.

Depression Severity	Frequency	Percentage
No Depression (0-4)	11	18.3
Mild Depression (5-9)	16	26.6
Moderate Depression (10-14)	13	21.6
Moderately Depression (15-19)	11	18.3
Severe Depression (20-27)	9	15.0

In [Table 9], Distribution of Depression Severity on PHQ-9: No Depression (0-4) were 11 (18.3%) followed by Mild Depression (5-9): 16 (26.6%), Moderate Depression (10-14): 13 (21.6%), Moderately Depression (15-19): 11 (18.3%) and Severe Depression (20-27): 9 (15.0%)

DISCUSSION

The direction of causality in the relationship between teen parenthood and mental health problems is complex and not elucidated by existing research. Adolescent mothers are more likely to be poor and disproportionately Indian, live in low-income communities, be born to parents with low educational and employment attainment, have a history of child abuse, reside in chaotic home environments characterized by poor interpersonal relationships, and have limited social support networks.[15] These are also factors that have been strongly and independently associated with adverse mental health outcomes.[16] Additionally, the stressors of caring for an infant may exacerbate the psychological distress experienced by young mothers. Thus, it is unclear whether the stressors and experiences of early childbearing lead to mental health problems or whether the mental health outcomes among adolescent mothers are a result of the adverse life circumstances that often precede and predict teen pregnancy.[17]

In studies examining the influence of sociodemographic factors on outcomes, the association between early parenting and adverse mental health was either diminished or no longer significant once potentially confounding factors such as socioeconomic status, parental education, and family functioning (eg, abuse history, parental mental health history, single-parent household) were controlled.[18] It is important to note that these studies were conducted with aggregated data, and although there is a significantly greater risk for mental health difficulties among adolescent mothers, not all adolescent mothers have mental health problems. Additional research is needed to explain these variations in mental health outcomes among teenage mothers.[19]

Abundant research links maternal depression and other forms of distress to impairments in parenting and to problem behavior in children.[20] The impact of maternal mental health on parenting and child behavior is often understood through the lens of attachment theory,40 which posits that infants develop expectations about the availability and responsiveness of their caregivers based on repeated experiences with them. Numerous studies have found an association between maternal depression and insecure attachment in young children.[21,22] Because adolescent mothers, more often than adult mothers, may lack the cognitive or social–emotional resources to provide the sensitive and responsive parenting necessary for a secure attachment, pediatricians working with adolescent mothers should attempt to assess and foster attachment behaviors in the context of well child care and anticipatory guidance.[22]

Specific to mental health treatment, greater pessimism about antidepressant and psychotherapeutic efficacy, preference for care by a professional of the same race or ethnicity, greater value of spiritual factors, and greater concern for stigma are also salient factors.[23]

Although adolescent childbearing is associated with an elevated risk of adverse mental health outcomes, there is significant variability in outcomes for individual families. The majority of teen mothers and their children can have positive outcomes equal to those of their peers who bear children later, particularly when they are provided with strong social and functional supports. Therefore, primary care and other interventions for adolescent families should maintain a strength-based focus.[24]

CONCLUSION

Most evidence-based perinatal depression interventions in LMICs are focused on adults and there exists very limited understanding of depression related risk factors in depressed pregnant

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or parenting adolescents. Although a body of epidemiological research in adolescent pregnancies in LMIC context have established mental health problems to be dominant, for good intervention research vulnerable population specific risk factors need to be ascertained and our study fills in that gap in depression prevalence estimate and associated risk factors in pregnant adolescents. We hope our study would provide pointers to critical factors that a depression intervention could encompass.

WHO's Mental Health Treatment Gap Action Program (known as WHO mhGAP) argues for adoption of greater task-shifting models, low intensity and culturally adapted psychosocial models that would seek to inform mental health services implementation in resource constraint contexts. For pregnant adolescents in India, we urgently need these components to be integrated in primary health care settings where we are likely to find young girls struggling with enormous social adversities and mental health challenges.

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