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INVESTIGATING THE PREVALENCE OF SELF-REPORTED MATERNAL COMPLICATIONS AMONG RURAL WOMEN

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ABSTRACT

Background: Pakistan ranks among the South Asian nations with the highest rate of maternal mortality, especially in the rural areas. These rural women face maternal complications, often worsened by delayed care; hence, understanding their nature and prevalence is vital for targeted interventions.
Objectives: To determine the prevalence of self reported maternal complications among rural women and to prioritize targeted interventions to minimize the prevalence of maternal complications.
Material and method: Descriptive cross-sectional study was conducted at Gynecology and Obstetrics Outpatient Department (OPD) healthcare centers in the Mirpurkhas district targeting rural populations. Data was collected through a questionnaire, which was further divided in sub section from 271 participants. Socio-demographic characteristics, personal information and self-reported complications mothers were analyzed.
Results: Study showed that most of women are from rural areas and the mean age of participants was 28 with standard deviation ± of 05.63% of participants were illiterate, bleeding was found in 60.1% of participants and 56.5% of participants had infection. Others complications such as hypertension, preterm labor and placental issues also found in low majority in current study.
CONCLUSION: The prevalence of bleeding during and after pregnancy among rural women was very high. The study also highlighted that the infection and hypertension as self-reported complication.

INTRODUCTION

Maternal mortality remains a critical public health issue in Pakistan, with a Maternal Mortality Ratio (MMR) of 186 deaths per 100,000 live births, and significantly higher rates reported in rural areas[1]. Although Pakistan has pledged commitment to the Sustainable Development Goals (SDGs), particularly SGDs 3.1 to reduce maternal mortality, its progress remains hindered by deep-rooted challenges such as poverty, gender inequality, insufficient healthcare infrastructure, limited access to skilled care, predominantly in rural communities[2-4].

Globally, Asia carries the heaviest maternal mortality burden, with 94% of maternal deaths occurring in developing nations like Pakistan[5,6]. According to the Pakistan Maternal Mortality Survey (2019), urban-rural disparities are stark: while 43% of urban women deliver in healthcare facilities, 74% of rural women still give birth at home, increasing their vulnerability to complications and poor outcomes[7,8].

Rural women often experience maternal complications such as hemorrhage, preeclampsia, gestational diabetes, infections, and hypertension, which are often worsened by delayed care-seeking, cultural norms, and inadequate antenatal and emergency obstetric care[9,10]. Chronic conditions like gestational diabetes and hypertension also contribute to maternal morbidity and long-term cardiovascular risks[10-13]. Hemorrhage alone accounts for over 30% of maternal deaths worldwide and is particularly fatal in underserved settings[14-15].

Social determinants such as low socioeconomic status, poor education, limited transportation, and geographic isolation are consistently linked to high maternal complication rates in rural areas[16,17]. Identifying the types and prevalence of these self-reported complications is essential for uncovering gaps in maternal health services and for guiding targeted, context-appropriate interventions. This study aims to assess the prevalence and patterns of self-reported maternal complications among women in rural Pakistan, with the goal of informing policies and practices that improve maternal health outcomes in underserved settings.

METHODOLOGY

Descriptive cross-sectional study was conducted at the Gynecology and Obstetrics Outpatient Department (OPD) of healthcare centers located at Mirpurkhas district Sindh Pakistan, targeting rural populations.. The OPD serves women from various socioeconomic backgrounds and provides routine obstetric care. Hence, the setting represents an appropriate site for investigating self-reported maternal complications. Data was collected using a structured, interviewer-administered questionnaire divided into two parts:

Part I: Demographic and Socioeconomic Information which include participant's age, education, household income and number of pregnancies.

Part II: Focused on self-reported maternal complications experienced during the postnatal period. The tool used was a pre-validated questionnaire with demonstrated reliability (Cronbach's alpha > 0.70) in prior studies. It included common complications such as Bleeding, Gestational diabetes, Hypertension, Infections, and others Relevant to maternal morbidity. A non-probability convenience sampling method was used. Participants were selected from women attending the OPD during the study period who met the inclusion criteria. Data were entered and analyzed using SPSS version 23.

Sample Size Calculation

The sample size was calculated using the following parameters:

- Confidence level: 95%
- The margin of error: 5%
- The prevalence 20%.
- **Sample Size formula:** n=z2(p)(1-p)/e2
- n=246

- Non Respondent 10%
- 246+24.6 (10%) for Non Respondents = 271

Ethical Considerations

The study protocol was reviewed and approved by the Ethical Review Committee of Liaquat University of Medical & Health Sciences (LUMHS), Jamshoro. Written or thumb-printed informed consent was obtained from all participants. All personal information was kept confidential and used solely for research purposes. The study adhered strictly to institutional ethical standards and research protocols.

RESULTS

DEMOGRAPHIC VARIABLES

Table No.01: AGE

N=271

AGE GROUPS	FREQUENCY	PERCENT	MEAN	SD ±
18-27	67	24.7%	**28.0**	**± 5**
28-37	154	56.8%		
38-47	32	11.8%		
48-57	18	6.6%		
Total	271	100.0%		

The study Participants were divided into four age groups with equal intervals, 67 (24.7%) of participants were from 18-27 years of age, 154 (56.8%) participants were from 28-37 years of age, 32 (11.8%) participants were from 38-47 years and 18 (6.6%) participants from 48-57 years of age. The mean age of participants was 28 with standard deviation ± of 05 as shown in Table: No.01.

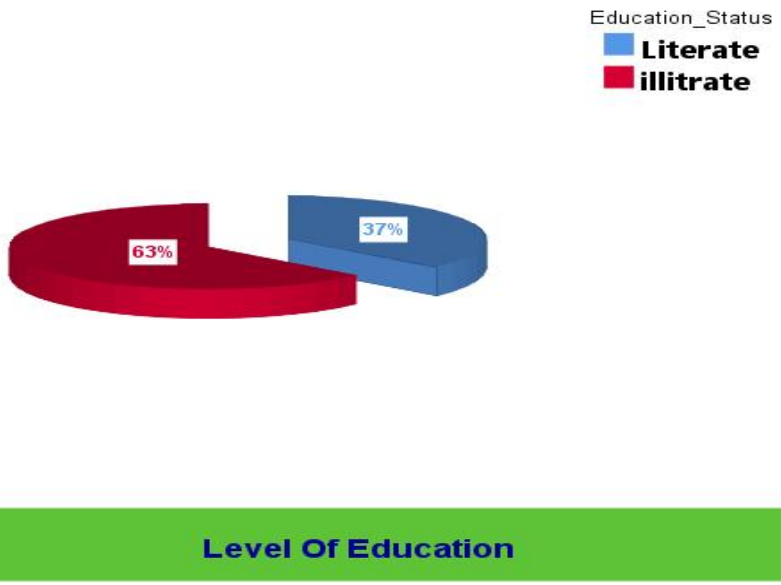
Table: No.02

N=271

NUMBER OF PREGNANCIES		
Gravidity	**Frequency**	**Percent**
One	28	10.3%
Two	79	29.2%
Three	96	35.4%
Four	53	19.6%
Five	10	3.7%
Six	5	1.8%
Total	271	100.0%

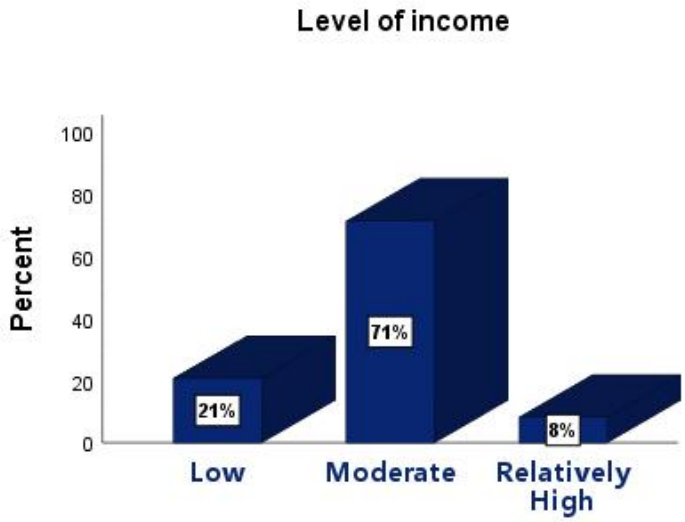
Participants were asked about number of pregnancies in which majority of participants three numbers of pregnancies (35.4%) and 29.2% of participants had two number pregnancies. Other participants showed a less number of pregnancies such as 19.6% had 04, 10.3% had one, 03.7% had five and only 01.8% of participants had six numbers of pregnancies shown in table: No.02.

GRAPH NO.01



Level of education of Participants were divided into two categories named as literate and illiterate, 63% of participants were illiterate where 37% of participants were literate as shown in pie chart.

GRAPH NO.02



Bar graph shows that the participants were divided into three categories according to their level of income, only 8% of participants had relatively high level of income, low level of income had the majority of 21% and moderate level of income was high in participants having percentage of 71% as shown in bar chart.

MATERNAL COMPLICATIONS

TABLE: NO.03: BLEEDING ISSUES

N=271

Did You Experience Bleeding?	Frequency	Percent
Yes	163	60.1%
No	108	39.9%
Total	271	100.0%

Participants were asked regarding bleeding issues in which 60.1% of participants complained regarding bleeding, it means the prevalence of bleeding complication was high in rural women as shown in table: No.04

TABLE: NO.04: HYPERTENSION

N=271

Have you been diagnosed with hypertension during pregnancy?	Frequency	Percent
Yes	43	15.9%
No	228	84.1%
Total	271	100.0%

Participants were asked about self reported complain regarding hypertension in which only 15.9% of participants responded as yes and 84.1% responded that they had no any history of hypertension during their pregnancy as shown in table no.05.

TABLE: NO.05: PRETERM LABOR

N=271

Were you diagnosed with preterm labor during this pregnancy?	Frequency	Percent
Yes	62	22.9%
No	209	77.1%
Total	271	100.0%

Prevalence of preterm labor was very low in participants as shown in table no.06, when participants were asked about whether they experienced with preterm labor in which only 22.9% of participants responded as yes and 77.1% of participants responded as No as shown in table.

TABLE: NO.06: INFECTION

N=271

Did you experience infection during pregnancy?	Frequency	Percent
Yes	153	56.5%
No	118	43.5%
Total	271	100.0%

Table no. 07 showed that the majority of participants 56.5% was found having the history of infection and 43.5% of participants responded as No, because they did not have any history of infection.

TABLE: NO.07: PLACENTAL ISSUES

N=271

Were you diagnosed placenta previa?	Frequency	Percent
Yes	21	7.7%
No	250	92.3%
Total	271	100.0%
Were you diagnosed placenta abruption?	**Frequency**	**Percent**
Yes	25	9.2%
No	246	90.8%
Total	271	100.0%

Regarding placental issues, participants asked for placenta previa in which only 7.7% of participants had history of placenta previa, participants were also asked about placenta abruption where only 9.2% of participants had placenta abruption. It showed that a very low prevalence was found regarding placental issue in participants.

DISCUSSION

This study explored the prevalence and outcomes of self-reported maternal complications among rural women aged 18 to 49 years in the Mirpurkhas district. The findings reveal a high frequency of maternal complications, particularly bleeding and infections, with substantial associations with adverse outcomes such as preterm birth, low birth weight, stillbirth, and abortion. These results highlight critical gaps in maternal healthcare access and education in rural settings.

The mean age of participants was 28 ± 5 years, with the majority (56.8%) falling in the 28–37 years age group. Although not classified as advanced maternal age, this group still faces elevated risks due to limited access to antenatal care. These results align with previous literature showing that women aged 35 and older are at increased risk of maternal and perinatal complications, especially in multiple gestations[18].

The obstetric history of the participants showed that many had experienced multiple pregnancies, with high complication rates observed among women reporting two to five pregnancies. This is consistent with prior research demonstrating that high gravidity increases the risk of maternal complications, including prematurity, anemia, and obstetric hemorrhage[19].

Education emerged as a significant determinant of maternal health. In this study, 63% of women were illiterate, and complications were more frequently reported in this group. This supports earlier

findings that health literacy is inversely related to pregnancy complications, such as pre-eclampsia, GDM, and preterm labor[20]. Improving maternal education could thus serve as a low-cost intervention to enhance pregnancy outcomes in rural areas.

The most prevalent complication in this study was bleeding (60.1%), a major cause of maternal morbidity and mortality. Bleeding, whether antepartum or postpartum, was significantly associated with adverse outcomes such as preterm delivery, intrauterine growth restriction (IUGR), and NICU admissions. These findings are supported by evidence linking early-pregnancy bleeding to placental abruption, PROM, and poor neonatal outcomes[21].

Although only 15.9% of women reported hypertension, it showed a statistically significant association with maternal outcomes. Hypertensive disorders of pregnancy are well-documented contributors to maternal morbidity and long-term cardiovascular disease, warranting early screening and continuous monitoring[22].

Preterm labor was reported by 22.9% of the participants and was significantly associated with poor neonatal outcomes. Literature supports that the etiology of preterm birth, rather than gestational age alone, plays a central role in maternal and infant health. Preterm birth is a leading cause of neonatal complications, and strategies must go beyond gestational monitoring to include preventive interventions[23, 24].

Infection during pregnancy, affecting 56.5% of participants, showed a strong correlation with abortion and other poor outcomes. Chronic infections—genital and systemic—have been linked to complications like PROM, recurrent pregnancy loss, and preterm delivery. Research suggests that up to 40% of preterm births may be associated with an abnormal vaginal microbiome, though more exploration is needed on the interaction between bacterial and viral infections[25].

Finally, complications related to placenta previa and placental abruption, though less common, were statistically associated with poor outcomes such as preterm birth, abortion, and stillbirth in this study. For example, none of the women with placenta previa had a healthy baby outcome, and abortion rates were disproportionately high in women with placental abruption. These findings are consistent with literature citing placental abnormalities as a risk factor for severe maternal and perinatal morbidity, but also suggest the need for further prospective studies to validate causal relationships[26, 27].

CONCLUSION

This study found a high prevalence of self-reported maternal complications among rural women, particularly bleeding (60.1%), infections (56.5%), and preterm labor (22.9%). These were significantly associated with adverse outcomes such as abortion, low birth weight, stillbirth, and preterm birth. Complications were more frequent among illiterate and low-income women, underscoring the impact of social determinants on maternal health. Notably, placenta previa and placental abruption were statistically associated with poor outcomes, warranting early detection and intervention.

RECOMMENDATIONS

- Enhance community-level antenatal care with early screening for bleeding, infections, and placental abnormalities.
- Promote maternal health literacy through education and engagement with community health workers.
- Improve referral and emergency care systems in rural areas.
- Prioritize rural maternal health in policy and resource allocation to support SDG 3.1 and 3.2.

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