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Understanding The Relationship Between Age of Mother and Health Indicators in Meghalaya, India

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ABSTRACT

Maternal health is an important determinant for the overall health scenario in an area. The World Health Organisation (WHO) defines maternal health as the health of women during pregnancy, childbirth, and the postnatal period. The age of the mother during her first pregnancy is significant, which affects the pregnancy outcomes. This study attempts to look at the association between maternal age and health issues in the West Khasi Hills district of Meghalaya, India. The area shows a high prevalence of teenage pregnancies, which is reported at 7.2% of women who have had a baby by the age of 18, which is above the national average. The study emphasises the issue of the age of the mother and how it plays into fertility rate, institutional delivery, anaemia, hypertension, and pregnancy outcomes. Overall, we see that the issue at hand is the connection between a mother's age and health, which we put forth as a key issue related to the high rate of teen pregnancy and also improving upon the health of mothers and their children in the region.

***Keywords*:** maternal health, teenage pregnancy, correlation, anaemia

INTRODUCTION

A healthy society is one in which women and adolescent girls, newborns and children survive and thrive [1]. When referring to maternal health, age of mother plays a significant role in deciding the number of children she is capable of bearing as well as the health of both mother and child.is important in determining the health of both the mother and child as well as the number of children a woman can bear. Teenage pregnancy is when a woman under 20 gets pregnant. It usually refers to teens between the ages of 15-19. But it can include girls as young as 10. It's also called teen pregnancy or adolescent pregnancy [2]. According to Esienumoh et al. [3], childbearing generally refers to the normal yet complex physiological process that occurs in the lives of mature female species through which offspring are reproduced. Early initiation of childbearing leads to an increase in total fertility rate and population growth. It has been linked with both maternal and child morbidity and mortality [4]. Females who start childbearing at a young age, below the age of 18 years or above 40 years, have greater chances of having pregnancy-related complications [5].

The prevalence of adolescent mothers is a pressing issue, with instances of women beginning childbearing as early as 16 years of age. The onset of early childbearing or teenage pregnancies can have detrimental effects on both a woman's health and her educational and occupational pursuits. On a global scale in the year 2022, an estimated 13% of adolescent females and young women give birth prior to turning 18. Particularly, young girls in their early stages of adolescence encounter heightened vulnerability to the health implications related to pregnancy and childbirth, as their

bodies may not be adequately developed [6]. Adolescent pregnancy is a global phenomenon with clearly known causes and serious health, social and economic consequences to individuals, families and communities.

According to the World Health Organisation, every year around 12 million girls aged between 15 and 19 years give birth in developing countries. As of 2019, WHO had an estimated 21 million pregnancies each year, of which approximately 50% were unintended. Most of the pregnancies at these ages are outside marriages and likely to be underreported or concealed to avoid shame and stigmatisation [7]. Preventing pregnancy among adolescents and pregnancy-related mortality and morbidity are foundational to achieving positive health outcomes across the life course and imperative for achieving the Sustainable Development Goals (SDGs) related to maternal and newborn health. World Health Organisation report, adolescents aged 15-19 years in low- and middle-income countries (LMICs) and which resulted in an estimated 12 million births. Out of these, 55% of unintended pregnancies among adolescent girls aged 15–19 years end in abortions, which are often unsafe in LMICs. When girls have access to education, they are less likely to marry early. Thus, the higher the level of illiteracy among women aged 15-24, the higher the propensity to marry early. Furthermore, the percentage of women aged 20-24 who had married before age 15 tends to be higher in countries with a low proportion of girls completing primary education, and, according to surveys, the propensity of women to marry early is higher among women with no education or primary education than among those with secondary education. When societies value the education of girls, marriages tend to be delayed [8].

The prevalence of early marriage or teenage pregnancy affecting socio-economics is also one of the many health issues. Many studies associate early marriage with many health concerns, like the fertility rate and the pregnancy outcome of a woman. In sub-Saharan countries where child marriage is very high, the fertility rate is eight times more likely to have more than three children than countries with less prevalent child marriage [9]. Godha et al., in their studies about the associations between child marriage and reproductive health outcomes and service utilisation in South Asia, provide insight on the adverse effect of early marriage, which links with high fertility rate, adverse pregnancy outcome and also low access to contraception methods. In the Indian context, there exists a notable association with a high likelihood for child stunting and underweight, institutional deliveries among women, as well as high maternal mortality and morbidity rates. While there has been a decline in the prevalence of child marriage and early pregnancy throughout the nation, such practices remain significantly entrenched in various regions, particularly in rural areas [10].

The high teenage pregnancy in Meghalaya raises an alarm which is higher than the national average. According to the NFHS 2019-21 report, Meghalaya reported about 7.2% teenage pregnancy higher than national average of 6.8%. among the 13,242 eligible women that are report, 21.8% of the women began child bearing by the age of 19 years, about 11.8% at the age of 18 years and 5.2% before they reach 18 years of age [11]. The age of the mothers reflects the pregnancy outcome and the fertility rate in the state. The state fertility rate stands at 2.9 which above the replacement level and also one of the highest in the country. It has become a state of concern for many with high maternal morbidity and mortality in the state. Number of women face number of maternal health issues in which is associate it with the age of mother.

In this backdrop the present study was made to understand the teenage pregnancy in the area. the study aimed to understand the relationship between the age of a mother with the various health indicators to understand the health status in the area.

MATERIAL AND METHODOLOGY

West Khasi hill district of Meghalaya, India was selected for the present study and the data was collected from 706 number of respondents base through random sampling method. The respondents were purposely selected base on purposely sampling technique were women between the reproductive age of 15 to 49 with children under the age of 5 years.

The study was base of semi structure self-developed interview schedule. The interview consisted of question on socio-economic background and the health status of the respondents. The questions also include on the utilisation of health facilities of the respondents.

Spearman Correlation coefficient method was use to find the relationship between teenage pregnancy, institutional deliveries with other health indicators. Correlation is a statistical method used to assess a possible linear association between two continuous variables. *Spearman Correlation Coefficient* method was to calculate the correlation between various health indicators. It is calculated using the following formula:

$$r = \frac{\sum xy - \frac{\sum x \sum y}{n}}{\sqrt{\sum x^2 - \frac{(\sum x)^2}{n}} \times \sum y^2 - \frac{(\sum y)^2}{n}}$$

Strength of correlation	
High positive correlation (strong)	+0.50 to +1
Moderate positive corelation	+0.30 to +0.49
Low positive correlation (weak)	0 to +0.29
No correlation	0
Low negative correlation (weak)	0 to -0.29
Moderate negative corelation	-0.30 to -0.49
High degree negative correlation (strong)	-0.50 to -1

A correlation coefficient of zero indicates that no linear relationship exists between two continuous variables, and a correlation coefficient of −1 or +1 indicates a perfect linear relationship. The strength of relationship can be anywhere between −1 and +1. The stronger the correlation, the closer the correlation coefficient comes to ±1. If the coefficient is a positive number, the variables are directly related (i.e., as the value of one variable goes up, the value of the other also tends to do so). If, on the other hand, the coefficient is a negative number, the variables are inversely related (i.e., as the value of one variable goes up, the value of the other tends to go down) [12, 13].

RESULTS

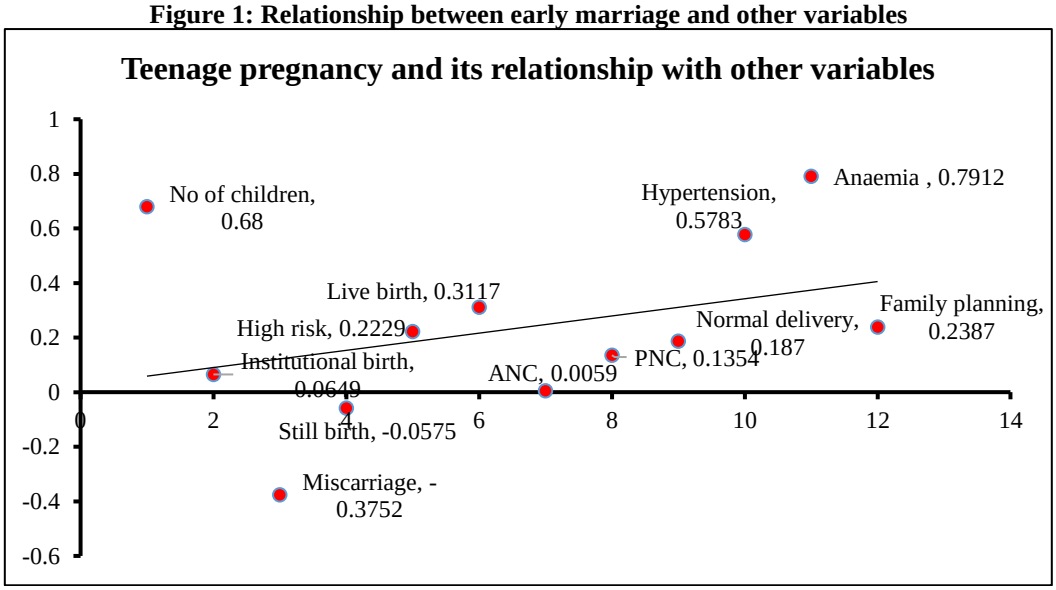
The research indicates a robust correlation between teenage pregnancies and the number of children a woman bears, with a statistical correlation coefficient of 0.68 (Table 1), indicating a strong positive correlation. The high fertility rate in the region is associated with early marriage, that surpasses the national average. The proportion of women possessing access to contraceptive methods is notably low, and the adoption of family planning practices is insufficient, as evidenced by the considerable family sizes observed in the area. Approximately 28.37% of women start childbearing during their adolescent years and even prior to reaching the age of 18, which raises considerable concerns. A weak positive correlation, calculated at 0.2387, concerning the number of individuals who adopt in family planning. The area has very low access to modern contraceptive methods on average and the number of teenagers who practice family planning is very low.

Table 1: Strength of correlation between teenage pregnancy with other variables and their strength of correlation

Correlation between Teenage Pregnancy with other variables		
Indicators	**Correlation (Spearman)**	**Strength of correlation**
Miscarriage	-0.3752	Moderate negative corelation
Still birth	-0.0575	Low negative correlation (weak)
ANC	0.0059	Low positive correlation (weak)
Institutional birth	0.0649	
PNC	0.1354	
Normal delivery	0.187	
High risk	0.2229	
Family Planning	0.2387	
Live birth	0.3117	Moderate positive corelation
Hypertension	0.5783	High correlation
No of children	0.68	
Anaemia	0.7912	

Source: Calculate by researcher

Figure 1: Relationship between early marriage and other variables



Source: Calculated by the researcher

Adequate nutritional iron intake and appropriate intervention during antenatal care (ANC) can address the causes of anaemia among teenage mothers [14]. However, the result indicates no relationship between the two variables; the number of anaemic teenage mothers has no relation with ANC coverage, which is high. Regarding the relationship with post-natal care coverage (PNC), the result shows a weak correlation with 0.1354, which indicates a weak positive correlation, and it has almost nothing to do with teenage pregnancy. Other than the age of the mother, the health of a child and other factors influenced PNC visits among the locals. Among the indicators, the correlation between teenage pregnancy and the number of women who suffer from anaemia suggests a strong positive relationship with a correlation of 0.7912. Early childbearing is strongly associated with a high probability of hypertension during pregnancy. With a correlation of 0.5783, it suggests a strong positive correlation between teenage pregnancy and hypertension. The added risk of hypertension due to the teenage pregnancy link with later-life hypertension and health outcomes among women [15].

There exists a positive correlation between teenage pregnancy and the number of live births; however, the study reveals a correlation coefficient of only 0.3117, indicating a weak association, including high-risk pregnancies. Women classified as

experiencing high-risk pregnancies predominantly belong to the younger age group, yet the correlation remains tenuous, with a coefficient of only 0.2299, as high-risk pregnancies are also prevalent among older women aged 35 years and above. Conversely, the findings demonstrate a negative correlation between age and the incidence of miscarriages among women with -0.3752. Similarly, this negative correlation is evident in the context of the number of stillbirths, with a correlation of -0.0575. This implies that although the number of children, live births, and high-risk pregnancies exhibit positive correlations, the incidence of miscarriages and the number of still births are not significantly influenced by the mother's young age.

DISCUSSION

The economic, social, and political development and progress of any country depend on the healthy size of adolescents and children. As a result, the healthier the teenager is, the healthier the nation and future generations will be, thus need special attention [16]. The finding shows a weak correlation between all the variables (Figure 1). Aside from socio-economic factors, cultural practice also greatly influenced the status of health among pregnant women. Although socio-economic factors have been mentioned as an important deciding factor for health status. Accessibility and utilisation of health care facilities, or the distance from the health centre and the way people utilise the available health centre, influence health indicators like antenatal care, postnatal care, and institutional deliveries, as well as pregnancy outcomes like the number of live births and the number of wasted pregnancies. A first-time mother is more likely to use the health facilities than a mother with more than one child. However, indicators like the number of pregnant women who suffer from hypertension and anaemia are higher among teenagers.

Research shows that despite the overall prevalence of anaemia among pregnant women, pregnant adolescent girls face a double burden of health risk because they have increased nutrient demand to ensure their own growth/development, in addition to that of their growing foetuses [17,13]. The result further revealed that the area, characterised by a high prevalence of teenage mothers, also has a high incidence of anaemia, which indicates the relationship between these two. Maternal anaemia has multifactorial causes that negatively affect maternal and birth outcomes, but these are understudied among pregnant teenagers. While the prevalence of institutional births may be low in the area, other determinants contribute significantly to this reduced number beyond mere age considerations. The same principle applies to the prevalence of miscarriages; although the mother's age during pregnancy can result in a range of outcomes, aspects apart from age, like the economic conditions of the mother, should equally be acknowledged to understand the overall situation. Misconceptions and lack of understanding of the practice and its associated benefits, along with prevailing social taboos, are primary factors contributing to the non-adoption of family planning methods. Numerous studies have explained the patterns of contraceptive usage and the significant lack of awareness among married teenagers, indicating a notable lack of knowledge and understanding regarding contraception and family planning [18].

Another noteworthy finding in this research, pertains to individuals' attitudes and perceptions regarding adolescent pregnancy. While societal norms generally do not endorse adolescent pregnancy, they do not entirely condemn it either. The social acceptance of pregnancies occurring outside the confines of marriage, along with the support extended to young mothers, is prevalent in the area, in stark contrast to the majority of Indian cultures, where such pregnancies are regarded as taboo. The matrilineal system adhered to by the local populace affords a degree of social and economic security for young mothers, with grandparents often assuming responsibility for child-rearing. According to Ghildyal and

Dey, in their study find out that adolescent motherhood is not perceived as a problematic or distressing life event, and the matrilineal structure may serve as a mitigating factor against the adverse emotional and social ramifications of teenage motherhood [19]. The West Khasi Hills region possesses the highest incidence of impoverished populations within the state, as indicated by the Multidimensional Poverty Index report of 2022, with the most pronounced prevalence found in rural areas. Poverty is correlated with the incidence of early pregnancies, as young females often seek to escape economic hardship and alleviate familial burdens by marry young [20].

CONCLUSION

The research indicates that the high incidence of early pregnancies is linked to the overall socioeconomic conditions in the region. The lack of awareness regarding sexual and health education among the respondents can be recognised as a fundamental issue within the locality. The health status of women in the area is poor on average, and teenagers are particularly susceptible to various adverse health negative outcomes. Intervention should be implemented by both local authorities and parents concerning the effect of early pregnancy. It also has a lifelong impact. The number of single parents is higher among mothers who start childbearing at an early age, where they are biologically and emotionally not stable yet.

Declaration by Authors

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