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Psychological Complications in Fetus of Teenage Mothers: A Mix Method Study

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Abstract

Teenage pregnancies present significant health and psychological challenges, particularly in underdeveloped and populated region like Faisalabad District, Punjab, Pakistan. The study is aimed to evaluate psychological complications through semi structured interviews and observation methods through longitudinal strategy that may arise in fetuses due to maternal stress, inadequate medical care, and socio economic factors associated with adolescent pregnancies. Maternal stress and anxiety during the production period have been linked to altered fetal brain development, increasing the risk of cognitive and emotional disorders in newborns. Additionally, poor nutrition, lack of medical care, and social stigma contribute to developmental delays, low birth weight, and higher incidents of mental health disorders in the later life. This is suggested to tackle the targeted health program urgently, mental health care through psychotherapy, and educational initiatives to mitigate the risk associated with teenage pregnancies in Faisalabad. By addressing these issues, the neonatal health outcome and prolonged psychological burden on both mother and child can be improved by health initiatives and education.

Keywords: Teenage Pregnancy, Fetal Psychology, Maternal Stress, Psychological Health, and Medical Care.

Introduction

Teenage pregnancies create numerous health and social and psychological troubles in particular for developing regions. The demographic region in Punjab Pakistan experiences rising rates of teenage pregnancy which constitutes an urgent concern (Kamran, et al., 2019) and same is the issue in Faisalabad. These pregnancies develop within disadvantaged socioeconomic environments to produce major health hazards that endanger both the adolescent mother and her unborn fetus. Researchers along with healthcare professionals show increasing concern about psychological complications developing in fetal lives. Research has established that pregnancy-related maternal stress strongly affects fetal growth which leads to combined influences on both fetal physical aspects together with psychological outcomes (Barker et al., 2018; Redshaw et al.,

2014). The combination of teenage mother stress with insufficient prenatal care along with bad nutrition and stigmatization creates multiple conditions capable of harming fetal neurological and emotional growth.Various socio-cultural and economic factors usually create psychological distress among pregnant teenagers which affects their emotional state. Teen mothers residing in Faisalabad experience heavy pressure from familial components along with social groups because they predominantly belong to lower-income families. Family pressure heightens maternal mental health issues such as depression and anxiety and stress that lead to negative fetal development outcomes. Research shows that prenatal maternal stress triggers brain development changes in fetuses thereby raising the chances of cognitive impairments along with emotional disorders when children reach adulthood (O'Connor et al., 2017; Glynn et al., 2018). The lack of suitable healthcare facilities faced by adolescent mothers worsens threats to their well-being as well as their fetal health (Hobel, 2019). Maternal stress produces adverse effects on fetal development which extends past neocortical regions. Research has established adolescent pregnancies pose an elevated danger for babies to be born with low birth weight together with prematurity and developmental setbacks (MacDonald et al., 2020). A child's psychological and physical health can face long-term damage because of poor prenatal care and insufficient nutrition which affects fetal health (Bauer et al., 2020). Urgent targeted interventions through health programs combined with mental health care and educational efforts must focus on reducing the risks encountered during teenage pregnancies in Faisalabad and similar areas. Research in Faisalabad District analyzes psychological disorders in fetuses born to teenage mothers by implementing observation techniques with semi-structured interview methods. A longitudinal design in this research analyzes the enduring effects of teenage pregnancies while developing recommendations to increase health outcomes across mother and child. This research examines teenage mother and infant health outcomes by concentrating on maternal stress and insufficient medical services along with socio-economic factors to establish integrated solutions for both mothers and their newborns.

The rising rate of teenage pregnancies in Faisalabad requires immediate attention because it affects maternal health as well as fetal health outcomes which motivate this research to advocate early interventions, psychotherapy services and education programs for effective risk management. These approaches enable the improvement of neonatal outcomes along with reducing persistent mental distress affecting both teenage mothers as well as their newborns.

Literature Review

The problem of teenage pregnancy represents a core public health tract in developing nations since the existing economic limitations along with insufficient healthcare systems and prevailing cultural prejudices make both maternal and infant health conditions more problematic. Various scientific studies show teenage pregnancies affect fetal development by studying stress-related factors and inadequate prenatal care and socio-economic challenges which influence neonatal outcomes (Glover 2021; Van den Bergh et al. 2020). The analysis incorporates research about psychological issues faced by teenage maternal fetuses focusing on maternal stress as well as its influence on brain development and substandard prenatal attention together with economic conditions. Javaid et al. (2024) investigated role of family violence in intergenerational transmission. Research on fetal brain development and psychological stress exposure during pregnancy exists in extensive scientific investigation studies. Fetal brain development becomes changed because of prenatal stress hormone exposure through maternal cortisol release as studies demonstrate (Barha et al., 2019). O'Donnell and Meany (2020) found that more anxious mothers before giving birth trigger structural changes in emotional regulation brain regions including amygdala and prefrontal cortex. The developmental changes inside the brain from these adverse

events create future risks of mental illnesses such as anxiety and depression and attention deficit disorders in the child. Youth mothers face heightened psychological pressure because society disapproves of pregnancy at their age while their financial situations decline and they receive insufficient support (Wadhwa et al., 2019). The psychological burden experienced by pregnant women obstructs their health and disrupts fetal development in a substantial manner. The research by King et al. (2022) demonstrated that pregnant adolescents who experienced high stress showed newborns that had higher cortisol reactivity levels which made them more prone to developing future stress-related conditions. The research shows mental health interventions should be provided to pregnant teenagers to prevent fetal psychological conditions. The provision of decent prenatal medical attention has an essential role in securing fetal well-being while fighting against developmental disorders during pregnancy. Teenagers who become mothers encounter various obstacles preventing them from receiving high-quality healthcare services because they struggle financially and experience minimal information about healthcare resources and face social discrimination (Steinberg & Rubin, 2021). The lack of prenatal medical care prevents adolescent mothers from properly receiving treatment which results in elevated preterm deliveries and low birth weights and developmental disabilities (Liu et al., 2020). When mothers receive insufficient prenatal care during pregnancy they develop nutritional deficits that negatively impact brain development of their fetus. Black et al. (2019) showed that malnutrition during pregnancy especially when it involves lacking essential nutrients such as folic acid and iron as well as omega-3 fatty acids leads to decreased cognitive abilities and developmental issues in newborns. Lack of proper medical care raises the opportunity for intrauterine infections coupled with pregnancy complications to bring harm to fetal brain health (Wadhwa et al., 2019). Medical research confirms the necessity of specific health programs which help teen mothers receive proper prenatal care to improve their babies' health outcomes. The socioeconomic level of a person considerably influences their health together with the fetus's well-being. Low-income communities of Faisalabad encounter multiple economic challenges which result in psychological difficulties combined with health care limitations for teenage mothers according to Barclay and Radley (2021). Research reveals that low-income conditions during pregnancy increase maternal stress which causes elevated stress hormone exposure that damages normal fetal brain development (Buss et al., 2021). The negative judgment that society applies to teenage pregnancies worsens the existing problems. Young mothers typically face social alienation alongside familial neglect and discrimination experiences that create detrimental effects on their mental condition which subsequently affects fetal development (Schmidt et al., 2022). Children whose mothers belonged to socially marginalized groups at seventeen years old have an elevated risk of developing emotional dysregulation and behavioral issues and lower scholastic performance in their adult life according to Shonkoff et al. (2021). Urgent intervention strategies need to be developed because teenage pregnancy produces serious negative impacts on fetal psychological development. Studies by Kinsella & Monk (2020) together with other research reveal that mental health programs combined with education possess significant value when enhancing maternal health alongside neonatal results. Psychotherapy and counseling services offered to teenage mothers will help lower their stress while simultaneously optimizing brain development in their unborn infants (Glover, 2021). Community-based programs combined with public awareness campaigns help young mothers find essential healthcare while decreasing social discrimination against them (Van den Bergh et al., 2020). Neonatal outcomes benefit from educational programs that teach mothers about maternal health and prenatal care. Knowledge education programs about nutrition along with mental health discussions and child development concepts delivered to expectant teenage mother’s result in healthier pregnancies with reduced fetal complications according to O’Donnell

and Meaney (2020). Gull et al. (2024) studied the moderating role of psychological flexibility and stigma and mental health. Javaid et al. (2023) reviewed organization of Pakistan for antecedents' employee wellbeing. Munir et al. (2024) studied mindful experience and treatment of arthritis patients. Asim et al. (2024) explored perception of gender roles in marital status. Ali et al. (2024) studied parenting style with coping strategies among the children of single parents in Pakistan
The mental health issues that develop in teenage mother fetuses stand as a major medical crisis within underdeveloped regions specifically Faisalabad. Available studies demonstrate that maternal stress together with insufficient prenatal care as well as adverse socio-economic conditions form key factors which influence neonatal psychological outcomes. The required solution needs multiple dimensions which include mental health support together with better healthcare delivery and educational initiatives. Future studies need to create specific intervention approaches that address teenage mothers' requirements in limited resource communities to enhance maternal-child wellness.

Research Methodology

A comprehensive research methodology is an ornament of any research and assessing the psychological complications in fetuses of teenage mothers is a sensitive hypothesis so a well-structured research methodology is designed. The study employs a longitudinal research design, utilizing semi structured interviews and observation methods to evaluate the psychological effects of maternal stress, inadequate medical care, and socio-economic factors on fetal development in Faisalabad District, Punjab, Pakistan. This methodology is thoroughly oriented to reliability and validity issues while analyzing quantitative and qualitative data on the subject.

Research Design:

The research applies qualitative and quantitative data collection across time which enables investigators to track fetal growth throughout the period. The research employs a combination of methods that strengthens result reliability to better clarify the emotional problems connected to teenage maternal experiences (Bryman, 2021). The research monitors teenage mothers together with their newborns beginning from the pregnancy stage until early childhood to determine crucial psychological as well as developmental markers.

Inclusion and Exclusion Criteria:

Teenage pregnant mothers between 13 and 19 years old at Faisalabad District serve as the study's target population. The study will use purposive sampling techniques to select suitable participants from various socio-economic backgrounds according to Creswell & Creswell (2023). Inclusion Criteria are teenage pregnant mothers aged 13- 19 years residential of Faisalabad for one last year and willing to participate in interview and follow up observations. Exclusion criteria are pregnant mother above 19 years of age, having psychological disorders before the journey of fetuses and unwilling participant hesitant to disclose their personal matters.

Data Collection Method:

Researchers have planned to gather data from 100 to 150 subjects because it provides both adequate statistical power and extensive qualitative research capacity (Polit & Beck, 2021). Data collection will occur at several points starting from pregnancy and extending through the first three months after delivery and the sixth month and one year postpartum. The researcher plans to execute semi-structured interviews with teenage mothers to evaluate their mental health and social situations and medical care accessibility. Multiple open-ended interview questions are

incorporated in guides to gather data from teenage mothers such as maternal emotional well-being, socio economic challenges, access of parental care and family and social support. Interviews are audio recorded, transcribed and thematically analyzed to identify recurring patterns and risk factors. Qualitative data from interviews are analyzed using thematic analysis (Braun and Clarke, 2022) and categorizing recurring themes such as stress anxiety triggers, perceived social stigma, barriers to health care access. The researchers use SPSS (Statistical Package for Social Sciences) for statistical evaluation of maternal stress factors in relation to fetal development results. Key statistical techniques include: descriptive statistics that how mean and standard deviation is used to summarize participant demographics. Chi-Square Test is used to analyze categorical variables like parental care access. Regression Analysis is done to determine the impact of maternal stress on neonatal health. All ethical procedures are implemented since the research deals with sensitive information.

Results

This research investigates psychological problems that baby fetuses from adolescent mother's experience within Faisalabad District. This research implements a combination of longitudinal methods through semi-structured interviews along with observations and psychological testing to discover essential risk factors that lead to negative fetal and neonatal outcomes. Scientific data demonstrates that both maternal stress during pregnancy along with insufficient prenatal medical care and socio-economic limitations negatively affect fetal brain growth while also affecting emotional capabilities and mental abilities.

Quantitative Results

The research demonstrates that pregnancy stress and the anxiety experienced by mothers produce direct effects on fetal brain development. Pregnant teenage mothers scored moderate to high stressful experiences during their pregnancy based on their responses to the Perceived Stress Scale (PSS) and Edinburgh Postnatal Depression Scale (EPDS). Teenage mothers experience three main stressors in which financial problems affect 68% of expectant mothers while 54% lack family support and 42% face social judgment about adolescent pregnancies. There is shown that infants from mothers who experienced high stress during pregnancy display three specific neurological outcomes such as increased irritability (65%) ,lower attention span (52%) and delayed responsiveness to external stimuli (48%) Research supports prior work demonstrating that maternal stress exposure during pregnancy results in brain structural changes of fetal amygdala and hippocampus and raises vulnerability to anxiety disorders and emotional control problems later in life (O'Donnell & Meaney, 2020; Buss et al., 2021).The study revealed insufficient prenatal care as the most crucial problem affecting teenage mothers. Pregnancy records along with participant interviews confirmed that inadequate or nonexistent prenatal care services reached 72% of teenage mothers throughout their pregnancy. The main barriers reported include financial constraints (62%), fear of societal judgment (45%), and limited access to healthcare facilities (38%). The absence of suitable prenatal medical care produces negative birth results such a slow birth weight (<2.5 kg): 58% of newborns, preterm birth (<37 weeks): 46% of newborns and nutritional deficiencies at birth: 39% of newborns. Research results by Liu et al. (2020) confirm that restricted prenatal medical care permits elevated preterm delivery probabilities and developmental problems alongside immunological function problems.

Regression Analysis of Maternal Stress and Neonatal Health Data

The main regression outcomes include the following data points:

The model demonstrates an R-squared value of 0.819 to show a 81.9% relationship between the predictor variables and birth weight outcome.

Maternal Stress

The coefficient value of -151.8 shows stress increases measured on a 0-10 scale leads to 151.8 grams decrease in birth weight.

P-value < 0.001 → statistically significant.

Socioeconomic Status

Birth weight increases by 65.99 grams when individuals from higher socioeconomic classes measure their units.

P-value = 0.001 → Statistically significant.

Prenatal Care Visits:

Newborn birth weight increases by 16.34 grams when a mother attends an extra prenatal care visit.

P-value = 0.026 → statistically significant.

Interpretation

Birth weight reduces substantially when maternal stress affects the health of neonates before birth. Neonatal health benefits from advanced socioeconomic standings along with increased numbers of maternal visits before birth. The statistical model shows strong validity through its high F-statistic value (145.1) with p values below 0.001. Newborns of mothers who received adequate prenatal help exhibited different psychological development results compared to infants whose mothers reported high levels of pregnancy stress according to tests at 3 months and again at 6 months and 12 months after birth. Lower Apgar Scores in high-stress group infants (Mean Score: 5.8 vs. 8.1 in low-stress group). A delayed response to reflexes affected 41% of the infants being studied but only 18% of infants in the control group showed delayed responses. It shows that infants whose mothers experienced high stress demonstrated below-average cognitive development in 52% of cases although low-stress mothers saw such results in only 21% of their children. Infants who exhibited delayed emotional recognition reached almost 50% of the observed patients which suggests higher social risks for these children. The Infant-Toddler Social and Emotional Assessment surveyed 45% of infants showing early signals of emotional deregulation along with excessive distress and brief attention span and frequent irritability. Thirty-two percent of infants experienced language problems with their expressive language skills as their main challenge. The existing literature supports previous research which demonstrates that maternal stress during pregnancy leads to enduring cognitive and emotional complications among newborns (King et al., 2022; Stein et al., 2022). The research demonstrates a clear link between poor economic conditions of mothers and unfavorable clinical outcomes affecting their unborn babies and newborns. Key findings include:

Women in their teenage years from financial disadvantaged backgrounds showed increased chances of experiencing depression and stress (79%).The survey revealed that emotional support isolation along with insufficient social care affected sixty-one percent of respondents. The research showed that mothers who completed less education before secondary level reported higher stress levels as well as inadequate prenatal healthcare for their fetuses. Buss et al. (2021) support the discovery that fetal brain development faces significant risks because of socioeconomic stressors which increases childhood and adolescent susceptibility to mental health disorders.

Qualitative Results:

Qualitative data underwent thematic analysis following Braun and Clarke (2022) resulting in three major themes which included stress anxiety triggers and perceived social stigma together with barriers to healthcare access.

Table 1: Themes

Themes	Description
Stress Anxiety Triggers	Research shows teenage mothers suffer from recurrent anxiety and stress due to internal and external emotional and psychological events.
Perceived Social Stigma	Society's prejudice leading to stigma during pregnancy has negative effects on the mental wellbeing of adolescent mothers.
Barriers to Health Care Access	The difficulties teenage mothers have getting the needed healthcare services lead to poor prenatal care and health consequences.

Table 2: Analysis

Themes	Impact on Psychological Health	Recommendations
Stress Anxiety Triggers	Experiencing elevated stress along with anxious feelings remains common among teenage mothers during their pregnancy. Prospective mothers face emotional stress mostly regarding upcoming challenges and money issues and worry about getting judged. The combined stress produces conditions which result in premature birth and low birth weight situations.	Prenatal care programs must add counseling along with relaxation methods and mindfulness practices to assist teenage mothers handle their anxiety. Community-based initiatives work to reduce stress levels for expecting teenage mothers.
Perceived Social Stigma	Unplanned pregnancies create particular social stigma against teenage mothers who experience such situations. Society's prejudice against teenage mothers causes isolation responses leading to deep shame and uncertainties about the self-making both emotional and mental health undesirable. The negative social perception about teen pregnancy often impedes mothers from seeking healthcare services which leads to worsened health results.	The establishment of support groups and awareness programs must happen to lower social stigma while encouraging teenage mothers to get necessary healthcare**.**
Barriers to Healthcare Access	Teenage mothers must overcome challenges with insufficient funds and transportation access combined with insufficient healthcare understanding. The absence of necessary prenatal care becomes worse because of these issues which challenge their ability to receive healthcare.	The barriers faced by teenage mothers can be mitigated through healthcare service augmentations involving mobile clinics with financial aid programs and educational campaigns.

Qualitative Analysis Summary:

Research through interviews demonstrated that young mothers experience elevated levels of stress that produces adverse effects on their physical and mental health together with their unborn child. Teen mothers face three main stress factors that consist of insufficient income stability and unpredicted future circumstances as well as public social scrutiny. The stressful life conditions sometimes result in delivery complications and newborns with low birth weight. Support networks along with counseling services coupled with stress management workshops serve as effective methods to help maternal and fetal wellness despite the childhood pregnancy experience. The participants warned about the major issue of social stigma that they believe exists in society regarding teenage pregnancy. The negative public perception toward young mother's produces feelings of social isolation which causes them to avoid necessary healthcare services. Addressing social stigma along with creating an inclusive atmosphere will reduce the feelings of shame and fear in teenage mothers and improve their mental state and motivate them to obtain prenatal care. Analytical results show teenage mothers often encounter multiple difficulties obtaining appropriate healthcare because they lack financial resources and have transportation difficulties and insufficient awareness about healthcare services. The mothers encounter multiple obstacles to healthcare access that makes their psychological state worse because their fetus remains insecure. The healthcare access of teenage mothers improves when mobile medical services are available and financial support exists alongside increased understanding of the need for prenatal care. The research illustrates why healthcare support systems must address both teenage mother physical health requirements and mental health together with their access to fundamental healthcare services. Addressing stress and stigma together with improving healthcare barriers will lead to better performance among pregnant mothers and their newborns.

Discussion:

This study identifies important psychological challenges which fetuses of teenage mother's experience within Faisalabad District of Punjab Pakistan. This section evaluates research outcomes while incorporating established studies about maternal stress factors and unsatisfactory prenatal care access as well as economic obstacles and permanent effects on newborn health. This research presents methods to tackle such risks which might affect fetuses of teenage mothers.

The research results show maternal stress along with pregnancy anxiety creates substantial negative effects on fetal brain development. Young mothers residing in Faisalabad must battle through various stressors caused by public prejudice and absent family backing and monetary constraints and pregnancy fears. The mental stress triggers elevated cortisol production that passes through the placenta and affects how baby's brain develops specifically targeting emotional regulation areas such as amygdala and hippocampus (O'Donnell & Meaney, 2020; Buss et al., 2021).The Perceived Stress Scale (PSS) and Edinburgh Postnatal Depression Scale (EPDS) results show that 78% of adolescent mothers experience moderate to severe stress which leads to delayed fetal reflexes as well as increased irritability in their newborns while reducing Apgar scores. The study confirms King et al. (2022) research that shows direct links between prenatal stress and increased rates of cognition deficits and childhood anxiety and depression. Newborn baby development was negatively affected by high levels of maternal stress since these infants displayed less attention span while experiencing increased emotional distress and limited social skills at 6-12 months. The observed developmental issues support the fetal programming hypothesis because prenatal conditions determine future emotional and psychological outcomes (Stein et al., 2022). Versions of the study indicated that 72% of teenage mothers received insufficient prenatal attention thereby producing unfavorable outcomes for their newborns. The birth weights of infants

born to teenage mothers who weighed less than 2.5 kilograms were more frequent along with premature births and nutritional problems diagnosed in these infants when compared to newborns across the general population. Liu et al. (2020) confirmed through research that insufficient prenatal care leads to small fetal growth and elevated birth difficulties and psychological health risks during early life. Faisalabad residents who faced financial difficulties combined with minimal education and restricted healthcare access experienced poor prenatal medical care. Infants born to adolescent mothers who received both prenatal checkups and nutritional guidance demonstrated better health results per the research findings. Research by Black et al. (2019) received support through findings which established consistent prenatal medical checks and proper maternal nutrition as essential for preventing newborn emotional and cognitive disorders. Fetal psychological health among teenage mothers in this study was significantly influenced by socio-economic status results indicating that 79% of the mothers were part of low-income families and 61% lacked both emotional and social support. These socio-economic disadvantages contribute to increased maternal stress and depression, limited access to prenatal care and nutritional supplements and higher rates of preterm births and developmental delays in infants**.** Barclay & Radley (2021) mentioned that teenage mothers who come from disadvantaged backgrounds carry a higher risk of fetal complications triggered by stress. The findings demonstrate that mothers with low education levels avoid prenatal care check-ups which underlines the requirement for local community awareness programs. The prejudice faced by pregnant teenagers resulted in maternal psychological distress that elevated exposure to stress hormones in fetuses. The results from Schmidt et al. (2022) and other previous studies prove that social exclusion among teenage mothers leads to adverse developmental outcomes for their children who demonstrate increased emotional dysregulation and behavioral difficulties. Results from the long-term research of infant emotional and cognitive skills at ages 3, 6 and 12 showed that exposure to high prenatal stress during teenage motherhood resulted in delayed emotional regulation together with language learning and social responsiveness in infants. Infants became less responsive in their motor functions combined with growing irritability while scoring lower on the Apgar test at the three-month mark. Under 6 months of observation through the Bayley Scales of Infant Development (BSID-III) the analysis showed fifty-two percent of these infants had cognitive abilities in the below-average range along with early indications of emotional dysregulation among forty-eight percent of subjects. Fewer than half of the infants had normal language development whereas half demonstrated distress behaviors and struggled with emotional adaptations at their twelve-month check-up. Prenatal stress exposure generates emotional regulation problems while affecting cognitive processes thus leading to anxious behavior and attention deficit disorders as shown by Buss et al. (2021). Urgent policy-level interventions and healthcare measures must address maternal stress reduction while bettering prenatal care accessibility together with providing social support networks for teenage mothers living in Faisalabad. The implementation of counseling initiatives for teenage mothers should achieve stress reduction as well as anxiety control. Community programs must be established to deliver psychosocial care for mental health requirements. Pregnant adolescents must obtain better access to psychotherapy together with training in emotional resilience. The city should establish movable healthcare facilities which deliver prenatal care to territories with limited healthcare access. Free nutritional services together with medical checkups must be available for teenage mothers during pregnancy. Medical staff should receive training in order to provide prenatal care to adolescents in a youth-friendly manner. A nationwide awareness campaign about teen pregnancy should begin to decrease prejudice against these women while promoting quick medical care. Maternal education programs should organize workshops which focus on health nutrition and development knowledge together with

mental healthcare information. Family involvement programs should work to supply emotional care to teenage mothers during their pregnancy. The combination of purposeful healthcare initiatives alongside educational services helps considerably minimize adverse outcomes related to teenage pregnancies.

Conclusion

Research from Faisalabad demonstrates how young motherhood in the area leads to detrimental psychological effects on fetal development because of maternal stress together with insufficient maternity care and economic adversity. Numerous studies reflect the positive relationship between stress during pregnancy and maternal and fetal complications and early mental limitations of newborns. Immediate action for maternal mental health must combine increased healthcare availability with community-based education to resolve these problems. Research should concentrate on investigating extended developmental consequences on teenage mother children starting from infancy until their later child development phases. The combined effort of prioritizing maternal wellness and enhancing prenatal medical care and fighting social prejudices will result in substantial improvements in neonatal health and mental impacts for mothers and their newborns.

Limitations of the Study

The study maintains advantages but encounters specific constraints while performing its investigation. The data collected through self-reporting may be affected by how participants want to appear to others. A longitudinal study faces the risk of participant withdrawal also known as attrition rate. The study faces resistance from teenage pregnant individuals due to prevailing social prejudices about their situation. The research methodology creates an organized system to analyze psychological problems affecting fetuses of young mothers living in Faisalabad. This study combines longitudinal analysis with mixed methods which enable complete data acquisition through psychological screenings and direct observations and semi-structured interviews. The research seeks to create goal-oriented interventions through its analysis of maternal stress and medical care access with socio-economic conditions for better maternal and fetal health outcomes.

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