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Status in Mali*

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Abstract

Purpose: The purpose of this study was to evaluate dietary habits and nutrition status of pregnant adolescents.

Methodology: The study used a desktop literature review methodology (desk study). This required a thorough analysis of research on the dietary habits and nutrition status of pregnant adolescents. The subject of the study underwent three phases of sorting in order to assess its suitability for further study.

Findings: This study concludes that the poor nutrition status was associated with inadequate dietary intake and frequent illness. The low knowledge was attributed to low education level and poor health seeking

behavior. The low knowledge translated to poor decision making in dietary practices.

Unique Contribution to Theory, Practice and Policy: This study recommends ministry of Health at National level to enhance the use of the existing training package and policy in counselling pregnant adolescents. It should also come up with a counselling package and policy for use in counselling these mothers.

Keywords: *Cultural Factors, Dietary Intake, Pregnant Adolescent Girls, Maternal Factors.*

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INTRODUCTION

In developing nations, one-third of women give birth before the age of 18 (Langille, 2017). The majority of teenage births occur in poor nations (Imamura *et al.*, 2017). According to research, the birth rate among adolescents is still rising (Sukrat, 2015). A study in 43 developing nations in sub-Saharan Africa reveals that teenage pregnancy rates are high (Singh, 2018). The bulk of these nations have teenage marriage rates because of this (Adebowale *et al.*, 2022). In Mali, 3 percent of young females between the ages of fifteen and nineteen are expecting their first child, 15% of them are mothers, and 18 percent of them are already of childbearing age.

Teenage girls receive little protection, which leads to teenage pregnancy (Symonds & Ramsay, 2020). Early marriage is a result of poverty, and having children is seen as a means of surviving financially. In order to survive, a girl can be given in marriage to an older man (Adebowale *et al.*, 2022). Traditional beliefs encourage family heads to choose their children's spouses without considering the impact on the health and welfare of the girl child, claim Stewart *et al.* (2017). (Kramer, 2018). By the time they become 19, young girls without any formal schooling are more than three times as likely to have already begun having children (Were, 2017).

Pregnancy causes many girls to drop out of school, which significantly impacts their lives (Rah, Christian & Shamim, 2018). The most common cause of death for girls in developing nations is complications from teenage pregnancies (Were, 2017). Every year, almost 70,000 teenagers pass away (Stapleton & Keenan, 2019). Prenatal nutrition influences fetal growth and may have long-lasting impacts that raise the mortality and morbidity of the newborn kid. Although no specific research has been done in North Eastern Mali, there have been numerous reports of high infant death rates among babies born to adolescents in other parts of Mali (Nderitu *et al.*, 2015).

The nutritional health of women of childbearing age affects pregnancy outcomes, especially the newborn's birth weight. Poor maternal nutrition is a significant cause of maternal death, newborn mortality, and low birth weight in babies, according to a study by Ramachandran (2022). Consequently, nutrition status during conception is a key factor in determining subsequent status and reproductive effectiveness (Brown & Isaacs, 2021). The main reasons for death in girls are complications from early pregnancies. It's critical to maintain adequate nutrition both before and during pregnancy, according to a study (Black *et al.*, 2018).

Statement of the Problem

Teenage females who are pregnant are especially susceptible to malnutrition due to their physiological needs. Teenage pregnancies have increased recently (Sukrat, 2015). Girls who are pregnant as teens are more susceptible to illnesses and malnutrition. The mother's and the child's health is put at risk as a result. In turn, this creates a vicious cycle wherein starvation is passed down from one generation to the next. Girls who are pregnant as teenagers' need-specific knowledge in order to break this vicious cycle. The majority of research only provide scant information on teenage mothers who are pregnant. Only a small number of these investigations were carried out in developing nations, with the majority taking place in industrialized nations. Additionally, data on the prevalence of undernutrition has not been linked to the variables that cause it. Girls who are pregnant as adolescents tend to have poor nutrition and eating habits. Research has linked pregnancy performance (Bookari *et al.*, 2022).

Mali has a dearth of research on teenage girls who are pregnant. Therefore, there is little knowledge about how to create interventions for this vulnerable group. Due to food insecurity, the populace in this county is at risk (Waithaka, 2015). Thus, this study evaluated the nutritional condition and eating patterns of pregnant adolescent girls in Mali.

Objectives of the Study

The general objective of the study is to assess dietary habits and nutrition status among pregnant adolescents' girls in Mali. This is with an aim to improving the dietary habits and thus the birth outcome.

Significance of the Study

Findings from this study are useful to Government of Mali, Ministry of Health and other health sector organizations to enact policies aimed at improving dietary intake among pregnant adolescents. The study may also contribute to knowledge on dietary intake and nutrition factors associated with pregnant adolescents' girls in Arid and Semi-Arid Lands (ASAL) areas.

LITERATURE REVIEW

Socio-demographic Characteristics among Pregnant Mothers

According to Langille (2017), one-third of women in poor nations give birth before turning 18 years old, with developing countries accounting for 99 percent of adolescent births (Imamura, Tucker, Hannaford et al., 2017). In Mali, 18% of teenage girls between the ages of 15 and 19 had already started having children (MDHS, 2015). There is no information on the percentage in Mali.

Numerous socio-demographic factors, including age, marital status, and level of education, have been linked to pregnant women's eating patterns and nutritional status, according to studies (Ongosi *et al.*, 2015). To achieve both physical and emotional development before conception, it is advised that a woman be older than 18 years old (Mahmoudfakhe *et al.*, 2022). Pregnant women's ages have been linked to their nutritional state, and the younger they are, the more likely they are to be underweight (Regassa & Stoecker, 2022; Shaw, 2022). Mothers' education has an impact on their nutrition since it influences their ability to choose healthy foods (Al-Ali *et al.*, 2022). Better nutritional habits are adopted by educated mothers than by uneducated mothers, according to research (Naeeni *et al.*, 2016). According to a different study, educated mothers are more likely to comprehend nutrition principles than uneducated mothers, making them more inclined to practice healthy eating (Hiza, 2022). Mothers' occupations are influenced by their level of education (Faridah et al., 2018).

Nutrient Needs and Dietary Habits of Pregnant Adolescents' Girls

An important stage in the life cycle is pregnancy (Aaltonen *et al.*, 2021). Needs rise by 13% for energy, 54% for protein, and 0–50% for vitamins and minerals. The American Dietetic Association (ADA) (2018) states that women have significant nutritional needs, which, if unmet, can have a negative impact on the outcome of childbirth. Pregnant women should eat more at mealtimes or have short, frequent meals, according to Abebe (2015). In addition, there are the between-meal munchies. Fruits and vegetables should be plentiful, and everyone should drink enough water each

day (8 glasses or 1.5 liters). Avoid drinking a lot of tea or coffee with meals to prevent iron absorption from being hampered and causing anemia.

There is no research linking food habits with adolescent pregnancy. To avoid depleting the body's reserves, pregnant women, including teenage girls, need a diversified diet and vitamin supplements (Khoushabi & Saraswathi, 2020). The third trimester is when nutrients are most abundant (Omwancha, 2022). Carbohydrates, protein, fatty acids, and micronutrients like zinc, iron, magnesium, calcium, riboflavin, and vitamin C are necessary for the development of the fetus (Sukchan *et al.*, 2020). Adolescents need more nutrients since they need more for both their own and their offspring's growth. The goal of the study was to evaluate how nutrient-dense the diets of pregnant teenagers were. Lack of certain nutrients can cause birth abnormalities and neonatal mortality (Abu-Saad & Fraser, 2020). In addition to eating a variety of foods, nutritional supplements are advised. Additionally, fortified foods should be offered (Singh, 2018).

Empirical Review

Thorne-Lyman *et al.* (2020), conducted a study on the dietary patterns of > 30000 adolescents 9-15 years of age in rural Bangladesh. Little is known of the usual food intakes of rural adolescents in South Asia. This study describes dietary patterns, based on >91,000 7-day food frequencies among 30,702 girls and boys, aged 9–15 years in rural northwest Bangladesh. Three intake assessments per child, taken across a calendar year, were averaged to represent individual annual intake patterns for 22 food groups. Latent class analysis was used to assign individuals to dietary patterns based on class membership probabilities. The following five dietary patterns (class membership probabilities) were identified: (1) “least diverse” (0.20); (2) “traditional” (0.28); (3) “low vegetable/low fish” (0.23), (4) “moderately high meat” (0.20); and (5) “most diverse” (0.09). The least diverse pattern had the lowest median consumption of most foods and traditional had a relatively higher intake of most vegetables and fish. The most diverse pattern consumed both healthy and processed foods much more often than other patterns. The two most diverse patterns (4 and 5) were associated with higher socioeconomic status, body mass index, height-for-age Z-score, and male gender, and the least diverse pattern showed inverse associations with these characteristics. The most diverse pattern may represent an early wave of the nutrition transition in rural Bangladesh.

Vander Wyst *et al.* (2019), investigated social media intervention to improve nutrition knowledge and behaviours of low income, pregnant adolescents and adult women. Pregnant adolescents are at increased risk of adverse pregnancy outcomes compared to adult women, necessitating a need for early and comprehensive health care. This study aimed to evaluate the effectiveness of a social media intervention (i.e., weekly prenatal health messages) on improving diet quality, and health beliefs and knowledge. Participants (10 adolescents and 12 adults) completed pre-post intervention interviews, nutrition knowledge and health belief questionnaires, and 24-hour diet recalls. Participants entering pregnancy as overweight or obese were more likely to experience excessive GWG during the intervention. The adults had greater participation during the study despite high levels of social media access among both groups. Participants were able to identify sugar-sweetened foods and acknowledged the benefits of whole grains; however, overall knowledge of MyPlate Guidelines was limited. Social media-based education was well received by participants

but did not result in large changes in dietary intake and knowledge. Although larger studies are needed, social media appears to have the potential to reach high-risk women.

Oddy *et al.* (2018), conducted a study on dietary patterns, body mass index and inflammation. Observational studies suggest that dietary patterns may impact mental health outcomes, although biologically plausible pathways are yet to be tested. The study aimed to elucidate the longitudinal relationship between dietary patterns, adiposity, inflammation and mental health including depressive symptoms in a population-based cohort of adolescents. Data were provided from 843 adolescents participating in the Western Australian Pregnancy Cohort (Raine) Study at 14 and 17 years (y) of age. Structural equation modelling was applied to test our hypothesized models relating dietary patterns, energy intake and adiposity (body mass index) at 14 y to adiposity and the pro-inflammatory adipokine (leptin) and inflammation (high sensitivity C-reactive protein – hs-CRP) at 17 y, and these inflammatory markers to depressive symptoms (Beck Depression Inventory) and Internalizing and Externalizing Behavioral Problems (Child Behavior Check List Youth Self- Report) at 17 y. the study further tested a reverse hypothesis model, with depression at 14 y as a predictor of dietary patterns at the same time-point.

The tested models provided a good fit to the data. A ‘Western’ dietary pattern (high intake of red meat, takeaway, refined foods, and confectionary) at 14 y was associated with higher energy intake and BMI at 14 y, and with BMI and biomarkers of inflammation at 17 y (all $p < .05$). A ‘Healthy’ dietary pattern (high in fruit, vegetables, fish, whole-grains) was inversely associated with BMI and inflammation at 17 y ($p < .05$). Higher BMI at 14 y was associated with higher BMI ($p < .01$), leptin ($p < .05$), hs-CRP ($p < .05$), depressive symptoms ($p < .05$) and mental health problems ($p < .05$), all at 17 y. A ‘Western’ dietary pattern associates with an increased risk of mental health problems including depressive symptoms in adolescents, through biologically plausible pathways of adiposity and inflammation, whereas a ‘Healthy’ dietary pattern appears protective in these pathways. Longitudinal modelling into adulthood is indicated to confirm the complex associations of dietary patterns, adiposity, inflammation and mental health problems, including depressive symptoms.

Akseer *et al.* (2017), conducted a study on the global and regional trends in the nutritional status of young people. Adolescence and emerging adulthood form a critical time period for the achievement of optimal health and nutrition across all stages of the life course. The research undertook a review of published literature and global data repositories for information on nutrition levels, trends, and patterns among young people aged 10–24 years from January 1, 2016 to September 20, 2016. The study described patterns for both males and females at the global level and for geographic regions for the period covering 1990–2015. The results of this study paint a less than ideal picture of current young people's nutrition, suggesting dual burdens of underweight and high body-mass index in many countries and variable improvements in micronutrient deficiencies across geographical regions. Poor diet diversity and lack of nutrient-dense food, high risk for metabolic syndrome, and sedentary lifestyles also characterize this population. The need for objective, comparable, and high-quality data is also recognized for further study in this area. As the global community works toward supporting and scaling up health gains in the sustainable development goal era, realizing the critical role of young people is essential. Investing in young

people's nutrition is critical to making strides in improving the overall health and well-being of all populations.

METHODOLOGY

The study adopted a desktop methodology. Desk research refers to secondary data or that which can be collected without fieldwork. Desk research is basically involved in collecting data from existing resources hence it is often considered a low-cost technique as compared to field research, as the main cost is involved in the executive's time, telephone charges and directories. Thus, the study relied on already published studies, reports and statistics. This secondary data was easily accessed through online journals and libraries.

FINDINGS

The results were grouped into various research gap categories namely as conceptual and contextual.

The majority of research only provide scant information on teenage mothers who are pregnant. Only a small number of these investigations were carried out in developing nations, with the majority taking place in industrialized nations. Mali has a dearth of research on teenage girls who are pregnant. Therefore, there is little knowledge about how to create interventions for this vulnerable group. In Mali, a region covered by the ASAL, few studies have been conducted. Additionally, nothing is known about pregnant adolescent girls and the prevalence of undernutrition, which has only been linked to the other contributing factors.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study found that the pregnant teenage girls had low levels of schooling. Because of pregnancy, the majority of them dropped out of school. Some of them were single as a result. As a result, low-profile professions like casual work and animal herding were adopted. As a result, there was a low income that was hardly enough to buy food.

These mothers had poor nutritional habits. This is demonstrated by the fact that they were unable to comprehend even the most fundamental concept of pregnancy nutrition. Low levels of education and poor health-seeking behavior were blamed for the lack of knowledge. Due to a lack of information, incorrect dietary decisions were made.

Recommendations

The Ministry of Health should make better use of the current training materials and guidelines for counseling pregnant teenagers, according to this study's national recommendations. Additionally, a counseling strategy and plan should be developed for use in counseling these mothers.

The Country Government should also implement a strategy to prohibit the usage of traditional healers and traditional birth attendants in order to enhance health-seeking behavior.

This study suggests measures like a supplemental feeding program run by the country's health workers to help these young moms with their nutrition status. Adults should continue to receive formal education, and community health professionals should continue to educate people about nutrition. This will empower the mothers to choose sensible dietary habits. Additionally, this would make it easier to spend the money on wholesome food.

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