

REVIEW ARTICLE

A Mini-review on the Determinants and Risk Factors of Adolescent Pregnancy in Developing Countries

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ABSTRACT

Pregnant adolescents have been shown to have a higher incidence of health and non-health-related complications that affect both mothers and infants. These include increased risk of pregnancy-related diseases such as anemia and pre-eclampsia, preterm and low-birth-weight babies, as well as other social consequences such as educational and financial difficulties. This mini review evaluates selected articles which explain the attitudes, knowledge, behavior and other risk factors associated with pregnancy among adolescents in developing countries. It also revealed that inadequate knowledge among adolescents about reproductive and sexual health, other social, cultural and peer influences, parenting values, and poor financial and educational status were factors that contribute to adolescent pregnancy. Likewise, a lack of support from parents, educators and healthcare workers had negative impacts on healthy sexual behavior among adolescents, which may ultimately lead to adolescent pregnancy. We conclude that the factors discussed in this review need to be evaluated and taken into consideration by policymakers and healthcare workers when formulating strategies to prevent pregnancies among adolescents.

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INTRODUCTION

The term “pregnant adolescent” describes a girl who becomes pregnant when she has not yet reached legal adulthood. Each year, an overwhelming 16 million girls aged 15–19 years and another 2 million girls below the age of 15 attain motherhood (1). Although the age at which individuals are considered as adult women differs from one country to another, adolescent pregnancy is a public health concern in both developing as well as developed countries (2, 3). Globally, 15 million women below the age of 20 had become mothers, comprising up to one fifth of the total population of women who have given birth, and each year, a substantial number of these women developed complications due to pregnancy and other birth-related illnesses (4). Studies also showed that adolescents were at higher risk of being infected with

sexually transmitted diseases (5), developed undesirable pregnancy outcomes when pregnant and were commonly involved in unsatisfactory or forced early sexual relationships (6,7). Though it is apparent that not every pregnancy during adolescence results in obstetric complications, early adolescent pregnancies ought to be reduced using effective programs and strategies (8).

In some developing countries, almost one-third to half of all girls who become pregnant do so before reaching 20 years of age, and complications caused by pregnancy-related conditions are one of the major causes of death among these young girls (9). Early marriage is common in many developing countries; therefore, the number of pregnancies among adolescents has increased. Furthermore, according to a study, these adolescents faced a social expectation to have babies soon after the wedding (10). An investigation showed that 60% of the female population were married at the age of 18 and almost one-fourth was already in a matrimonial relationship by the age of 15 in different parts of South Asia (11). Furthermore, adolescent pregnancy

may significantly impact girls' educational levels, psychological stability and employment opportunities. It also increased their financial and social reliance on their family and society (12).

Adolescent pregnancy is also among the social concerns in developing countries. One such country is Malaysia, which is situated in the Southeast Asia. Even though the total birth rate in Malaysia decreased recently (13), the total birth rate among adolescent females in two states, namely Sarawak and Sabah, which are located on the eastern side of the country, was almost 5% higher than in other states in Malaysia (14). Furthermore, although the total birth rate among adolescents was relatively low compared to the global estimate of the World Health Organization (WHO), i.e., 11%; Sabah and Sarawak accounted for 7.5% and 9.2% of this total birth rate, respectively. Statistics showed that 7.5% of the women in Sabah were married before they reached 15 years of age, and 37.7% of girls aged 15–19 were already married (15). Studies addressing individual and social factors such as socioeconomic factors, ethnicity, reproductive health services, education, knowledge, and other behavioral parameters related to adolescent pregnancy have been conducted (16). Nonetheless, adolescent pregnancy remains a serious concern that requires urgent intervention. With regards to other developing nations, a study conducted in five African countries showed that 25% of adolescents aged 15–19 years had become pregnant (17). Countries such as Nigeria and Chad were ranked among the top nations with high adolescent birth rates (18). Although these reports showed that pregnancy among younger adolescents had dropped, it continues to occur among older girls. Despite adolescents forming a sizable population in developing countries, there is comparatively little knowledge about their sexual behavior, and it is thus crucial to understand the risks that may be linked to adolescent pregnancy. Studies have also been conducted on adolescent pregnancy-related issues in ethnic minorities in developed countries (19). However, there were fewer studies that explicitly concentrate on adolescents from developing countries. Therefore, there is a need to review the research on various factors related to adolescent pregnancy, especially in developing countries. While deprived environment has increased the risk of adolescent mothers suffering from serious pregnancy-related outcomes, giving birth during adolescence also has other consequences in terms of educational and financial opportunities (20). This review intends to investigate the possible factors influencing this dilemma and thereby propose strategies to prevent undesirable influences surrounding adolescent pregnancy. Details of the studies that were selected in this review are highlighted in Table I.

RISKY SEXUAL BEHAVIOUR

Sixteen million adolescents under the age of 20 gave

birth each year globally, and many die due to pregnancy-related difficulties (21). This report indicated that deaths due to pregnancy-related issues were more among girls aged 15–19 years as compared to women above the age of 20. It is apparent that these young women had a higher risk of getting pregnant due to immature relationships and risky sexual behavior, resulting in premature pregnancy with adverse sociocultural and socioeconomic consequences (11). It was also evident that the age of the mothers was directly linked to health problems affecting both mother and child (18). In cases of adolescent pregnancies, the mother usually became pregnant from having sex with different partners without using any protection. Risky sexual behavior among adolescents also increased the risk of cancer and other sexually transmitted diseases, which further contribute to morbidity and mortality (22).

SEX EDUCATION

Effective sex education may produce positive changes and inculcate an understanding of the consequences of unhealthy sexual behavior, including adolescent pregnancy. Sex education has been incorporated into the high school syllabus globally as part of physical and health education. However, sex education has also been assigned to schoolteachers who may not be sufficiently well trained to deliver this subject (23). Recent research showed that one of the critical factors that cause adolescent pregnancy was due to the lack of education (2, 24), including sex education. Furthermore, applying nationwide sex education could cause certain issues in government schools, such as in Malaysia, as Malaysia's multicultural society may not easily accept school-based sex education (25). Nevertheless, a study has revealed that parents believe that schools should provide sex education to their children at an earlier age (26). Another study stated that adolescents who registered for such education in schools were less likely to be sexually active than those who did not register (11). Moreover, schoolgirls who received sex education were more committed to using contraceptives when involved in sexual activities than students who did not.

A study was conducted to evaluate factors influencing pregnancy among adolescent girls in Tanzania (27) who were residents of a place in the Ruvuma District called Tunduru. This study found that adolescents with lower educational levels were more likely to encounter the risk of early pregnancy than those with higher educational levels. Lower educational levels among parents, including the average number of years of education, also increased the possibility of adolescent pregnancy; as such parents may not have been able to provide necessary and adequate sex education to their adolescent daughters (28).

Governmental organizations faced numerous challenges when operating schools' educational programs to reduce

Table 1: Risk factors of risky sexual behaviour and adolescent pregnancy in developing country

Authors, Year of Publication	Study Location	Population	Study Design	Risk Factors of Adolescent Pregnancy
Jamaludin Z 2002 (3)	Malaysia	Mufti and Registration Department	Cross Sectional study	Poverty, family freedom, divorce, excessive freedom
Acharya et al. 2014 (11)	Nepal, Bangladesh, India and Sri Lanka.	Pregnant adolescents	Systematic Literature Review	Socio-economic factors, low educational attainment, cultural and family structure
Vincent & Alemu, 2016 (12)	South Sudan	Pregnant adolescents 15 – 19 years	Cross Sectional Study	Lack of school fees, lack of parental care, communication and supervision, poverty, peer pressure, non-use of contraceptives, desire for a child, forced marriage, low educational level and need for dowries
Panting et al 2019 (14)	Sarawak, Malaysia	Pregnant adolescents	Literature Review	Rural–urban migration, dysfunctional family relationship, flaws in marriage customary law, alcohol and drug abuse, low awareness on sexual and reproductive health, and pornography
Mathews and Mekuria 2018 (16)	Southern Ethiopia	School adolescents	Cross Sectional Study	Being grade 11 students, grade 12 students, not knowing the exact time to take emergency contraceptives, substance use, living with either of biological parents and poor parent-daughter interaction
Brahmbhatt et. al. 2014 (20)	Urban disadvantage settings in Baltimore, Johannesburg, Ibadan, New Delhi, India	Sexually experienced adolescent	Cross Sectional Study	Early sexual debut, being raised by someone other than the two parents, alcohol use and binge drinking in the past month; greater community violence and poor physical environment.
Mohr et.al. 2019 (24)	Low- and middle-income countries	Pregnant adolescents	Systematic Literature Review	Low educational level unemployed adolescents, low socio-economic factor
Malisa J.N. 2015 (27)	Tunduru, Tanzania	Secondary school female adolescents	Cross sectional study	Poverty, peer pressure, inability to make the decision on the use of family planning methods on their own, single parenting, advancement of technology, little access of family planning method, family separation.
Nwoguzie 2020 (28)	B.C. Nigeria	Medical students	Cross sectional study	Low parental income and/or poorer homes
Mohd Zain, 2015 (36)	Malaysia	Pregnant unmarried women from public hospitals and public shelters	Cross Sectional study	Adolescents from urban areas, from a low socioeconomic group, lived with parents prior to pregnancy. Age, studying status alcohol use exposure to pornographic material, contraceptive use, and social support
Jamaludin, Z 2013 (41)	Malaysia	Adolescents aged 15-22 years old	Qualitative study	Family problems, sexual relationship with peers and boyfriend, drug abuse and victims of rape cases
Badaki O L 2017 (47)	Kaduna State, Nigeria	Secondary school students	Cross Sectional study	Peer and social pressure
Mushwana et al. 2015 (49)	Giyani Municipality in South Africa	Teenage girls attending high schools	Cross Sectional study	Inadequate sexual knowledge, knowledge, changing attitude towards sex, peer pressure
Abdullah S, 2014 (50)	Malaysia	Pregnant teenagers in rehabilitation centers	Cross Sectional study	Teenage who engage in sexual behavior at an earlier age especially among their acquaintance.
Mothiba T.M.2012 (55)	Limpopo South Africa	Pregnant teenagers attending antenatal care at one clinic in the Capricorn District of the Limpopo Province..	Cross Sectional study	Lack of knowledge about sex and how to use contraceptives; barriers to access contraceptives including negative attitudes of health staff; peer pressure; sexual coercion; low self-esteem; low educational expectations; poverty; family breakdown; and heightened sex-based messages in the media.
Tsebe, N.L. 2012 (56)	South Africa	Northwest Province, Limpopo, South Africa	Cross Sectional study	Openness and transparency, sexual practices, access to the government grant, peer influence, lack of recreational facilities, substance abuse by the learners and attitudes of Health Care Workers

adolescent pregnancy (29). Furthermore, educators may feel too intimidated to teach sex education and well-being as they may not be skilled enough to deal with subjects that were considered confidential (30). In many countries, sexual health education is being imparted during health and physical education courses as well as during ethical and religious subjects, such as Islamic education, science and biology. Teachers usually lacked knowledge on sex education; therefore, they were unable to effectively teach their students, which could ultimately expose students to unhealthy sexual behavior. Sex education is a crucial source of health knowledge

for adolescents that require effective educators to impart lessons on healthy sexual behaviour and thus help adolescents make appropriate decisions (31). Effective sex education will therefore increase their knowledge and create shifts in beliefs and attitudes about sexual behavior (32).

Regarding cultural and religious concerns, sexuality is considered a sensitive issue in many eastern countries (33). As a result of this sensitivity, adolescents did not receive adequate education, information, or guidance on reproductive and sexual health. Inadequate

understanding of sexuality and their bodies makes them vulnerable when involved in unexpected and risky sexual encounters that may result in sexually transmitted diseases, pregnancy and unsafe abortions. A lower degree of sexual knowledge, especially regarding the reproductive organs and the function of contraceptions, may cause unintended pregnancy among adolescents (31). School teachers, the media, parents and relevant organizations are thus encouraged to deliver fundamental information to adolescents, particularly to girls, about sexuality, healthy relationships with their partners and the outcomes of pregnancy according to their beliefs and cultural norms.

PARENTAL AND SOCIAL SUPPORT

Social support is described as instrumental and emotional support that has an important influence on health behaviors and physical health outcomes (34). A study conducted in Mexico found that family support that was accompanied by guidance from schoolteachers and neighbors could prevent adolescents from becoming sexually active (35). However, social support may not clarify the outcomes of sexual activity if it was associated with forced sexual activity, especially at lower ages. Mohd Zain (2015) argued that there were times when inappropriate support extended by families and constant engagement with members of the same age group may lead to sexual activity among adolescents (36). Studies found that adolescents whose parents spent more time guiding their children were least likely to be involved in sexual activity (37). Findings from another quantitative study conducted at a university in South Africa revealed some interesting facts about parent-child relationships (38). Another study showed that parents usually did not interact with their children regarding sex education or make them aware of the problems related to sexual behavior (39). Young people had the idea that discussing sexual matters with their parents was embarrassing, although it is a fact that discussing sexual issues with parents is believed to be important for preventing adolescents from being sexually active (26). Another qualitative study from South Africa suggested that parents and elders can guide adolescents to avoid bad company that may eventually lead them to make wrong choices. Nonetheless, this study found that 48.3% of the studied adolescents had never discussed sexual matters with their parents Only 6.3% engaged and had open discussions with their mothers (40). Another study of six pregnant adolescents discussed problems relating to communication with parents. The extreme freedom given by parents led these adolescents to be sexually active. The lack of devotion from parents was also found to be a factor that influenced adolescents to be more attracted to sexual activities (41).

Parents are the most influential figure for many children. It is recommended that families develop a connection between parents and adolescents that is affectionate and

based on respect and mutual trust. It can be suggested too that parents to be accessible, ensuring that teens feel comfortable speaking with them, whether to express emotions, discuss thoughts, or simply ask questions. Moreover, setting standards such as time limits, dating rules and standards of acceptable behavior, especially through an open and respectful family conversation process appears essential. Explaining the cultural or religious values that the family holds regarding adolescent pregnancy is vital to offer teens' independence, but it is also essential to teach them not to cross over the line.

SOCIAL AND PEER INFLUENCE

Adolescent girls usually reveal their experiences with relationships to their friends; and this may greatly influence their peers, particularly regarding sexual matters (42). In some cases, adolescents faced pressure to gain acceptance from their peers as they did not want to be left out of the latest trends (43). The influence of social groups, society and peers on adolescents may thus increase the risk of unhealthy sexual behaviour (44).

Among Taiwanese adolescents, exposure to media encouraged early sexual debut (45). In addition, a study showed that young men experienced more peer pressure than women in terms of engagement in sexual behaviour (46). Scholars have frequently delivered various unique behavioral models for adolescents in relation to this issue. In contrast, another study in Nigeria reported that female adolescents were more likely to compare their sexual behavior with their peers (47) than male adolescents. Furthermore, one of the predominant psychosocial factors that influenced adolescents' sexually risky behavior was their peers' perception of these behaviors (27). Another study in South Africa investigated the knowledge and ideas regarding contraception, pregnancy and sexual behavior among girls studying in secondary schools (48). This study also revealed that the friends' circle had a great influence on adolescents' sexual activities. Mushwana et al. (2015) studied the factors associated with pregnancy among adolescents in the Greater Giyani Municipality of the Limpopo province in South Africa. This study found that knowledge and decision-making began to transform as adolescents experienced changes from childhood to youth, which involved the progression of identity development. During this period, adolescents spent more time with peers, classmates and friends compared to siblings and parents, which may inspire their preferences and choices (49). Another study described peer influence as an important factor that predisposed adolescents to become pregnant (46). Meanwhile, in another study in Tanzania, respondents admitted that their peers inspired their involvement in early sexual behavior as they did not want to be perceived as old-fashioned. At times, they also responded to sexual requests from peers in exchange for money (27).

Correspondingly, another study was conducted in South Africa to explore knowledge, attitude and behavior regarding emergency contraception, adolescent pregnancy and sexual behavior among female students in a secondary school. The girls confirmed that peer pressure was one of the significant factors that influenced adolescent pregnancy (11). Mushwanaetal (49) studied factors influencing adolescent pregnancy rates in the Greater Giyani Municipality, Limpopo Province, South Africa. They discovered that insufficient sexual understanding (61%), peer pressure (56.3 %) and changing attitudes toward sexual behavior (58.9%) were factors that contributed to the above-average pregnancy rate among these adolescents. Additionally, Abdullah mentioned that adolescents became pregnant after being assaulted by peers or someone they knew (50). Other studies discussed structural factors such as peer pressure including intimidation and sexual abuse, which had an influence on adolescent pregnancy (51).

PARENTS' SOCIOECONOMIC STATUS

Cook and Cameron (52) described poverty, having unemployed parents, having parents with lower salaries and low educational achievements as the main factors contributing to adolescent pregnancy. They also explained that economic inequality and poverty among adolescent girls result in the unavailability of contraceptives, unsafe abortions, unwanted pregnancies, HIV/AIDS transmissions and an increased morbidity and mortality rate for both newborns and mothers. Deprivation and poverty had significant associations with adolescent pregnancy (1,2,8,27,51). Moreover, adolescent pregnancy rates were higher among teens brought up in more impoverished families who did not have proper education or sufficient earnings (52). Those with unemployed parents and those living in poverty had a higher risk of early sexual behavior, as such behavior is one way to earn money.

REPRODUCTIVE HEALTH SERVICES

The presence of reproductive health services is one of the critical factors that affect adolescent pregnancy. A study in a developing country projected that more than 200 million females would like to postpone or stop childbirth but were not using any methods of contraception (53). This was because of a lack of adequate reproductive health services, which caused choices based on deprivation and limited choices on access to contraceptives, especially among younger or poorer adolescents with less knowledge on the issues relating to early pregnancy (18,50). Holt et al. discussed the importance of health care availability by interviewing health care workers in South Africa (54). The respondents in this study argued that adolescents' sexual and reproductive well-being were highly associated with the accessibility, availability and usage of health care products and services. These findings revealed a significant impact of the usage of

pregnancy prevention methods such as reproductive health services, male involvement and adult-teenager communication programs, which in turn may reduced the risk of unwanted pregnancy and contracting HIV among adolescents (55).

A study on adolescent pregnancy in a high school in North West Province, South Africa, showed that healthcare workers suggested that students should not have access to reproductive healthcare public services because they might make incorrect informed choices. The health care workers' attitude might make the health care systems unfavorable to these students, who would then prefer to obtain information from their colleagues or peers (56). This might expose them to the wrong information or guidance. While parents' permission is not mandatory for adolescents to access reproductive and contraceptive services, nursing staff would sometimes inform parents about condom usage among adolescents and thus breach their confidentiality and privacy. Adolescents would also sometimes feel embarrassed to seek contraceptive services (57). Furthermore, religious guidelines could prohibit the use of contraceptives among unmarried adolescents (58).

CONCLUSION

Recently, there has been much debate about early pregnancy among adolescents, with great emphasis on its determinants and consequences. Pregnancy during adolescence is still considered a serious public health dilemma that must be addressed. The above determinants and risk factors of adolescent pregnancy are important and should be taken into consideration when planning policies and strategies to avoid adolescent pregnancies.

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