Abstract

Context: The high incidence of unplanned pregnancy among adolescents is a significant public health issue contributing to maternal and child mortality. This review aimed at identifying risk factors influencing unplanned pregnancy and measures applied by nurses to provide quality healthcare services to rural adolescents.

Evidence Acquisition: We conducted a narrative review on risk factors influencing unplanned pregnancy and measures taken by nurses to provide quality healthcare services to adolescents. An ecological model was adopted in guiding the analysis. The data source were the research and review articles published in peer-reviewed journals using PubMed, Science direct, Scopus, Google Scholar, and Web of Science. We hired two independent reviewers for data extraction. Initially, the records of 843 articles were assessed, out of which 60 articles met the inclusion and exclusion criteria, hence included in the review.

Results: The model recognizes multiple levels of influence on health behaviours, including intrapersonal factors (individual’s educational status, sexual activity and contraceptives use), interpersonal factors (poor parent-adolescent communication, influence of peers and media), organizational factors (sexual and reproductive health (SRH) education and services), contextual factors (socio-cultural norms), and public policy (which provides no accessibility to quality SRH services for adolescents). Youth-friendly SRH education and services were some of the identified Nurses’ roles in preventing unplanned pregnancy among rural adolescents.

Conclusions: The review identified five major risk factors influencing unplanned pregnancy among rural adolescents, namely educational level, use of contraceptives, peer influence, quality of sexuality education, and availability of youth-friendly SRH services. Roles of nurses in providing quality healthcare services to rural adolescents for the prevention and management of unplanned pregnancy were discussed.

Keywords: Factors, Unplanned pregnancy, Adolescents, Rural population, Nurse’s roles


1. Context

The World Health Organization has reported that approximately 12 million girls aged 15 to 19 years and 777,000 girls younger than 15 years give birth every year in developing countries (1). Globally, adolescent pregnancy remains a major contributor to maternal and childhood mortality and an interplay between poverty and truncated educational opportunities and adolescent pregnancy leads to a vicious cycle (1, 2). Adolescent pregnancies are more likely to occur in marginalized communities, commonly driven by poverty, lack of education, and employment opportunities; furthermore, there are up to three times more adolescent pregnancies in rural and indigenous populations compared with urban populations (1, 3, 4). In 2018, Nigeria Demographic and Health Survey (NDHS) reported that adolescents living in rural areas started childbearing earlier than their urban counterparts (27% versus 8%) (5). In a similar vein, a study in rural Bangladesh showed that the rate of childbearing prior to the age of 20 was lower in urban areas than in rural ones, with around 70.0% of the respondents living in rural areas (6). This is probably due to the geographic dispersion of rural communities and their limited access to quality health services, possibly increasing the risk of ill health of rural adolescents as compared with their urban counterparts.

Unplanned (or unintended) pregnancy among adolescents includes both mistimed (pregnancy occurring earlier than desired) and unwanted pregnancy (pregnancy occurring when no children were desired) among girls between the ages of 10 and 19 years. Adolescent childbearing has major ramifications for adolescent mothers, their children, and the entire society. More often than not, adolescent girls seek unsafe abortion, drop out of school, and drift away from their
peers and family due to unplanned pregnancy (2, 7, 8). Pregnant adolescents are often considered high-risk clients because they have a high incidence of pregnancy-induced hypertension, iron-deficiency anaemia, and premature labour (9). The neonates of adolescent mothers usually have low birth weights (LBW) (10), and they are more likely to grow up in poverty and run a higher risk of accidents, behavioural problems, and becoming adolescent mothers themselves, thereby perpetuating the vicious cycle of ill health, poverty, and truncated educational opportunities (11).

Despite the various efforts of many countries across the world in employing several prevention strategies to address this problem, unplanned adolescent pregnancy is still increasing in Africa (1, 3). It is against the backdrop of both short- and longer-term adverse health outcomes that adolescent pregnancies are largely viewed as a public health issue, necessitating the assessment of influencing risk factors. Therefore, the objective of this study was to review the existing literature from related articles and studies on factors influencing the rate of unplanned pregnancies among adolescents in rural communities. Also, we identified the measures taken by nurses to provide solutions to put an end to the cycle of poverty and reduced opportunities and lower the maternal and neonatal morbidity and mortality associated with unplanned pregnancies among adolescents. It is important to achieve the United Nation’s (UN) target, which is to reduce maternal mortality to less than 70 per 100,000 births under the Sustainable Development Goal (SDG) 3 by 2030 (12).

2. Evidence Acquisition

This article was based on the review of published scientific work on unplanned pregnancy among adolescents in rural communities and the roles played by nurses to provide quality healthcare. This review employed the ecological model adapted and modified from McLeroy (Figure 1) as the guiding framework for analysis (13). The model identifies the five levels of influence on health behaviour, including intrapersonal/individual factors (influencing behaviour such as knowledge, attitudes, beliefs, and personality), interpersonal factors (interactions with other people, which can enhance or impede interpersonal growth that promotes healthy behaviours), institutional or organizational factors (rules, regulations, policies, and informal structures which constrain or promote healthy behaviours), community factors (norms existing among individuals, groups, or organizations and can limit or facilitate healthy behaviours), and public policy factors (local or national policies and laws that regulate or support actions and practices). All these levels are associated with several risk factors influencing adolescent sexual behaviours that contribute to unplanned pregnancy. Some studies employed this model to analyse sexual behaviour influencing adolescent pregnancy (14, 15).

We searched the literatures using international databases such as PubMed, Science direct, Scopus, Google Scholar, and Web of Science and a combination of keywords, including ‘unplanned pregnancy’, ‘contraceptive’, ‘family planning’, ‘sexuality education’,

![Figure 1: Conceptual framework: The ecological model Adapted and modified from the ecological model developed by McLeroy (1988)](image-url)
Unplanned pregnancy

Individual Factors
Educational Status

Low level of education among rural adolescents results in a poor understanding of reproductive health and contraceptive information. A study in Bangladesh showed that adolescent girls with no education had 2.76 times higher odds of adolescent motherhood compared with their counterparts who had higher than secondary education (6). Similarly, a report from NDHS revealed that adolescents with more than secondary education tended to start childbearing later than those with no education (5). Education influenced modern contraceptive use among sexually active adolescents in Burkina Faso, Ethiopia, and Nigeria (16). Therefore, higher education reduces the likelihood of early marriage, delays childbearing, and decreases adverse pregnancy and birth outcomes (17).

Knowledge and Attitude Regarding Sexual Reproductive Health

Knowledge and utilization of SRH services among rural adolescents is still very low. Studies revealed that adolescents had a poor knowledge of adolescent reproductive health services and choices (18, 19). Most rural adolescents lacked the adequate knowledge concerning changes with puberty in boys’ and girls’ transition into adulthood (19, 20). Only 21.5% of the adolescents in rural Ethiopia used reproductive health services because of parental disapproval, lack of basic information, and pressure from partners, which were associated with poor access and uptake of reproductive health services among rural adolescents (19). It is worth mentioning that a majority of adolescents are more aware of modern contraception than emergency contraceptive pills (ECPs). Studies in Nigeria showed that many adolescents lacked the sufficient knowledge of ECPs (17, 21, 22). Also, a qualitative study conducted in rural Congo (23) revealed that despite adolescent girls’ fear of getting pregnant at an early age, male attitudes were a major barrier to the use of contraceptives as most of them believed that it was the girl’s responsibility to prevent pregnancy. Rural adolescents engaged in premarital sex out of curiosity and to gain sexual experience while others had premarital sex due to peer pressure as a test of virility (23). Many adolescents had no propensity for misconceptions and myths provided by friends and relatives (24). Therefore, low level of knowledge and negative attitude about SRH exposed adolescents to unprotected sex, leading to unplanned pregnancy.

Sexual Activity and Utilization of Contraceptives

Various studies have shown that many adolescents engage in sexual activity at an early age (19, 23-29). Some adolescents have more than one sexual partner and do not use any form of contraception during sexual intercourse (14, 25, 29, 30). In addition to cervical carcinoma and spread of infection like Human Immunodeficiency Virus (HIV), sexual...
activity with no use or incorrect use of condoms can lead to unplanned pregnancy among adolescents (31). Studies in rural communities in Nigeria showed that a majority of adolescents reported having more than one sexual partner, yet many preferred to not use condoms despite the increased HIV prevalence as it was not pleasurable (22, 29, 32). Of all the rural adolescents in Nigeria claiming to have had sex, very few used condoms during coitus (29). Moreover, a majority of adolescents had never used emergency contraceptive pills (21, 22, 33, 34) while 85.7% of those who had, used them incorrectly (21). This implies that a simple explanation for adolescent’s unplanned pregnancy is that they engage in sexual intercourse without using contraceptives, failure of a contraceptive method, or limited access to contraceptives.

**Ability to Avoid Unwanted Sex and to Use Contraceptives**

Adolescents’ ability to think straight, make decisions about contraceptives and to refuse sex can influence unplanned pregnancy. The ability of an adolescent to negotiate sex might be affected by the intake of any mind altering substances. Alcohol intake can lead to adolescent pregnancies because influenced adolescents engage in sexual intercourse without making calculated decisions (35). In certain situations, adolescent girls under the influence of a mind altering drug may not be able to resist or refuse sex, hence prone to sexual violence (1, 36). Adolescents who use substances before or during sex are less likely to use condoms or other forms of contraception (37). Noteworthy, sexual coercion and violence also make it difficult for young women to negotiate safer sex, thereby predisposing them to unplanned pregnancy. Young girls are exposed to sexual abuse (28). Some adolescents discussed sexual coercion by authority figures (such as teachers) or rape by strangers as their major experiences (15). Some studies found an association between gender-based violence including child sexual abuse and forced first sex and the subsequent unintended pregnancy among rural adolescents (14, 27, 28, 38, 39). Accordingly, it is imperative to initiate educational programs dealing with sexual violence prevention and provision of protective measures, such as seeking help in the event of becoming a victim of sexual violence or rape.

**Interpersonal Factors**

**Peer Pressure**

One of the major factors affecting adolescents' behaviour is peer influence. Adolescents are often misled by wrong information obtained from their uninformed peers. For instance, adolescents in rural Nigeria obtained confusing and misleading information from peers on safe period, painful menses, puberty maturational problems, and emergency contraception (27). Some adolescents were under peer pressure to have unprotected sex, leading to early pregnancies and child marriages (23, 28, 27, 26).

**Parent-adolescent Communication on SRH Issues**

Parents have been regarded as the most important influence when it comes to sexual reproductive health information and choice. However, in rural communities, most adolescents never discuss sex, birth control, or pregnancy with their parents (23, 25, 26). A study in Nigeria revealed that 70% of rural adolescents had never discussed sex with their parents (30). This has been found to be due to the lack of interest or readiness to talk and shyness, modesty, and embarrassment on the part of the child (26). Maternal characteristics that contribute to communication barriers with daughters included being unavailable or unapproachable, lack of trust, and poor monitoring of adolescents (25). Fathers were perceived by adolescents to be more strict, intimidating, unapproachable and/or unavailable to discuss sexual issues with (25, 30). Many adolescents are ignorant of issues such as puberty, pregnancy, and contraception because of the cultural taboos (23, 24, 35). This implies that there is no meaningful parent-child communication on sexuality, conception, and contraception among rural adolescents. Parenting seminars would help to arm adolescents’ parents with adequate knowledge and required skills to improve communication with their children.

**Organizational Factors**

**School-based Sexuality Education**

School-based sexuality education can reinforce the sexual information adolescents receive from home and other settings like religious and community among a larger number of adolescents in rural communities. School-based education improved adolescents’ knowledge and attitude towards sexual reproductive issues (14, 38, 39, 40). Many rural adolescents held that sexuality education should be made a compulsory subject in schools (30) while a majority believed it should be thought by health providers (39). However, some teachers in rural South Africa reported that students became fatigued with teachers’ instruction on sexual topics, and they (teachers) lacked accurate information on sexuality (20, 38). Smith and Harrison reported that teachers had strong opinions and a sense of moral...
authority regarding young people’s sexuality, possibly impeding a proper delivery of school-based sex education (38). Therefore, school-based sexuality education alone is not enough to curb the rise of adolescent pregnancy.

**Family Planning Services**

Adolescents have difficulty accessing contraceptive use in rural areas. For instance, adolescent girls cited the judgmental attitudes of health providers while adolescent boys mentioned fear of side effects and stigma surrounding the use of contraceptives (23). Nurses have unfavourable attitudes towards the provision of contraceptives for unmarried adolescents. According to Ahanonu (41), more than half (57.5%) of healthcare workers perceived the provision of contraceptives for unmarried adolescents as promoting sexual promiscuity, and the attitude of 42.7% was informed by the Nigerian culture which does not support premarital sex. Furthermore, 51.7% reported that unmarried adolescents should be asked to abstain from sex rather than providing services for both married and unmarried adolescents (41). One approach to preventing more than 95% of unwanted pregnancies is the proper use of condoms and ECPs among adolescents who run a higher risk of unprotected sexual intercourse, contraceptive failure, incorrect use of contraceptives, and coerced sex (17, 33-34, 42, 43). However, studies have revealed that nurses’ negative attitudes towards the use of contraceptives among adolescents prevent their access to ECPs. Some nurses fear that adolescents’ knowledge or use of ECPs may lead to more unprotected intercourse (promiscuity) and a decrease in the use of a regular method of contraception (34, 42, 44). Reaching adolescents with preventive reproductive health services has always been a challenge in rural communities; ECPs provide adolescents with a bridge to other reproductive health services.

**Post-abortion Counseling (PAC) Services**

Globally, approximately 3.9 million unsafe abortions among adolescent girls are caused by their high susceptibility to repeat unplanned pregnancies, thereby contributing to maternal mortality, morbidity, and other chronic health problems (1). Post-abortion counselling can help promote the acceptability of contraceptives and safe sex practices and prevent repeated unplanned pregnancy among adolescents seeking or having recently had an abortion. Nonetheless, in the event of an unplanned pregnancy, adolescent girls have difficulty in accessing safe abortion services and post-abortion counseling due to the stigma associated with sexual activity, unmet need for contraception, and legally restricted abortion in most rural areas (45, 46). The difficulty experienced by adolescent girls in accessing PAC services was further explained by Onasoga and colleagues (47) who interviewed the adolescents in Nigeria, where adolescents experienced fear of unpleasant reactions from parents, inability to access PAC services, health care providers’ failure to ensure privacy, delay in treatment due to hospital protocol, and non-availability of prescribed drugs, which significantly affected the quality of PAC care services received by adolescents. As a result, adolescents have a greater tendency to seek abortion from untrained providers or frequently make multiple attempts to end their pregnancies instead of using one safe and effective procedure (11). Access to PAC services is crucial for preventing repeated unplanned pregnancy, infection from unsafe abortion, and potentially fatal injury.

**Influence of Media**

Media is a major source of information concerning SRH among adolescents (26, 30). However, it also significantly contributes to the early exposure of adolescents to sexual relationships and explicit sexual innuendos in both rural and urban communities (26). Kimemia and Mugambi noted that teenage pregnancy was more prevalent in rural communities, and adolescents focused more on sex-related information from electronic media. Based on their findings, 63.6% of the teachers and 52.3% of the adolescents reported that electronic media led teenagers to have sex at an early age. Adolescents’ parents reiterated that programs on television, the Internet, and social media barely show culturally acceptable norms and values, also providing misleading information on sexuality (26).

**Community Factors**

**Poverty and Socio-cultural Practices**

Certain cultural practices such as early marriage and childbearing have negative effects on an adolescent’s sexual life. Poverty and early marriage/childbearing are interrelated. In Nigeria, adolescents in the highest wealth quintile tend to start childbearing later than those in the lowest quintiles (5). This might be attributed to the fact that the poor tend to marry at an early age whereas those in richer groups continue with their education and other career goals (48, 49). It may also be that adolescents from poor households become sexually active due to poverty and impoverished conditions, which is highly common in rural communities (49). Child marriage has contributed to a high prevalence of unplanned pregnancy among adolescents in India and Kenya (50, 51). There
was an association between child marriage and high fertility with multiple unplanned pregnancies among adolescents (23, 28, 51). Some children get married as early as five years in Nigeria, and sexual intercourse at around ten or twelve years of age is culturally permitted, particularly in the northern parts of Nigeria where there are several cases of forced marriages and gifting of female children to older men for marriage (52). In a qualitative study among adolescents in Kenya, adolescent’s sleeping arrangements, night funeral ceremonies, replacement of a deceased sister in marriage, widow inheritance, and early marriage were the cultural factors predisposing adolescents to sexual risk (50). The study also revealed that poverty exacerbated risky cultural practices, hence the fact that preventive measures should target poverty as well as cultural factors. Moreover, inability to pay for school fees and other materials for schooling contributed to the prevalence of unplanned pregnancies among adolescents as they tended to be assisted by older men who eventually demanded for sex (2, 27).

Public Policies

Based on a review on policies, strategies, and laws regarding adolescents and youth in selected countries (Burkina Faso, Ghana, Niger, Nigeria, and Sierra Leone) in West Africa, several policies support adolescents’ access to SRH services (53). However, most countries had a complex – and often contradictory – set of laws, policies, and strategies pertaining to adolescents and youth. The policies often do not provide any specific provisions on the accessibility and quality of these services or training of health care providers. These often acted as significant barriers to their access and uptake of health services, increasing their susceptibility to unplanned pregnancy and child marriage (53).

Implications for Nurses

In many countries, nurses constitute more than 50% of the national health workforce, and they are key players in the health team (54). They are agents of change in rural communities. Compared with other healthcare providers, nurses are in a unique position to build trusting relationships with adolescents and identify those who are at a risk of unplanned pregnancy. In order to reduce the reproductive health problems faced by underserved adolescent population, it is imperative that nurses demonstrate competence in the following:

Sexual Health Education

Initiating early sex education at home by parents or teaching reproductive health education as part of school curriculum may not be effective in reducing the rate of unplanned pregnancies in the community. For instance, in a study by Borawski and colleagues (55), it was reported that teaching technical skills (condom use) and interpersonal skills (negotiation) might require a unique set of skills and experiences that parents or health education teachers might not typically have. The study further revealed that adolescents educated on STIs and HIV prevention by school nurses reported significantly higher knowledge of HIV, other STIs, and condom use with significant and sustained changes in attitudes; meanwhile, those taught by health education teachers reported significantly fewer changes, with sustained improvement in condom knowledge only (55). Most abstinence-only programs often provide medically inaccurate and potentially misleading information which can merely delay the sexual intercourse (48).

It is essential to provide nurses with a unique set of skills and experiences required for effective reproductive and sexual health education for adolescents. An Iranian study on adolescents’ sexual health education showed that despite desirable knowledge, attitude, and confidence of midwives in sexual health education, a majority (60%) of the midwives exhibited a poor performance in teaching adolescents the required skills to control their emotions, instincts, homosexual tendencies, and masturbation (56). Some nurses did not feel confident communicating effectively about such issues as sexual and school violence and family or intimate partner relationships in rural areas (57). Therefore, nurses need to acquire and demonstrate the technical competence required in ensuring that adolescents have sufficient knowledge regarding their own health and where and when to obtain health services. Nurses should regularly provide information about sexual and reproductive health through community outreach, campaigns, and workshops in schools, clinics, community centres, and religious settings because not all adolescents have access to education in school. Nurses should also respect adolescents’ rights to information, privacy, confidentiality, non-discrimination, non-judgmental attitude, and respectful care (58).

Contraceptive Information and Services for Unmarried Adolescents

Nurses need to demonstrate the technical competence required to provide effective health services to adolescents. Literature shows that increased use of
contraceptives and counselling among adolescents in youth-friendly clinics will reduce unplanned adolescent pregnancy (22, 32, 35). Nurses should be competent not only in managing adolescents with certain sexual problems, but also in controlling their own attitudes, beliefs, and prejudices that can interfere with their ability to provide confidential, non-discriminatory, non-judgmental, and respectful care. Moreover, realizing they are at high risk of pregnancy, adolescents seeking ECPs will probably be more open to discussion concerning their contraceptive and other health needs. Therefore, there is need for nurses to receive continue education on ECP to improve their knowledge, dispensing practice, and attitudes towards ECP within a limited time frame to all adolescents running a risk of unplanned pregnancy. Also, the Nursing and Midwifery Council of Nigeria's Curriculum for education should provide detailed information and practical knowledge on ECPs to demystify the negative perceptions and attitudes of future nurses towards ECPs.

Youth-Friendly Antenatal and Childbirth Care

Adolescent mothers face higher risks of eclampsia, puerperal endometritis, and systemic infections compared with women aged 20 to 24 years, and their babies face higher risks of low birth weight, preterm delivery, and severe neonatal conditions (1, 11, 31, 46). Acknowledging the importance of the issue, the UN SDGs aim to improve maternal health by reducing maternal mortality ratio to 70 per 1,000 live births by 2030 (12). The challenge is exacerbated as nurses and midwives find it difficult to fully supervise all these pregnancies since adolescents avoid clinic attendance. For example, findings from a qualitative study in Uganda showed that ANC environment was alienating to pregnant adolescents as the health workers were rude and unsympathetic (7). A study in Nigeria revealed that adolescents’ partners and families failed to provide financial and material care, and their parents used abusive words against them (7). In Zambia (59), adolescents reported unfavourable opening/waiting hours for consultations at health facilities, inadequate privacy and confidentiality, and no specific rooms or spaces for pregnant adolescents at the clinic. Pregnant adolescents recalled their experiences of ANC in South Africa and perceived themselves as not being adequately cared for, inferior, judged, and forced to be in an environment that is insensitive to their needs (60). Pregnant adolescents desired their own waiting area and additional nurses at the clinic so that they would not be subjected to humiliation, scrutiny, and disapproval from older pregnant women (60). Therefore, nurses should champion and implement adolescent-friendly health care policies that will ensure a welcoming and clean environment, reduced waiting times, convenient operating hours, and flexible appointment procedures in health facilities. These will prepare pregnant adolescents for birth and birth-related emergencies and improve their access to and use of skilled antenatal and childbirth care. Consequently, morbidity and mortality associated with adolescent’s pregnancy and childbirth will be minimized, immensely contributing to the achievement of SDGs by the year 2030.

4. Conclusion

Unplanned pregnancies among adolescents are public health issues in rural communities. The present review identified five major risk factors influencing unplanned pregnancy among rural adolescents, including low level of education, poor socio-economic background, peer influence, inadequate quality of sex education, and absence of youth-friendly SRH services. Therefore, nurses’ roles in improving adolescents’ access to quality care should be tailored to providing adequate and quality sexual health education, giving contraceptive information and services for unmarried adolescents, and advocating for youth-friendly antenatal and childbirth care. This will invariably contribute to the promotion of adolescent health and reduced adolescent pregnancies in rural communities.

5. Recommendations

Literature shows that unplanned pregnancy among adolescents is a global problem that has hit Africa worst. As agents of change in rural communities, nurses should therefore confront the problem of unplanned pregnancy among adolescents through different approaches:

They should attend more conferences and seminars to acquire adequate knowledge and technical competence in providing quality health services to all adolescents irrespective of their ability to pay, age, marital status, educational level, ethnic origin, sexual orientation, or other characteristics. They should also engage in partnerships with adolescents to develop age and developmentally appropriate sexual and reproductive health education, behaviour-oriented communication strategies, and counselling to adolescents in rural community. Nurses ought to interact with adolescents in a friendly manner and respect their rights to information, privacy, confidentiality, non-discrimination, non-judgmental attitude, and respectful care. They should
also implement systems to ensure adolescents’ parents and other community members have sufficient knowledge of factors, consequences and prevention of unplanned pregnancies among adolescents via community outreach, campaigns, and workshops.

Government should make policies that ensure quality and accessible SRH services with adequate training of health care providers through agencies such as health institutions and Ministries of Health. It should also establish youth-friendly SRH centres in rural communities so as to encourage nurses to embark on massive campaigns to prevent unplanned pregnancy and its setback among adolescents.

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