RESEARCH ARTICLE

Teenage pregnancy in Nigeria: professional nurses and educators' perspectives [version 1; peer review: 2 approved]

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Abstract

Background: Teenage pregnancy has been regarded as a negative occurrence in recent times due to its various negative consequences on the overall wellbeing of the teenage mother and her child, the whole family system and the entire community at large. Teenage pregnancy rate is a powerful indicator of the total well-being of a population.
Purpose: The aim of the study was to explore professional nurses and secondary school teachers' own perspectives on teenage pregnancy and to ascertain the current teenage pregnancy prevention programmes within the two selected communities in Kwara and Edo states in Nigeria.
Methods: The study was qualitative and contextual with an exploratory strategy. A total of 80 participants, who were professional nurses and secondary school teachers, responded to the semi-structured interview and completed a questionnaire on demographic data. Template analysis style was combined with content analysis for data analysis.
Results: Our findings revealed limited teenage pregnancy prevention initiatives in the communities. The majority of the participants expressed that teenage pregnancy is a common occurrence in their communities, but it is not acceptable. More than half of the participants did not accept the usage of contraceptives by teenagers.
Conclusions: The study identified a number of factors that may influence the rate of teenage pregnancy in the communities. Therefore, strategies to reduce teenage pregnancy should focus on building social capital for teenagers in communities, making information on contraception more accessible and offering programmes that empower girls in the area of sexuality.

Keywords

Teenagers, teenage pregnancy, professional nurses, educators, contraceptives, perspectives, intervention programmes, Nigeria

Open Peer Review

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Introduction

According to Kanku and Mash[1], teenage pregnancy can be defined as a teenaged or under-aged girl within the ages of 13–19 years becoming pregnant. Globally, the world's population comprises 1.2 billion young people between the age of 15–24 years; the majority of these young people live in Sub-Saharan Africa and are susceptible to teenage pregnancies and sexually transmitted infections (STIs)[2]. Teenage pregnancy has been regarded as a negative occurrence in recent times due to its various negative consequences on the overall wellbeing of teenagers[2–4]. The consequences of the sudden role change that occurred to a teenager due to an unplanned childbirth are felt not only by the teenage mother and her child, but the whole family system as well as the entire community[5,6].

Regardless of the various teenage pregnancy prevention strategies and programmes that have been established, teenage pregnancies and birth-rates are still outrageously high[7–9]. Teenage pregnancy is regarded as an outcome of inconsistent or non-usage of contraceptives and is a risk factor for STIs, including HIV[1]. Teenage pregnancy has been linked to teenagers indulging in regular unprotected sexual intercourse without a reliable contraceptive, inadequate sexuality education, sexual coercion, peer-pressure, proof of one's fertility, poor socio-economic status and promiscuity, among others[1,10,11].

High incidence of teenage pregnancy is a global phenomenon[4]. Teenage pregnancy is prevalent in the USA, with nearly a million teenagers becoming pregnant annually[3,7,8]. Likewise, in the United Kingdom, teenage pregnancy rate is still[12,13]. Teenage pregnancy rate is an important index that portrays the health status of a population but in Nigeria, the rate of teenage pregnancy and child bearing is a social health burden[2,12,14]. According to a study conducted by Amoran[2] on the predictors of teenage pregnancy and its prevention in a rural town in Western Nigeria, the prevalence of teenage pregnancy among the study population was 22.9%. This is similar to other studies conducted in Nigeria[12,14].

One of the most important obligations that a country can make in order to ensure a stable future economic, social and political progress is to address the health and developmental needs of its younger citizens[12]. Thus, there is need to respond effectively to the health and developmental challenges of teenagers in Nigeria.

The two communities used in the study were selected based on the previous findings by Edukugbo[14], indicating the regions with highest rate of teenage pregnancy in Nigeria. In the study, Edukugbo indicated that the Northern states had the highest rate, while states in the South-South (SS) region had least rate of teenage pregnancy. The two professional groups were chosen based on the fact that nurses and teachers usually have constant contact with teenagers (both in the hospitals and at schools) and they have important roles to play in the prevention of unplanned teenage pregnancy. The study therefore aimed to understand and explore the professional nurses and secondary school teachers' own perspectives on teenage pregnancy, to identify factors that in their view may influence the risk of teenage pregnancy. Besides, the study also attempted to identify current teenage pregnancy prevention programmes and initiatives that are in place within the two selected communities, thereby contributing to a deeper understanding of teenage pregnancy and suggest positive strategies that may be put in place to reduce the occurrence of teenage pregnancy.

Theoretical application

The theoretical framework for this study is social cognitive theory[15,16], which was initially referred to as social learning theory. Personal determinants of behaviour, as well as the socio-cultural determinants, were addressed by the theory. As explained by Bandura[15], the best way to accomplish health promotion within a setting encompasses modification of activities within social frameworks that have adverse effects on the health as opposed to changing the tendencies of individuals.

According to social cognitive theory[16], the important aspects in development are behaviour, environment and cognition. Furthermore, social cognitive theory may be used to explain why people acquire and maintain certain behavioural patterns. For example, if a teenager is to avoid certain behaviours such as risky sexual practices and teenage pregnancy, then she needs an exposure to positive and healthy environment because positive and a healthy environment will definitely produce more positive and healthy behaviours.

Bandura[15], stated that most human conduct and behaviours are acquired observationally; by watching others, one gains an understanding of how new practices are performed, and later, these thoughts are used as guidance for actions. So, teenagers within the community observe the behaviours of others, especially the role models (such as nurses and teachers), before engaging in sexual practices. Thus, positive influences from these role models can indirectly influence the teenagers and in turn reduce risky behaviours that may lead to teenage pregnancy and childbirths.

For example, in building behavioural capability, nurses and teachers as role models can teach teenagers positive behavioural skills such as good communication skills and positive sexual practices. Adequate information must be provided and teenagers must be given the opportunities to practice the skills and receive feedback. Likewise, in observational learning, nurses and teachers are expected to model the skills taught to teenagers and modelling is most effective when the person being observed is influential and respected. Expectations mean that nurses and teachers must motivate teenagers so as to convince them appropriately, while self-efficacy involves direct observation to know teenagers' level of confidence to practice the learned skills. Finally, there must be reinforcement in order to build their confidence in trying out the new skills and this will ensure positive sexual behaviours, thus contributing to the prevention of teenage pregnancy and its associated risks.

Methods

Study design

A qualitative approach using an exploratory research design was primarily used to explore professional nurses and educators' perceptions and experiences of teenage pregnancy in the two communities in Nigeria.

Setting

The study was conducted in two selected secondary schools and primary health care centres in Kwara and Edo states in Nigeria. Kwara is a state located in the North-Central geopolitical zone while Edo is an inland state in the SS geopolitical zone.

Selection and description of participants

A purposive sampling technique was used to guide the recruitment of 80 participants who were professional nurses and secondary school teachers. In total, 10 of the participants dropped out due to time constraint and work schedule. Criteria for inclusion in the study were as follows:

(1) Participants must either be a professional nurse working with teenagers in the selected primary health clinics or a teacher from the selected secondary schools during the time of data collection.

(2) Participants must reside in the study area.

(3) Participants must be willing to participate in the study.

Appointment were booked with participants both at the schools and clinics through physical visits and follow-up phone calls to confirm availability. All participants agreed to be interviewed at their workplace. Interviews were conducted at prearranged times at the clinic and school. Recruitment of participants was performed between August and September, 2016.

The sample size was determined by saturation of data, which was achieved when 70 participants had been interviewed. Data collection and analysis were done concomitantly. Transcription of recorded information was completed within 24 hours. Data saturation was attained when no new information was forthcoming from the participants. A total of professional nurses and 40 teachers were interviewed and each sample group saturated independently. A total of 70 interviews were analyzed with new categories and 10 interviews analyzed without new categories evolving. Referential adequacy was attained, partially fulfilling the requirement of trustworthiness.

Data collection

Data was collected from September to November 2016. The first author (O.A.A.) conducted and audiotaped the semi-structured interviews with professional nurses and secondary school teachers in each of the selected schools and clinics. The researcher explained the goals and reasons for conducting the research individually to all participants during the recruitment period. To guide the interviewer, an interview schedule was developed. The interview was guided by questions such as: knowledge of teenage pregnancy prevention programmes, occurrence, contributing factors and prevention of teenage pregnancy. Probing questions were asked so as to implore certain information from the participants. Follow-up questions were also asked in order to clarify participants ideas and thoughts. The interviews took an average of 45–50 minutes per participants. Furthermore, pretest interviews were conducted during the recruitment phase before the actual data collection with four interviewees (from each community) using participants who have similar characteristics to the study population (one teacher from a nearby school and a nurse from a different PHC centre), but who were not included in the final data. Categorical variables such as sociocultural group, age and gender. The interviews were written and audio-recorded with participants' permission and field notes were taken to complement the recorded information. No repeat interview was conducted.

Data analysis

The interviews were transcribed verbatim by OAA and samples of the transcripts were given to GTT for verification and coding. Data was analysed using a combination of three qualitative data analysis methods, namely, the template analysis style, Tesch's content analysis approach using open coding and quasi-statistics[17,18]. Quasi-statistic is used as a validating mechanism so as to confirm that the inferred themes and categories precisely echo the viewpoints of the participants involved in the study. Quasi-statistics are a tabulation of the frequency certain themes or categories are supported by the data[17,18]. Themes were generated from the data, they were first identified by the first author and later confirmed by the second author. Software was not used in qualitative data analysis. Descriptive statistics were also used for the presentation of data.

Trustworthiness

To ensure trustworthiness, strategies such as interpersonal relationship and trust building, triangulation of data gathering methods, peer examination, member checking, authority of the researcher, dense description, consensus with independent coder and dependability audit were employed.

Ethical considerations

Before the commencement of the study, the research proposal was submitted to the Local Government Health Authority and permission to conduct the research was given (IRLG/CA/TC/6/T.1/96). An official letter was also written to the selected primary health care clinics as well as the secondary schools and permission letters were obtained from the Head of Nursing Services and the School Principals. Prior to the interview, each participant's rights were explained and written informed consent was obtained, and also the permission to use audio recorder. To guarantee privacy, the interviews were conducted in a private room with only the participant and the researcher present.

Results

Demographic profile

All eighty participants (N = 80) verbatim interviews were subjected to template analysis after initial data saturation was attained after 70 interviews and the template constructed according to the categories and sub-categories that emerged from the data. As shown in Table 1, the participants were grouped

into four age groups; the majority (63.7) were aged 20–40 years. In terms of socio-cultural groups, the Yoruba socio-cultural group had the most participants with 52.5% (42 of 80) followed by the Benin with 15% (12 of 80). The majority (66.3%) of the participants (53 of 80) were females.

Qualitative findings

The qualitative findings of the study are presented according to the themes and various categories generated from the data (Table 2). Each theme is described with a summary of its categories it represents. This served as a template according to which accounts (interview data) from participants were considered after the initial data analysis and the point of data saturation. Complete de-identified interview transcripts are available on figshare[19].

Table 1. Demographic profile of combined sample (n = 80).

Variable	N	%
Socio-cultural groups		
Yoruba	42	52.5
Ibo	9	11.2
Esan	10	12.6
Benin	12	15.0
Auchi	6	7.5
Others	1	1.2
Age group (years)		
20–30	20	25.0
31–40	31	38.7
41–50	19	23.8
Above 50	10	12.5
Gender		
Male	27	33.7
Female	53	66.3

Theme 1: Values and beliefs

Knowledge of community teenage pregnancy prevention programmes. More than half (44 of 80) of the participants interviewed were not aware of any programmes, events or interventions that were currently in place at the community level focusing on the prevention of unplanned teenage pregnancies. About one-third (15/40) of the professional nurses mentioned different programmes such as School Sexuality Education (5/15), Society of Family Health Programme (6/15) and Church-Based Teen Programmes (5/15) but only 1 (1/15) was from the NC and mentioned Sexuality Education in the Family Planning Clinic. While more than half (21/40) of teachers from both regions mentioned various intervention programmes such as School Sexuality Education (14/21), HIV/AIDS programme on the Radio (2/21), State Family Support Programme (2/21), Church Based Teenage Programme (2/21) while one teacher from the NC mentioned School Health visit from the Ministry of Health. Notable in these findings is that the majority (34/40) of the participants from the NC region (19/20 of the professional nurses) were not aware of any teenage pregnancy prevention programme.

Meaning, acceptance and cultural beliefs about dating. Dating was viewed by all 80 participants as an intimate relationship between two parties, primarily of the opposite sex, who are supposed to have known each other before they get married or relationship that will result in marriage or a love affair. However, the majority (74 of 80) expressed that it must not involve sexual intercourse.

Majority (66 of 80) of the participants expressed during the interviews that dating is accepted. Of these, 44/66 believed it must only commence after the age of 20 years, while the remaining 22/66 assumed it can begin at 18 years. Notable in the findings was that all teachers from the NC opined that dating is acceptable.

Table 2. Main themes and categories generated from the data.

Main theme	Category
Values and beliefs	Knowledge of teenage pregnancy prevention programmes
	Meaning and cultural beliefs about dating
	Acceptance and expected age of teenage sexual experimentation
	Teenage pregnancy occurrence, acceptance and family support
Health related to teenage pregnancy	Definition and knowledge of contraceptives
	Types of contraceptives
	Acceptance of contraceptive usage among teenagers
	Problems and benefits of teenage pregnancy and childbearing
Risks and protective factors	Risk factors (causes) in teenage pregnancy occurrence
	Importance and existence of parent-child communication in the family
	Prevention strategies for teenage pregnancy

Participants opinions were taken as regards their cultural belief about dating, the majority (54/80) of the participants expressed that dating is culturally acceptable in their communities. Almost half (8/20) of the professional nurses from both regions respectively, all (n=20) teachers from the SS and 18/20 of teachers from the NC. About one third (26 of 80) of the respondents emphatically stated that their culture does not support dating. The following is a citation from a professional nurse from the NC relating to cultural belief about dating:

> *"The Yoruba culture beliefs that dating is for knowing each other to the background, if you date, you take your spouse to your parents, they will either agree or disagree due to the background of the man (especially). The background of the man or woman is checked out during dating."* [Professional nurse from NC]

Acceptance and expected age of teenage sexual experimentation. The interviewed participants were asked about acceptance and the age at which teenagers are expected to get involve in sexual relationship. Almost half (37/80) of the participants stated that sexual relationship is not accepted, nor expected from teenagers at whatsoever age they are, they must wait till after marriage. However, the majority (43 of 80) expressed that teenagers are only allowed to engage in a sexual relationship when they are well above 20 years of age. The followings are citations from the participants:

> *"I will say when the teenager is married. So, if you cannot get married as a teenager, then wait till you are married."* [Professional nurse from SS]

> *"No age if you are a teenager. There should not be any such thing among teenagers."* [Teacher from NC]

Teenage pregnancy: occurrence, acceptance and family support. During the interviews, participants were asked about the frequency of teenage pregnancies in their communities. A large number (54 of 80) of the respondents stated that they have witnessed cases of teenage pregnancy very often as it is frequent and rampant in their communities, more than two third (28 of 40) of the participants from the NC while more than half (26 of 40) from the SS. Notable from the findings was that more teachers (29 of 40) opined that teenage pregnancy was more rampart in their communities.

With regards to teenage pregnancy acceptability, the general perceptions (75 of 80) was that pregnancy among teenagers is absolutely not acceptable for whatever reason. Conversely, 5 of 40 of the professional nurses (3 from NC and 2 from SS) indicated that it is conditionally acceptable as the parents or guardians has nothing else to do rather than accept to avoid more complications.

During the interviews, participants were if there is family support for the pregnant teenager, the majority of the sampled participants (58 of 80) responded that no family in the community will accept and support a pregnant girl, they rather refute and treat her harshly; they resulted to the fact that it is sometimes depends on the moral and religious background of that family because in it real sense, it is uncultured and biblically it is wrong, and morally it is bad. While 22 of 80 of the participants opined that even if the girl's family do not accept the case from the beginning, but later resolutions on the matter usually see the family supporting her. Some of the observed responses are as follows:

> *"Teenage pregnancy is rampant because some of our girls are not serious, even primary six pupils get pregnant, 12 years old are getting pregnant."* [Professional nurse from NC]

> "*Acceptance here is not an issue. There is no community that will accept a child who is not married with pregnancy. It is supposed to be unheard of."* [Teacher from SS]

Theme 2: Health related to teenage pregnancy

Definition, knowledge, type and acceptance of contraceptives. Participants' opinions were taken with regards contraceptives. All the professional nurses (n = 40) had adequate understanding of contraceptives. Contraceptives was defined by all 40 participants as material things, instruments or devices, or chemical substances used in prevention of pregnancy and sexually transmitted diseases (STDs). Likewise, all the teachers (n = 40) also had previous knowledge of contraceptives. Around two-thirds (27/40) explained that contraceptives are methods of preventing unwanted pregnancy.

Participants opinions were taken as regards the types of contraceptives that they know; the professional nurses mentioned different types of contraceptives, and the majority of the teachers (38/40) also mentioned various contraceptive methods, such as condoms, 32/40 stated contraceptives pills and injections; more than half (25/40) indicated IUDs and calendar methods; while only 18/40 mentioned implant, sterilization and emergency contraceptives.

Acceptance of contraceptive usage among teenagers. Participants' also responded to the enquiry that seek to find out if they accept or can encourage teenagers to use contraceptives as a means to prevent unwanted pregnancies and STDs. Responses observed were categorized as follows; 9/20 of professional nurses from the NC and more than half (12/20) from the SS expressed that they accept and also encourage the use of contraceptives among teenagers. However, only 13/40 of teachers (6 from NC and 7 from SS) stated that they accept teenagers to use contraceptives. Significant in this was that despite the adequate knowledge of the professional nurses, only half (21/40) accept the use of contraceptives by teenagers. The following is a citation from a professional nurse from the SS relating to contraceptive usage:

> *"It must not even exist. Teenagers should not even know where contraceptives are sold. They should wait for the right age, as there are side effects like infertility that can occur in future, it is not a thing for teenagers, and they are for grownups."* [Professional nurse from SS]

Problems and benefits associated with teenage pregnancy. Perceived consequences of teenage pregnancy and child bearing as expressed by the participants were classified as health, economic and social consequences as indicated in Table 3. A notable finding was vesico-vaginal fistula that was mentioned by only the professional nurses from both regions as a possible consequence of teenage pregnancy and child bearing.

The interviewed participants were asked about the benefit of teenage pregnancy; all the participants unanimously opined that there is no benefit associated with teenage pregnancy, it is always found to pose one problem or the other. The following are examples of citations from a professional nurse from the SS and a teacher from the NC:

> *"I don't think any benefit can come out from such a shameful act."* [Professional nurse from SS]

> *"There is no benefit because the unborn suffer and the mother also suffers."* [Teacher from NC]

Table 3. Participants' perceived consequences of teenage pregnancy and child bearing. To compare the responses of the samples, the following grading scale was used: a total number of 10 responses and above (n = 20) are indicated a yes √, indicating that the majority of the sample had the same perception; 9-5 responses are indicated with, Δ indicating that there was not a consensus perception in the sample; and 0-4 responses from the sample were indicated with an x.

Categories	Sub-categories	A	B	C	D
Health consequences	STIs/HIV/AIDS	√	√	√	√
	Abortion	√	√	Δ	Δ
	Difficult labour	√	√	Δ	√
	Depression	Δ	Δ	X	X
	Malnutrition	√	√	X	X
	Vesico-vaginal fistula	Δ	Δ	X	X
	Hypertension	Δ	X	X	X
	Untimely death	√	√	X	Δ
Economic consequences	Single parenting	X	Δ	√	√
	Increase in crime rate	√	√	√	√
	Bleak future	√	√	√	√
	Over population	√	√	√	√
	Poverty	√	√	√	√
	Extra burden for parents	√	√	√	Δ
Social consequences	Loss of family hope	Δ	√	Δ	Δ
	School dropout	√	√	√	√
	Single parenting	√	√	√	√
	Family shame/ embarrassment	√	√	√	X
	Drug abuse	X	X	Δ	X
	Subsequent pregnancy and childbirth	X	X	X	√
	Child abuse and abandonment	√	√	√	√

A: Professional nurses (North-Central); B: Professional nurses (South-South); C: Teachers (North-Central); D: Teachers (South-South).

Theme 3: Risks and protective factors

Perceived risk factors, importance and existence of parent-child communication and preventive strategies for teenage pregnancy. As revealed in Table 4, perceived risk factors that might contribute towards teenage pregnancies were classified into six categories: personal, psychological, cultural, societal and media pressures, family and economic reasons. A notable difference from the findings was that only teachers from the NC mentioned religious belief of early marriage as a perceived cause of teenage pregnancy and polygamy was also mentioned by participants from the NC.

Importance and existence of parent-child relationship. On the issue of parent-child communication, participants were asked about its meaning and importance, all (n = 80) indicated that parent-child communication as an open relationship that exist

Table 4. Participants' perceived causes of teenage pregnancy (n = 80). To compare the responses of the samples, the following grading scale was used: a total number of 10 responses and above (n = 20) are indicated a yes √, indicating that the majority of the sample had the same perception; 9-5 responses are indicated with, Δ indicating that there was not a consensus perception in the sample; and 0-4 responses from the sample were indicated with an x.

Categories	Sub-categories	A	B	C	D
Personal factors	Ignorance and lack of sexual information	√	√	√	√
	Covetousness	√	Δ	√	Δ
	Indiscipline	√	√	√	√
Psychosocial factors	Loneliness	X	X	Δ	Δ
	Low self esteem	√	Δ	√	√
	Peer acceptance	Δ	Δ	Δ	Δ
Cultural factor	Religious belief of early marriage	X	X	Δ	X
Societal and media pressures	Peer pressure	√	√	√	√
	Illiteracy	X	X	Δ	√
	Rape and incest	Δ	X	X	X
	Media influence	X	X	Δ	√
	Social network	Δ	X	√	√
Family reasons	Divorce and separation	√	√	√	√
	Lack of love or parental guidance	√	√	√	√
	Living with grandparents or relatives	√	√	√	√
	Negative parental influence	Δ	Δ	X	Δ
	Polygamy	Δ	X	Δ	X
Economic reasons	Poverty	√	√	√	√
	Street hawking	√	√	√	√

A: Professional nurses (North-Central); B: Professional nurses (South-South); C: Teachers (North-Central); D: Teachers (South-South).

between the parent and the child such that both parties express their thoughts, feelings and experience in a friendly manner, or an act of interaction between the parent and the child such that both parties discuss matters that are bothering them and as such, the parents can have a knowledge of what the child is up to.

All the participants stressed the importance of the parent-child communication as something every home must practice so as give their children the freedom to express themselves. Similarly, all the participants unanimously expressed the existence of parent-child communications in their homes. The followings are statements made by participants:

> *"Is the process whereby the parents communicate or interacts with the child about their education, sexual health and spiritual life in a cordial way and the child should feel free enough to tell the parents about those they like and how they feel about them and those that tell them they like them and the parents will then be able to advise them on the right path, my children talk to me about everything."* [Teacher from SS]

> *"Some children do the wrong thing in ignorance but when the parents and children communicate, they will correct an attitude in that child, the parents can impact into the life of their children through communication. It brings closer relationship between the child and the parent and it will make the children to express their feelings (what they like and don't like) to their parents. Parents can become their children's confidants."* [Professional nurse from NC]

Preventive strategies for teenage pregnancy. With regards to teenage pregnancy prevention strategies, the participants' responses were grouped into sex education, preventive health care, youth programmes and community engagement, personal and family life strategies (Table 5). A notable finding was that the use of contraceptives as a preventive strategy for teenage pregnancy was only mentioned by the professional nurses.

Table 5. Teenage pregnancy prevention strategies as opined by the participants. To compare the responses of the samples, the following grading scale was used: a total number of 10 responses and above (n = 20) are indicated a yes √, indicating that the majority of the sample had the same perception; 9-5 responses are indicated with, Δ indicating that there was not a consensus perception in the sample; and 0-4 responses from the sample were indicated with an x.

Categories	Sub-categories	A	B	C	D
Sex education strategies	Sex education campaigns by government	√	√	√	√
	Early sex education at home	√	√	√	√
	Sex education in school	√	√	√	√
	Sex education programme in church	√	√	√	√
	Abstinence from sex by teenagers	√	√	√	√
Preventive health care strategies	Use of contraceptives	Δ	Δ	x	X
	School health visit	√	√	x	Δ
Youth programmes and community engagement strategies	Participation in social clubs like Discourse groups and Debate clubs	x	X	√	√
	Provision of skills training centres for teenagers	Δ	Δ	√	√
	Government should ban blue/sex films	X	X	Δ	Δ
	Good role models in the community	Δ	X	Δ	X
Personal and Family life strategies	Adequate provision at home	Δ	√	√	√
	Home discipline/Godly upbringing in homes	√	√	√	√
	Involvement in church activities from young age	√	√	Δ	Δ
	Focus on education	Δ	Δ	√	√
	Good parent-child communication	√	√	√	√
	Self-determination and discipline	√	X	√	√
	Control over social media/ network	X	X	√	√

A: Professional nurses (North-Central); B: Professional nurses (South-South); C: Teachers (North-Central); D: Teachers (South-South).

Discussion

Learning sexual behaviour is a common developmental task of teenagers, and the teenage years are seen as a period when teenagers develop their gender identity as well as sexual exploration[20,21]. The majority of the participants opined that dating is acceptable and many teenagers engaged in sexual relationships.

The social stigma that was once a major consequence of out of wedlock pregnancy has been declining, although the associated health risks for both the teenage mother and her child remain. In some cultures, teenage pregnancy is perceived as a normal occurrence, a God-given gift as well as evidence of fertility[5,6,22]. Conversely, as shown in the findings of this study, almost all the participants expressed that teenage pregnancy, although rampant within their communities, is not acceptable.

Easy access of teenagers and women to contraceptive services has been revealed as an important factor in delaying, spacing and limiting childbearing within a population[9,23]. As revealed in this study, although all participants have good knowledge of contraceptives, the majority (46/80) were totally against the idea of teenagers using contraceptives. Therefore, educational programmes are needed to provide adequate contraceptive information to young men and women so as to enable them to make sound informed decisions.

Universal access to sexual information and skills is necessary for all young people, as they will have to deal with their sexuality at some point in time so as to be able to make informed choices about sexuality; this will go a long way in curbing negative sexual practices among teenagers[6,20,24]. Likewise, as opined by all the participants in the study, parent-child communication is

very essential in the prevention of risky sexual behavior among teenagers. Sexuality education should be part of the school curriculum, as all young children must be reached at an early age before they become sexually active. Also, it is paramount to linked school sexuality education to the primary health care services so as to ensure easier accessibility[24].

Sex before marriage can be problematic because it fosters increased likelihood of an early, unwanted pregnancy and all the adverse effects likely to follow. Effects of early childbirth can be more devastating on a teenager, as she is more likely to face serious social issues such as poverty, poor education, poor health, remain a single parent, reduced chances of getting married as well as inadequate care for the baby[3,7,25]. Likewise, all participants in the study expressed various consequences of teenage pregnancy and childbirth.

According to previous studies[1,6,24], factors such as poor family relationships (divorce, lack of love and parental guidance), poverty, social grants, alcohol, substance abuse, rape and incest, and failure to use contraceptives has been linked to the high incidence of teenage pregnancy. Equally as discovered in this study, professional nurses and teachers mentioned all the above as perceived causes of teenage pregnancy, with the addition of factors such as covetousness, living with grandparents, illiteracy, street hawking and polygamy. This is also similar to the findings of Demographic and Health Survey[26] and Ekefre[27] also revealed in their findings that poverty, illiteracy and poor sexuality education seem to be the major indicators that determine the rate of unplanned teenage pregnancies in Nigeria as well as in other developing countries.

Findings from this study revealed several preventive strategies of teenage pregnancy as expressed by the participants, includes adequate parent-child communication, sexuality education in schools and homes, control over social media and good role models. Equally, it has been shown that when it comes to the issue of teenage pregnancy prevention, a single intervention strategy by only a sector of the society will not solve the problem but a comprehensive approach which connects and foster linkages with one another[8,9,28].

Limitations

Limitations of the study include the purposive sampling of professional nurses and secondary school teachers living in the two selected communities in Nigeria; hence, the results are not generalizable to a larger context.

Conclusions and recommendations

As reported in the study, lack of sexuality education and poor acceptance of contraceptives play a significant role in the occurrence of teenage pregnancy. Hence, it is vital for government, communities and all policy makers to target programmes and initiatives that will be directed at enlightening teenagers, parents and all stakeholders in the community on behavioural change that will encourage dissemination of appropriate and effective sexuality education.

Likewise, as reported in the study, economic deprivation is an important risk factors in the occurrence of teenage pregnancy thus, social differences are an important factor to be considered in the design and implementation of programmes and strategies targeting teenage pregnancy prevention. Also, teenage pregnancy intervention programmes are still not visible within the communities; hence, there is need for the establishment and sustenance of competent and accessible teenage pregnancy intervention programmes and initiatives.

Data availability

De-identified interview transcripts are available on figshare. DOI: https://doi.org/10.6084/m9.figshare.7531664[19].

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Reviewer Report 07 October 2019

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✔ **Rasak Bamidele**
Department of Sociology, Landmark University, Omu-Aran, Nigeria

I think this paper is an excellent and important addition to the literature on the subject of teenage pregnancy in Nigeria. The abstract is informative and self-explanatory. The introduction provides a clear statement of the problem, relevant literature on the subject, and an adequate approach to the subject matter. The study is understandable, while the methods used are appropriate, nevertheless, the sample size is small and therefore the question of generalization is brought to bear. However, the procedures were adequately described; the more recently published study should be cited. The theory used for the study was well situated in the study and was able to explain why people acquire and maintain certain behavioural patterns, thus, as shown in the study, there are a positive influence role models has on teenagers and this, in turn, reduce risky behaviours that may lead to teenage pregnancy and childbirth. Results were presented with clarity and precision. The discussion was able to interpret the findings given the results obtained.

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Yes

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: sociology

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 19 August 2019

https://doi.org/10.5256/f1000research.18469.r45180

Electra V. González Araya
Center for Reproductive Medicine and Adolescent Comprehensive Development (CEMERA), University of Chile, Santiago, Chile

- I think the work is clearly and accurately presented and cites the current literature.
- The style is appropriate, and follows a logical sequence.
- The study design is appropriate to achieve the aim of the study.
- Details of methods and analysis provided are sufficient to allow replication by others.
- The source data underlying the results are sufficient, appropriate and available to ensure full reproducibility.
- The conclusions drawn are adequately supported by the results.

According the results of this study the lack of appropriate and effective sexuality education and, the social differences, are important factors to be considered in the design and implementation of programmes and strategies targeting teenage pregnancy prevention in Nigeria.

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Yes

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: My area of expertise are teenage pregnancy, adolescent fatherhood, sexual education, sexual behaviour in adolescents, contraception in adolescents, sexual abuse

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.