



Topic: prevalence and determinants of adolescent pregnancy among sexually active adolescent girls in Niger

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Abstract

Aim All over the world, including in Niger, adolescent pregnancy remains a challenge requiring urgent solution. This study sought to examine the prevalence and determinants of adolescent pregnancy among sexually active adolescent girls in Niger.

Subjects and methods The study used data from the 2012 Niger Demographic and Health Survey (DHS). The statistical software STATA version 13 was used to process the data. Both bivariate and multivariate analyses were employed in this study and results were tested at the 95% confidence interval (CI).

Results The study found that adolescents aged 19 years [odds ratio (OR) = 55.29, 95% CI = 25.50–119.90] and those who had ever used contraceptives (OR = 22.65, 95% CI = 5.18–99.05) had higher odds of experiencing adolescent pregnancy. On the other hand, there was a low likelihood of adolescent pregnancy among those who were married/cohabiting (OR = 0.08, 95% CI = 0.01–0.80), widowed/divorced/separated (OR = 0.03, 95% CI = 0.01–0.31) and those whose age at first sex was 16–19 years (OR = 0.23, 95% CI = 0.16–0.34).

Conclusion The socio-demographic factors that influence adolescent pregnancy in Niger are interesting and important for health, economic and social concerns. Understanding the factors associated with adolescent pregnancy will lead to improved social policies, ultimately reducing adolescent pregnancy in Niger and other parts of sub-Saharan Africa.

Keywords Prevalence · Determinants · Adolescent pregnancy · Niger

Introduction

Adolescent pregnancy remains a challenge requiring urgent solution the world over (United Nations Fund for Population Activities, UNFPA 2013). This is because most of the pregnancies among adolescents are often unplanned and unintended (Yazdkhasti et al. 2015; Oringanje et al. 2016). These unplanned and unintended pregnancies do not only have negative impacts on the emotional, social and economic conditions of adolescents (Odu et al. 2015; Creatsas and Elsheikh 2002) but also pose a threat to the health of adolescent girls and the foetus (Sycharoun et al. 2018; Jonas et al. 2016). The negative health impact associated with adolescent pregnancy is worrisome and should not be underestimated (Ahinkorah et al. 2019). The negative health

outcomes resulting from pregnancy and childbirth have been identified as the leading causes of death in adolescent girls aged between 15 and 19 years old in developing countries (Yasmin et al. 2014). According to the UNFPA (2013), the risk of maternal death for adolescent mothers in low- and middle-income countries is twice that of older females, as 70,000 adolescents in developing countries experience death annually due to causes related to pregnancy and childbirth.

Adolescent pregnancy is a global problem that occurs in high-, middle- and low-income countries. The rate of births to adolescents in 2018 was 44 per 1000 adolescent girls aged 15–19 years old worldwide (World Health Organization, WHO 2018). Approximately 16 million girls between the ages of 15 and 19 years old and 2.5 million girls under 16 years old experience childbearing every year in developing regions (Neal et al. 2012). More than 50% of women in sub-Saharan Africa give birth before the age of 20 years old (Moraes et al. 2018), with Niger recording the highest prevalence of childbirth among adolescents (203.6 births per 100,000 teenage women) (United Nations, Department of Economic and Social Affairs, Population Division 2017). The country also ranks among

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sub-Saharan African countries with the youngest median age at sexual debut (16.2 years) (MacQuarrie et al. 2017). With an age of consent of 13 years, Niger is among a few countries in the world with the lowest age of consent (World Population Review 2019). Contraceptive prevalence in the country is below 25% (United Nations, Department of Economic and Social Affairs, Population Division 2017). All of these factors are indications that adolescent girls in Niger are exposed to the risk of adolescent pregnancy in the absence of effective interventions.

To address the phenomenon in the country, it is important to understand the characteristics of the population at risk and how they influence adolescent pregnancy. Although systematic reviews by Pradhan et al. (2015) and Kassa et al. (2018) have found low education, low socio-economic position, insufficient access to and non-use of contraception, early sexual initiation, living in rural areas and ever married to be associated with adolescent pregnancy in several low- and lower-middle income and African countries, no literature exists on how these factors determine adolescent pregnancy in Niger. This study seeks to fill this gap in the literature by examining the prevalence and determinants of adolescent pregnancy among sexually active adolescent girls in Niger. The findings of the study will help bring about an understanding of adolescent pregnancy in Niger wholly and help policy-makers to design pragmatic interventional programmes to reduce pregnancies among adolescents.

Methods

Data

The study used data from the 2012 Niger Demographic and Health Survey (DHS). The DHS is a nationwide survey collected in every five-year period across low- and middle-income countries. It focuses on maternal and child health by interviewing women of reproductive age (15–49 years old). For the purpose of this study, only sexually active adolescent girls (15–19 years old) who had complete cases on all the variables used for the study were used ($N = 1021$).

Definition of variables

Outcome variable

The outcome variable for this study was ‘adolescent pregnancy’. This included sexually active female adolescents who were pregnant at the time of the survey, those that had one or more children, as well as those who had ever had a pregnancy terminated in the past. The study considered all sexually active female adolescents aged 15–19 years old who answered affirmatively to any of the three areas as the “ever been pregnant sample” and compared them to those who had never been pregnant at the time of the survey.

Independent variables

Age, residence, wealth quintile, occupation, marital status, age at first sex, educational level, exposure to media, knowledge and use of contraceptives were the independent variables used in this study. For efficient analysis, occupation, marital status, educational level, age at first sex and exposure to media were re-categorised. Occupation was categorised into ‘working’ and ‘not working’. Marital status was coded as ‘single’, ‘married/cohabiting’ and ‘widowed/divorced/separated’. ‘No education’, ‘primary’ and ‘secondary/higher’ were used as categories for educational level. Using the age of consent in Niger as a benchmark, age at first sex was re-categorised into ‘less than 13 years’, ‘13–15 years’ and ‘16–19 years’. The variable exposure to media was constructed from three questions (frequency of listening to radio, frequency of watching television and frequency of reading newspapers). First of all, each of the three questions was coded as 1 = ‘Yes’ if the adolescent girl listened to radio, watched television or read newspapers less than once a week or at least once a week and 0 = ‘No’ if the adolescent girl does not listen to radio, watch television or read newspapers at all. After obtaining a dichotomous outcome for all three questions, any respondent having ‘Yes’ for at least one form of media (television, radio, newspaper) was considered as ‘exposed’ and those who had ‘No’ for all the three media were considered as ‘not exposed’.

Statistical analysis

The statistical software STATA version 13 was used to process the data. All frequency distributions were weighted. Both bivariate and multivariate analyses were employed in this study and the results were tested at the 95% confidence interval (CI). Bivariate analysis using the chi-square test of independence was used to assess the relationship between the independent variables and adolescent pregnancy. All independent variables that showed a statistically significant relationship with adolescent pregnancy at the bivariate level were combined into a multivariate logistic regression model to investigate their influence on adolescent pregnancy. The survey command in STATA was used to adjust for the complex sampling structure of the data in the regression analyses. All results of the logistic regression analysis were presented as odds ratios (ORs) and CIs.

Results

Bivariate analysis

Overall, the prevalence of adolescent pregnancy among sexually active adolescent girls in Niger was approximately 68%. On the relationship between socio-demographic variables and

adolescent pregnancy, the chi-square analysis showed that age, place of residence, wealth quintile, marital status, age at first sex, knowledge of contraceptives and use of contraceptives had significant associations with adolescent pregnancy (see Table 1).

Multivariate analysis

Table 2 shows that the likelihood of adolescent pregnancy increased with age, with adolescents aged 19 years old having the greatest odds of experiencing adolescent pregnancy (OR = 55.29, 95% CI = 25.50–119.90). Sexually active adolescent girls who were single were more likely to experience adolescent pregnancy compared to those who were married/cohabiting (OR = 0.08, 95% CI = 0.01–0.80) and widowed/divorced/separated (OR = 0.03, 95% CI = 0.01–0.31). Again, adolescent girls who had ever used contraceptives had higher odds of experiencing adolescent pregnancy compared to those who had never used contraceptives (OR = 22.65, 95% CI = 5.18–99.05). Finally, the likelihood of experiencing adolescent pregnancy was low among adolescent girls whose age at first sex was 16–19 years old (OR = 0.23, 95% CI = 0.16–0.34) compared to those whose first sexual debut occurred before the age of 16 years old.

Discussion

The study sought to examine the prevalence and socio-demographic determinants of adolescent pregnancy among sexually active adolescents in Niger. The study found that the prevalence of adolescent pregnancy in Niger is high. The high prevalence of adolescent pregnancy could be due to the youngest median age at sexual debut in the country (MacQuarrie et al. 2017). Again, Niger is a country that has contraceptive prevalence levels below 25% (United Nations, Department of Economic and Social Affairs, Population Division 2017), a risk factor for adolescent pregnancy. Furthermore, with an age of consent of 13 years old (World Population Review 2019), it is not surprising that adolescent pregnancy in Niger is high. This is because, with an age of consent of 13 years, a lot of adolescent girls in Niger are more likely to engage in sexual activity during early adolescence and may experience a higher chance of getting pregnant. The high prevalence of adolescent pregnancy among adolescent girls in Niger confirms the findings of previous studies conducted in sub-Saharan Africa (Yakubu and Salisu 2018; Kassa et al. 2018).

The likelihood of adolescent pregnancy increased with age. This finding corroborates the findings of previous studies (Ayele et al. 2018; Ayanaw Habitu et al. 2018), which also identified high prevalences of adolescent pregnancy among adolescent girls aged 18–19 years old. The possible reason

Table 1 Socio-demographic factors and adolescent pregnancy in Niger

Variables	Adolescent pregnancy		χ^2 (<i>p</i> -value)
	No.	%	
Total	690	67.58	
Age (years)			157.99 (0.000)
15	23	3.33	
16	72	10.43	
17	165	23.91	
18	245	35.51	
19	185	26.81	
Place of residence			5.44 (0.020)
Urban	130	18.84	
Rural	560	81.16	
Wealth quintile			12.18 (0.016)
Poorest	119	17.25	
Poorer	128	18.55	
Middle	129	18.70	
Richer	147	21.30	
Richest	167	24.20	
Occupation			3.34 (0.068)
Not working	597	86.52	
Working	93	13.48	
Marital status			8.15 (0.017)
Single	14	2.03	
Married/cohabiting	657	95.22	
Widowed/divorced/separated	19	2.75	
Age at first sex (years)			12.83 (0.002)
Less than 13	34	4.93	
13–15	439	63.52	
16–19	217	31.45	
Educational level			2.57 (0.277)
No education	505	73.19	
Primary	118	17.10	
Secondary/higher	67	9.71	
Exposure to media			0.00 (0.968)
Not exposed	243	35.22	
Exposed	447	64.78	
Knowledge of contraceptives			24.20 (0.000)
Knows no method	101	14.64	
Knows traditional method	5	0.72	
Knows modern method	584	84.64	
Ever used contraceptives			69.22 (0.000)
No	555	80.43	
Yes	135	19.57	

for the finding is that older adolescents are more likely to engage in risky sexual behaviours, which may increase their likelihood of getting pregnant. This is supported by Ritchwood et al. (2015), who indicated that older adolescents

Table 2 Determinants of adolescent pregnancy in Niger

Variables	Odds ratio (OR) [95% confidence interval (CI)]
Age (years)	
15	Ref.
16	3.78*** [2.06–6.94]
17	9.41*** [5.09–17.38]
18	16.42*** [9.36–32.43]
19	59.35*** [27.29–129.1]
Residence	
Urban	Ref.
Rural	1.052 [0.56–1.97]
Wealth quintile	
Poorest	Ref.
Poorer	0.68 [0.41–1.11]
Middle	0.74 [0.45–1.243]
Richer	0.90 [0.53–1.54]
Richest	0.99 [0.50–1.96]
Marital status	
Single	Ref.
Married/cohabiting	0.08* [0.01–0.77]
Widowed/divorced/separated	0.03** [0.02–0.30]
Age at first sex (years)	
Less than 13	Ref.
13–15	0.19** [0.06–0.60]
16–19	0.04** [0.01–0.16]
Knowledge of contraceptives	
Knows no method	Ref.
Knows traditional method	1.16 [0.16–8.65]
Knows modern method	1.32 [0.89–1.94]
Ever used contraceptives	
No	Ref.
Yes	23.07*** [5.24–101.7]

2012 Niger Demographic and Health Survey (DHS) dataset. Ref.: reference; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

often report high levels of risky sexual behaviour than younger adolescents and explained that, as children age, there is usually a decrease in the social controls, such as parental monitoring, and this increases the opportunities they have to engage in risky sexual behaviours, such as multiple sexual partners and intergenerational sex, which put them at risk of adolescent pregnancy.

With the risk of adolescent pregnancy increasing with age, one would have expected that adolescent girls with higher age at first sex would have a higher risk of experiencing adolescent pregnancy. Interestingly, however, the risk of adolescent pregnancy was high among adolescent girls aged less than 13 years old compared to those who were more than 13 years old. This has been supported by previous studies of Durowade et al. (2017) and Yakubu and Salisu (2018). The possible

reason for this finding could be attributed to the risk of adolescent pregnancy associated with early sexual debut. Moreover, adolescent girls less than 13 years old in Niger would obviously have had their first sex outside the age of consent. At this period of their lives, the majority of adolescent girls are likely to experience sexual violence, such as rape and defilement, putting them at risk of pregnancy. Having sex outside the age of consent also means that a lot of the adolescent girls will engage in unprotected sex, another risk factor for pregnancy.

Another interesting finding was that adolescent girls who were single were more likely to experience adolescent pregnancy than those who had been married. This finding contradicts the findings of Gideon (2013) and Ayele et al. (2018), who found that married teenagers were more likely to have teenage pregnancy compared to single teenagers and argued that, in a setting where early marriage is highly prevalent, teenagers are exposed to unwanted pregnancy. To be able to understand the relationship between marriage and adolescent pregnancy requires a further study that will look at the age of marriage of adolescents and how it influences adolescent pregnancy. Nevertheless, the possible reason for the finding of the current study in relation to marital status and adolescent pregnancy could be that unmarried adolescents may be exposed to risky sexual behaviours, such as multiple sexual partnership, non-condom use, transactional sex and intergenerational sex, putting them at risk of adolescent pregnancy. Such behaviours have been found to be prevalent among unmarried adolescents (Dimbuene and Defo 2011; Perera and Abeysena 2018).

This study also found that adolescent girls who had ever used contraceptives were more likely to experience adolescent pregnancy compared to those who had never used contraceptives. This finding contradicts the findings of Coles et al. (2011) and McMicking and Lloyd (2017). Although these studies found that the use of contraceptives help to reduce adolescent pregnancy, it is important to argue that the mere fact that an adolescent girl mentions that she has ever used contraceptives is not enough to conclude that she is at lower risk of getting pregnant. The possible reason for why adolescent girls in this study who have ever used contraceptives have higher chances of experiencing adolescent pregnancy could be that they use less of modern contraceptives compared to traditional or folkloric methods. Ajayi et al. (2016) have also argued that contraceptive failure, incorrect and inconsistent condom use, and lack of knowledge of emergency contraception are the major reasons for the high prevalence of unplanned pregnancy and not only the non-use of contraceptives.

Conclusion

The study concludes that adolescent pregnancy is high in Niger and is determined by age, marital status, age at first

sex and ever used contraceptives. The factors associated with adolescent pregnancy in Niger are interesting and important for both health, economic and social concerns. Understanding the factors associated with adolescent pregnancy will lead to improved social policies, ultimately reducing adolescent pregnancy in Niger and other parts of sub-Saharan Africa.

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Author contributions Conception and design of study: BOA; analysis and/or interpretation of data: BOA; drafting the manuscript: BOA; revising the manuscript critically for important intellectual content: BOA.

Compliance with ethical standards

Conflict of interest The author declares no conflict of interest for this research.

The author was not directly involved in data collection. However, MEASURE DHS reports that ethical clearance was obtained from the Institutional Review Board of ICF International. The Demographic and Health Survey (DHS) also anonymised all data before making them accessible to the public. Permission to use the dataset was sought from MEASURE DHS. The adolescent girls gave oral and written consent. The dataset is available to the public at <https://dhsprogram.com/what-we-do/survey/survey-display-437.cfm>.

Consent for publication This manuscript is an original work and has been prepared by the author, BOA, who is aware of its content and approves its submission. The manuscript has not been published elsewhere in part or in entirety and is not under consideration by another journal. The author gives his consent for publication in the Journal of Public Health.

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