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RESEARCH

Socio-demographic risk factors for unintended pregnancy among unmarried adolescent Nigerian girls

Chibuogwu Izugbara[a,b*]

[a] *Human Economy Programme, University of Pretoria, Pretoria, South Africa*
[b] *Department of Sociology, University of Pretoria, Pretoria, South Africa*
**Corresponding author, email: cizugbara@yahoo.com*

Background: Globally, unintended births among unmarried adolescent girls are a major contributor to maternal and childhood mortality, the vicious cycle of ill-health, poverty, and truncated educational opportunities. Nigeria has the highest rates of adolescent fertility in sub-Saharan Africa. Over 900 000 births to adolescents occur annually and 150 out of every 1000 women who give birth in Nigeria are 19 years old or under.
Objective: To document and investigate socio-demographic risk factors for unintended pregnancy among unmarried adolescent Nigerian girls.
Methods: Data for this study were drawn from the 2008 Nigeria Demographic and Health Survey. Univariate and multivariate statistical analyses were used to assess the relationship between adolescent pregnancy and socio-demographic contextual factors focusing on sex and age of household head, adolescent girls' age, and educational attainment, place of residence, religious affiliation, and household wealth index. All data were analysed using STATA Version 11.
Results: Non-pregnant adolescents had older household heads; such households were wealthy, and parents of such households had higher educational standing. Female-headed households were less likely to experience unwanted adolescent pregnancy compared to those of the reference group category (OR = 0.56, 95% CI = 0.3920–0.8073).
Conclusion: There is a significant relationship between age and sex of household head and risk of unintended adolescent pregnancy among unmarried adolescent girls. Adolescent girls from households headed by young adults are more likely to experience adolescent pregnancy compared to adolescent girls from households headed by older adults.

Keywords: adolescent pregnancy, age and household headship, Nigeria, sex

Introduction

Unintended births among unmarried adolescent girls are a major contributor to maternal and childhood mortality, the vicious cycle of ill-health, poverty, and truncated educational opportunities.[1] For example, it affects both physiological and psychosocial aspects of the adolescent.[2] Pregnant adolescents have greater risks than adults for sexually transmitted infections (STDs), especially HIV-1 infection.[3] They also experience more anaemia, severe preeclampsia/eclampsia, placental abruption, intrauterine foetal death, and caesarean delivery.[4] Not only does adolescent pregnancy have maternal implications, it also affects infants. Low birth weight (LBW) infants, premature delivery, and foetal distress have been found to be greater among adolescent than in adult pregnancies.[5] Recent estimates by UNICEF[6] indicate that 14% of all unsafe abortions in developing societies are among adolescent mothers. More so, stillbirths and death in the first week of life are 50% higher among babies born to adolescent mothers than among babies born to older mothers.[7] Globally, the rates of population growth are more rapid when women have their first child in their teen years, because early initiation into childbearing lengthens the reproductive period and subsequently increases fertility.[8]

Research shows that sub-Saharan Africa has the world's highest level of adolescent childbearing — 143 births per 1000 girls aged 15–19 years.[6] However, in sub-Saharan Africa, Nigeria has the highest rate of adolescent fertility. According to[1] estimates, over 900 000 births to adolescents occur annually and 150 out of every 1000 women who give birth in Nigeria are 19 years old or under. A review of literature on the causes of unintended birth among adolescents in Nigeria found a modest number of studies.[9,10] Studies found strong associations between early onset of menarche among females,[11] early initiation of sexual activity, economic insecurity, low and ineffective use of contraception, and deterioration in the traditional African values.[12,13] Other studies have focused on self-care and health-promoting behaviours. Among those, several studies asked whether certain factors such as self-efficacy, self-esteem, social support, and intention to have a baby, level of education, occupation, income, and health perception influenced healthy behaviour patterns in pregnant adolescents.[14,15] Other studies have identified the influence of a number of individual and family factors on adolescent sexual behaviour such as individual psychosocial factors of age at first intercourse, self-esteem, and gender of adolescents.[16,17] Adolescents are also influenced by their peers and family members.[18]

Researchers have also studied how parent/child connectedness might lower adolescent pregnancy risk.[19,20] In such studies, close mother/daughter relationships were found to be related to daughters' postponement of sexual intercourse.[21] Some other studies which examined the interaction between religion and social attitudes and behaviour of adolescents, including their sexual views and practices[22,23] observed that highly religious teens (e.g. those with high levels of religious commitment, religious attendance, religious salience, and prayer) initiate sexual activity later and report fewer sexual partners than do their less religious peers. Other studies discussed the influences of adolescent sexuality[22] and adolescent perception of sexuality and sexually transmitted infections.[24] The ethnography of gender, economics, and the power dynamics of sexuality in southwestern Nigeria has also been studied.[16]

It appears reasonable to conclude that, although some evidence does exist, the issue of unintended births among Nigerian adolescents and its underlying determinants remain inadequately understood. Studies have shown that delaying adolescent births could significantly lower population growth rates, potentially generating broad economic and social benefits, in addition to improving the health of adolescents.[18]

The purpose of this study is to document and investigate socio-demographic risk factors for unintended pregnancy among unmarried adolescents in Nigeria in a multivariate framework. More specifically, it compares the socio-demographic characteristics of adolescents with unintended pregnancy and those of non-pregnant girls of similar age. Understanding and conceptualizing the similarities and dissimilarities of socio-demographic risk factors for unintended fertility among unmarried adolescents, and dividing them into taxonomically and analytically useful categories, will potentially add to our knowledge of the correlates of adolescent pregnancy in Nigeria and the rest of the developing nations. Finally, enhanced understanding of these could provide useful information for policymakers in the enactment of laws or development of programmes to benefit this population.

Methods

The study used 2008 Nigeria Demographic and Health Survey (NDHS) data. The sampling frame used for the 2008 NDHS was the 2006 National Population and Housing Census of the Federal Republic of Nigeria. The survey covered all the 36 states and the Federal Capital Territory, Abuja. The primary sampling unit (PSU), referred to as a cluster, was defined on the basis of Enumeration Areas (EAs) from the 2006 census frame. The sampling procedure used by 2008 NDHS was a stratified two-stage cluster design. In the first stage, 286 clusters were selected in the urban area, while

Table 1: Bivariate analyses of unintended pregnancy among unmarried adolescents and their socio-demographic characteristics ($N = 6\,951$)

Characteristic	Pregnancy status		Odds ratio	95% CI
	Pregnant ($n = 492$) %	Not pregnant ($n = 6\,099$) %		
Adolescents age at birth*				
15	11.99	24.92	1	
16	12.20	19.10	0.28	0.0845705–0.6501633
17	20.73	17.20	0.91	0.5882173–1.248399
18	35.37	23.94	1.2	0.8179082–1.425675
19	19.72	14.84	1.01	0.6818118–1.349597
Sex of household head†				
Male	90.65	79.59	1	
Female	9.35	20.41	1.1	1.220849–6.011713
Age of household head***				
15–29	21.61	44.91	1	
30–44	56.51	14.84	1.1	2.405217–0.511573
45–59	21.88	40.25	1.0	1.096044–8.740936
Household wealth index***				
Poor	14.14	85.86	1	
Average	12.31	87.69	0.1	2.505743–0.067802
Wealthy	9.58	90.42	0.4	5.376408–3.452852
Adolescent's Educational Attainment†				
No Education	13.54	86.46	1	
Primary	12.25	87.75	0.1	0.2113683–0.0185881
Secondary	9.57	90.43	0.3	4.819327–3.026381
Higher	8.81	90.19	0.4	6.378431–3.28363
Religious Affiliation†				
Catholic	8.86	10.05	1	
Pentecostal	31.95	41.31	0.13	0.26867–0.067982
Islam	56.63	46..42	0.32	1.932112–4.563914
Traditionalist	1.82	1.53	0.29	0.0021878–5.98538
Others (Christians)	0.12	0.15	0.0	1.113184–9.643908
Type of place of residence†				
Urban	26.84	32.40	1	
Rural	73.16	67.60	0.26	0.185518–3.496459

Source: calculated from the 2008 Nigeria demographic and health survey:
*$p < 0.05$.
***Statistically highly significant.
†$p < 0.01$.

602 clusters were selected in the rural areas. In the second stage of the selection, 41 households were selected in each cluster, by equal probability systematic sampling. Hence, a representative sample of 36 410 households was selected for the 2008 NDHS survey, with 24 684 households from the rural areas and 11 726 households from urban areas.

Data used in the present study were collected from 6591 unmarried adolescents aged 15–19 years. Of these, 492 (7.46%) adolescent girls were currently pregnant as at the time of the survey, while 6099 (92.54%) were not pregnant. Married or unmarried adolescent girls with intended pregnancy were excluded in the study.

Statistical analysis

Univariate analyses and bivariate associations between socio-demographic and unintended pregnancy among unmarried adolescents were examined. Socio-demographic variables utilised include adolescent girls' maternal and paternal ages, and educational attainments, household wealth index, age and sex of household headship, family size, and household decision-maker. The associations of these variables were determined by computing odds ratio with 95% confidence intervals. Variables that were significant at this level were entered into a multivariate logistic regression model to estimate adjusted odds ratios of unintended pregnancy and the corresponding 95% confidence interval.

Operational definitions

Unintended pregnancy

Unintended or unplanned pregnancy refers to the sum of mistimed and unwanted pregnancies. A woman is assumed to have a mistimed pregnancy if she became pregnant at a time when she did not want to. On the other hand, a woman is assumed to have an unwanted pregnancy if the woman did not want to become pregnant at all, or in other words the pregnancy occurred when she wanted to have no more children.[25]

Adolescent pregnancy

Teenage pregnancy is defined as a teenage girl, usually within the ages of 13–19, becoming pregnant.[6]

Unmarried adolescent

This is defined to mean a teenage girl within the ages of 13–19 who is not married.[25]

Maternal age

This is defined as the age of the mother in completed years at the time of delivery.[26]

Paternal age

Paternal age was defined as the age of the father in completed years at the time of delivery.[26]

NDHS

Nigeria Demographic and Health Survey.[27]

In the bivariate analysis of adolescent's fertility and socio-demographic variables at the individual and household levels, unmarried adolescents aged 18 experienced the highest rate of adolescent pregnancy. They were 1.1-times more likely to experience adolescent pregnancy compared to those aged 15 years. With regard to sex of household head, 90.65% of adolescent pregnancy occurred among male-headed households, while the odds ratio for adolescent pregnancy among female-headed households was 0.9 (95% CI = –1.220–0.6011) with 9.35% of adolescent pregnancies. The highest proportion of adolescent pregnancy occurred in households whose heads were 30–44 years old, about 56.51%. The odds of adolescent pregnancy among these groups was 14-times more likely compared to those between ages 15–29 years.

Teenage pregnancy was statistically significantly associated with educational attainment or level. The more education an adolescent girl has, the less likelihood of such an adolescent girl to experience adolescent pregnancy. Adolescent girls from poor households reported the highest rate of adolescent pregnancy. Adolescent girls from wealthy households were 4% less likely to experience adolescent pregnancy compared to the reference category. Significantly more (56.63%) of the teenage pregnant girls were Muslims (OR = 32, CI = 0.193–0.456). Furthermore, the highest proportion of adolescent pregnancy occurred among unmarried adolescent girls in rural areas, about 73.16%. The odds of adolescent pregnancy among unmarried adolescent girls in rural areas were 26-times more likely compared to their urban counterparts.

Multivariate analysis

Results

Age and sex of household head, adolescent's age and educational attainment, and type of place of residence were significantly associated with adolescent pregnancy (p <0.05). Adolescent pregnancy was less likely to occur among female headed households compared to male children. (OR = 0.56, 95% CI = 0.3920–0.8073). Adolescents aged 18 were more likely to experience adolescent pregnancy compared to those of the reference group category (OR = 2.4, 95% CI = 1.732–3.299). Educated adolescent girls were less likely to report adolescent pregnancy (OR)= 0.38. Adolescent girls who are living in inner-city communities are 1.1-times more likely to report adolescent pregnancy (95% CI = 0.7316–1.356).

Discussion

This paper focused on socio-demographic risk factors for unintended pregnancy among unmarried adolescent Nigerian girls. During the 2003–2008 survey periods, there were 6591 adolescent girls aged 15–19. Of these numbers, 492 were currently with unintended pregnancy at the time of the survey, while 6099 were not pregnant. Our findings confirmed that, when using the bivariate analysis to examine the level of relationship between the dependent and independent variables, maternal and paternal ages were significantly associated with unintended pregnancy among unmarried adolescent Nigerian girls. In the multivariate analysis (Table 2), four factors remained statistically significant: age of household head (OR = 3.06, 95% CI = 1.08–8.68); adolescents' age (OR = 8.51, 95% CI = 1.12–64.90); sex of household head (OR = 15.23, 95% CI = 1.43–162.45); adolescent girl's educational attainment (OR = 10.67, 95% CI = 2.67–42.63); and type of place of residence.

If an adolescent girl was living in a household headed by a young adult (30–44), such an adolescent girl had a higher risk of experiencing adolescent pregnancy. There was a significant increase in the risk of adolescent pregnancy if the adolescent girls had no education or only primary education. For these adolescent girls, the OR was 82 (95% CI = 060–1.139). This finding is consistent with those of other studies in which associations between unwanted pregnancy and educational attainment and risk of childhood mortality were reported.[25,26] Previous studies have shown that the risk of unintended fertility is higher among women with lower education (primary or less), women who reside in rural areas because of non-availability of proper medical attention, as well as women that never attended antenatal care.[25] In this study it was also observed that adolescent girl's education and age were important and significant predictors of adolescent

Table 2: Adjusted odds ratios from logistic regression of unintended adolescent births and socio-demographic characteristics of adolescents with unintended pregnancy and those of non-pregnant girls ($n = 492$)

Characteristics	Odds ratio	95% CI
Age of household head*		
15–29	1	
30–44	0.53	0.4209848–0.6776125
45–59	0.21	0.1542932–0.3012827
Adolescents age*		
15	1	
16	1.2	0.8564493–1.888038
17	2.03	1.424112–2.9133
18	2.5	1.732442–3.299725
19	2.4	1.690283–3.470652
Sex of household head*		
Male	1	
Female	0.56	0.3920097–0.807327
Adolescent's educational attainment		
No education	1	
Primary	0.82	0.604124–1.13942
Secondary/Higher	0.38	0.2629758–0.5653821
Type of place of residence		
Urban	1	
Rural	1.1	0.7316658–1.356944

Source: Calculated from the 2008 Nigeria Demographic and Health Survey:
*$p < 0.01$.

pregnancy. In general, the results show that the risk of adolescent pregnancy in 2004–2008 reference periods was significantly higher among adolescent girls with no education followed by those with primary education, and the trend continued reducing as education increased among adolescent girls.

Conclusions

The current study shows that age of household, adolescents' age, sex of household head, adolescent girl's educational attainment, and type of place of residence were statistically associated with adolescent pregnancy. Households of non-pregnant adolescents had older adult heads, with higher educational attainment, and were wealthy.

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