Rates and predictors of school pregnancy among black women in the North West province, South Africa

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Abstract

Learner pregnancy is one of the challenges impeding the unlocking of the potentials of women in sub-Saharan Africa. This paper estimated the prevalence of learner pregnancy and identified its predictors in the North West province of South Africa. The paper used cross-sectional data on 582 black women and the nested logistic regression model to analyse the data. The study found that 38% of the women become pregnant at school. Learner pregnancy was significantly higher for women who had sexual debut at <18 years; were in grades 8 and 9 or higher at age 14; attained <grade 8; had previously dropout of school; had mothers who attained <grade 8; and lived in rural neighbourhoods. We conclude that the prevalence of learner pregnancy is high in the North West province of South Africa, and an integrated approach involving individual, school, family and neighbourhood level strategies are needed to address the problem.

Keywords: Education; girl child; MDGs; pregnancy; South Africa

Résumé

Apprenant la grossesse est un des défis qui empêchent le déverrouillage des potentiels des femmes en Afrique subsaharienne. Cet article a estimé la prévalence de la grossesse de l'apprenant et identifié ses facteurs prédictifs dans la province Nord-Ouest de l'Afrique du Sud. Le papier utilisé des données transversales sur 582 femmes noires et le modèle de régression logistique imbriquées pour analyser les données. L'étude a révélé que 38 % des femmes deviennent enceintes à l'école. Grossesse de l'apprenant est significativement plus élevée pour les femmes qui ont eu des débuts sexuels à < 18 ans ; étaient dans les grades 8 et 9 ou supérieurs à l'âge de 14 ; atteint < 8e année ; auparavant d'abandon de l'école ; avait des mères qui atteint < 8e année ; et vivaient dans des quartiers ruraux. Nous concluons que la prévalence de la grossesse de l'apprenant est élevée dans la province du Nord-Ouest de l'Afrique du Sud et un individu impliquant de l'approche intégrée, les stratégies de niveau scolaire, la famille et de voisinage sont nécessaires pour régler le problème.

Mots-clés : Éducation ; fillette ; OMD ; grossesse ; l'Afrique du Sud

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Introduction

Learner pregnancy constitutes a large proportion of teenage unwanted pregnancy in sub-Saharan Africa (Lesetedi *et al.* 1988), and it is a threat to achieving MDG 2 for girls in this region. It is also a matter of concern because of its association with most social and reproductive health problems faced by young mothers including failure to eradicate extreme poverty and hunger; achieving gender equality and empowerment of women; reducing childhood mortality; improving maternal health; and reversing the spread of HIV/AIDS and its impacts (United Nations, 2012).

Learner pregnancy is the main cause of school dropout and low educational outcomes for women (Karabo & Ayiga, 2013; Perper *et al.*, 2010). It leads to poverty, defined as a lack of income, powerlessness, deprivation, constrained choices, unfulfilled capabilities and a lack of skills (UNDP, 2002), which impedes the expansion of opportunity by locking the potential of young women in the short term. In the long term, learner pregnancy can lead to intergenerational poverty and vulnerability both of which are processes by which poor parents transmit poverty and other forms of vulnerability including sexual risks to their children through a low level human capital trap (Mayer-Foulkes, 2009). Additionally, learner pregnancy exacerbates gender inequality and disempowerment because of the low education and low "capabilities" thereof of girls who were previously pregnant and dropped out of school (Sen, 1999). Low education has also been associated with high childhood and maternal mortality (Aderibigbe *et al.*, 2011) and greater exposure to the risk of HIV/AIDS infection (Mbirimtengerenji, 2007) in sub-Saharan Africa.

Literature Review

Learner pregnancy is pervasive in sub-Saharan African countries. Previous studies identified individual, school, household and community level factors including young age at sexual debut (Macleod & Tracey, 2010); a higher age at school entry and lower grade at an older age (Lloyd, 2005); grade repetition and school withdrawals as predictors of learner pregnancy (Marteleto *et al.*, 2008). Other predictors are sexual exploitation by fellow male students and teachers (Boerma *et al*, 1998); sexual violence by a close partner and or peers (Pallitto & Murilo, 2008); family structures characterized by broken, single parent, extended families and large numbers of siblings (Hillis *et al.*, 2010; Rwenge, 2003); household poverty (Adeboyejo & Onyeonoru, 2003); and a lack of discourse between parents and children on sexual matters (Izugbara, 2008). Neighbourhoods as a spatial construct have also contributed to learner pregnancy (Burgard & Lee-Rife, 2009).

South Africa, with 30%, has one of the highest learner pregnancy prevalence rates in sub-Saharan Africa (National Research Council & Institute of Medicine, 2005). In addition to some of the factors outlined above, learner pregnancy in South Africa is attributed to society's tolerant attitude towards early age at sexual debut and premarital childbearing (Pillaw, 2006); and the rapidly changing family structure (Hillis*et al.*, 2010). The impacts of learner pregnancy in South Africa include the high school dropout rate (Shisana *et al.*, 2010) and low school re-entry rates for the girl child (Ayiga & Karabo, 2014); and poverty faced by teenage mothers and their children (Wright & Noble, 2012). This has created the need to expand the children's social protection programme (Department of Social Development [South Africa] *et al.*, 2012). The challenges now being faced by South Africa including high youth unemployment, aging, demand for quality education, health services, housing and budgetary constraints suggest that it may not be possible to sustain the social protection programme without plugging the supply of socially vulnerable children (Pauw & Mncube, 2007).

Although the level of learner pregnancy in the North West province reduced slightly from 2,197 to 2,157 over the 2007 and 2008 period (Department of Basic Education [South Africa], 2010), it has remained high and the factors driving the high prevalence of learner pregnancy in the province remain poorly understood. Unlike other provinces in South Africa, no population based studies to identify the factors predicting learner pregnancy have been conducted in the North West province. This has called for a study to investigate, inform and strengthen provincial and local level interventions to reduce learner pregnancy and its impacts on teenage women. This paper therefore estimated the prevalence and identified the predictors of learner pregnancy in North West province of South Africa.

Data and methods

Study population

The paper used data on 582 black women collected by use of cross-sectional research design from two districts (Bojanala and Modiri-Molema) in the North West Province of South Africa in 2010. The event history method was used to collect retrospective data on events that occurred to women and the time at which they occurred from age 14 when the women were enrolled in school to the date of permanent school dropout or school re-entry and matriculation.

A multi-stage sampling design was used to select women for interview. The first stage involved selecting the districts of Bojanala and Modiri-Molema out of the four districts of North West province by use of simple random sampling. In the second stage four local municipalities were selected by use of stratified random sampling using the urban and rural neighbourhoods as a stratification criterion. In the third stage, 600 households were selected through systematic sampling. From each household, one woman aged 22 years or older was selected for interview. The eligibility criteria used in selecting the target women were being black, enrolled in school at age 14 and not having experienced a pregnancy before age 14.

A structured and pre-coded questionnaire was used to collect individual, school, household and neighbourhood level variables and pregnancy experience of 600 women who were enrolled in school at age 14 and had no previous pregnancy experience. The data were collected through face to face interviews by trained research assistants. The questionnaire was first translated into Setswana, the dominant language in the North West province and then back to English to ensure that the meanings of the translations remained consistent. However, 18 questionnaires were dropped from this analysis because of incomplete data.

Ethical issues

Ethical approval was obtained from the Higher Degrees and Research Committee of the Faculty of Human and Social Sciences of North-West University, Mafikeng Campus. Permission to collect data was also obtained from the North West Premier's office, area chiefs and district managers. Informed consent was obtained from each respondent after assurance that their identity and data collected would remain confidential. Respondents were also informed of their right to participate or withdraw from the study at any stage without consequences.

Measures

The dependent variable was becoming pregnant while enrolled in school from age 14. If learner pregnancy occurred any time from age 14, the pregnancy status of the woman was coded "1" and "0" if otherwise.

The independent covariates included individual, school, household and neighbourhood level data. The individual level covariates were age cohorts which was categorized as less than 25, 25-29 and 30 years or older because we expect age at sexual debut to vary by age cohorts. Birth order was recorded as 1st, 2nd, 3rd and 4th or higher; and age at sexual debut was recorded as less than 18 and 18 years or older. The school level covariates included age at school entry which was recorded as less than grade 7, grade 7 and grade 8 or higher; grade at age 14 was recorded as less than grade 8, grade 8 and grade 9 or higher; and the highest grade the women attained was recorded as less than grade 8, grades 8-10 and grade 11 or higher. Additionally, previous school dropout status was also included and recoded as never dropped out and dropped out of school.

Regarding household level covariates, the number of siblings recorded as "1", "2", "3" and "4" or higher; family structure recorded as both parent, single parent mother headed, single parent father headed and extended families; and the highest grade attained by the mothers' of the women which was recorded as less than grade 8, grades 8-10 and grade 11 or higher were analysed. Neighbourhood level covariates analysed were perceived schooling status of neighbourhood peers which was categorized as not in school and in school; and district and place of residence were Bojanala and Modiri-Molema and rural and urban neighbourhoods respectively.

Statistical analysis

Data analysis was done by use of SPSS (PASW version 21) at three levels. The first, univariate analysis, described the individual, school, household and neighbourhood level profiles of the women from age 14 until they either permanently dropped out of school or matriculated at grade 12. The result of the univariate analysis is presented in frequency distributions. The bivariate analysis examined differentials and the association between learner pregnancy and women's individual, school, household and neighbourhood level covariates by

use of the Pearson's chi-square statistic. The levels of associations were tested at the 95% confidence interval (p<0.05).

At the multivariate level, the nested binary logistic regression model (Elisa & Wang, 1992) was used to test the hypothesis that "age at sexual debut is a significant predictor of school pregnancy after controlling the effects of other individual, school, household and neighbourhood level covariates simultaneously". It was also used to identify other significant predictors of learner pregnancy. This method of analysis was chosen because the dependant variable is dichotomous and was coded "1" if a woman became pregnant at school at any time from age 14 and "0" if otherwise. The dependent variable therefore satisfied the criteria for the use of the model. The covariates used to fit the multivariate models were those that were significantly associated with learner pregnancy status at the bivariate level of analysis.

Results

Profile of the sample

Table 1 presents the profiles of the study sample. The table shows that the mean age of the women was 28 years and 43.6% of the women were 30 years or older; nearly 30.8% were 25-29 years; and nearly 25.6% were under 25 years. The mean birth order was 2.7 and 32.1% were of birth order "1", 21.6% were of birth order "2" and 30.1% were of birth "4" or higher. Only 16.2% of the women were of birth order "3". The mean age at sexual debut was 18 years and nearly 6 in 10 of the women had sexual debut at 18 years or older; and nearly 4 out 10 of the women (38%) became pregnant at school.

Distribution by school level characteristics shows that the mean age of the women at school entry was 7 years. About 38% of the women entered schooling for the first time at less than 7 years, 49% entered schooling at 7 years and only 14.4% entered schooling at 8 years or older. The mean grade at age 14 was grade 8 and 45.7% of the women were in less than grade 8 at age 14, nearly 33.8% were in grade 8 at age 14 and only one fifth were in grade 9 or higher at age 14. Table 1 also presents the highest grade attained by the women showing that the mean grade they attained was grade 11. The highest grade attained by more than half of the women was grade 11 or higher followed by grades 8-10 (25%), and just over 20% attained less than grade 8. About 47% of the women previously dropped out of school and the mean grade at school dropout was grade 9.

Furthermore, Table 1 presents the women by household level characteristics. The table shows that the mean sibling number of the women was 3.4 and the majority (43%) had "4" or more siblings. Forty one percent of the women lived in both parent families, 37% lived in single parent mother headed family, nearly 12% lived in single parent father headed family and only 11% lived in extended family. The mean grade attained by the mothers' of the women was grade 7.4, the majority (46.4%) attained grades 8-10 and only 18.4% of the mothers of the women attained grades 11 or higher. Regarding neighbourhood characteristics, 6 in 10 of the women perceived that their neighbourhood peers were not in school; nearly 7 in 10 and 35% of the women were from Bojanala and Modiri-Molema districts respectively; and nearly 8 in 10 and 22% of the women were living in urban and rural neighbourhoods respectively.

Table 1   Percentage distribution of women by selected characteristics

Characteristics	%	Number of women
Age cohort		
<25	25.6	149
25-29	30.8	179
35+	43.6	254
Median age of women	28	582
Birth order		
1	32.1	187
2	21.6	126
3	16.2	94
4 or higher	30.1	175

Mean birth order	2.7	582
Age at first sex	40.5	236
<18 years	59.5	346
18 years or older	18	582
Median age at first sex		
Ever been pregnant at school?		
Yes	38.5	224
No	61.5	358
Age at school entry		
<7	37.8	220
7	47.8	278
8 years or older	14.4	84
Median age at school entry	7	582
Grade at age 14		
<8	45.7	266
8	33.8	197
9 or higher	20.4	119
Median grade at age 14	8	582
Highest grade attained		
<8	20.4	119
8-10	24.9	145
11 of higher	54.6	318
Mean highest grade attained	10.9	582
Previous school dropout status		
Ever dropped out	47.4	276
Never dropped out	52.6	306
Median grade at previous school dropout	9	582
Family structures		
Both parents	40.5	236
Single parent mother headed	37.1	216
Single parent father headed	11.5	67
Extended	10.8	63
Number of siblings		
1	18.8	109
2	19.8	115
3	18.8	109
4+	42.7	248
Mean number of siblings	2.7	582
Mothers highest education		
<8	35.2	205
8-10	46.4	270
11or higher	18.4	107
Mean level of education	7.4	582
Number of siblings		
1	18.8	109
2	19.8	115
3	18.8	109
4+	42.7	248
Mean number of siblings	2.7	582
Perceived schooling status of neighbourhood peers		
Not in school	60.4	350
In school	39.6	229
District of residence		
Bojanala	64.9	378
Modiri-Molema	35.1	204

Place of residence		
Urban	22.5	131
Rural	77.5	451
Total	**100.0**	**582**

Differentials in learner pregnancy

Table 2 presents differentials in learner pregnancy by selected covariates. The table shows that learner pregnancy increased with age cohorts from 31% in the under 25 year age cohort to 45.3% in the 30 years or older age cohorts. Learner pregnancy decreased with increase in age at sexual debut. Nearly 58% and 25.4% of the women who had the first sex at less than 18 and 18 years or older respectively, experienced learner pregnancy. The results show that age cohort and age at sexual debut were significantly associated with learner pregnancy at p<0.05.

Learner pregnancy also increased with increase in age at school entry. Fifty five percent of the women who entered school at 8 years or older became pregnant at school followed by those who entered school at 7 years (41.4%) and less than 7 years (29%). Learner pregnancy decreased with increase in grade at age 14 from 48.1% at less than grade 8, to 31.5% at grade 8 and nearly 29% at grade 9 or higher. Additionally, learner pregnancy increased from 46.2% to 59.3% among women who attained less than grade 8 and grades 8-10 before declining to 26.1% among women who attained grade 11 or higher. Regarding the effect of previous school dropout experience, nearly 6 in 10 women who previously dropped out of school became pregnant at school. The results show that age at school entry, grade at age 14, highest grade attained and previous school dropout experience were significantly associated with learner pregnancy at p<0.05.

Additionally, Table 2 shows that learner pregnancy was higher among women in single mother headed family (37.7%) followed by single father headed family (41.8%) and extended (46%) family than in both parent family (36.1%). Learner pregnancy was higher among women whose mothers' attained grades 8-10 (46.4%) followed by those who attained less than grade 8 (35.2%) and grade 11 or higher (18.4%). Table 2 also shows that more women who perceived that their neighbourhood peers were in school (46.3%) became pregnant at school than those who perceived that their neighbourhood peers were not in school (33.7%); and more women who lived in rural (44.2%) than urban (18.3%) neighbourhoods also became pregnant at school. The results show that the level of education attained by the mothers' of the women, perceived schooling status of neighbourhood peers by the women in this sample and type of neighbourhood residence were significantly associated with learner pregnancy at p<0.05.

Table 2 **Percentage distributions of women by learner pregnancy status and selected characteristics**

Characteristics	Have you ever been pregnant at School?			Total
	Yes	**No**	**X_2**	
Age cohort				
<25	30.9 (46)	69.1 (103)	9.41***	100.0 (149)
25-29	35.2 (63)	64.8 (446)		100.0 (179)
35+	45.3 (115)	54.7 (139)		100.0 (254)
Birth order				
1	40.1 (75)	59.9 (112)	3.29	100.0 (187)
2	43.7 (55)	56.3 (71)		100.0 (126)
3	33.0 (31)	67.0 (63)		100.0 (94)
4+	36.0 (63)	64.0 (112)		100.0 (175)
Age at first sex in years				
<18	57.6 (136)	42.4 (100)	61.42****	100.0 (236)
18+	25.4 (88)	74.6 (258)		100.0 (346)
Age at school entry				

<7	28.6 (63)	71.4 (157)	19.38****	100.0 (220)
7	41.4 (115)	58.6 (163)		100.0 (278)
8+	54.8 (46)	45.2 (38)		100.0 (84)
Grade at age 14				
<8	48.1 (128)	51.9 (138)	19.46****	100.0 (266)
8	31.5 (62)	68.5 (135)		100.0 (197)
9 or higher	28.6 (34)	71.4 (85)		100.0 (119)
Highest grade attained				
<8	46.2 (55)	53.8 (64)	50.17****	100.0 (119)
8-10	59.3 (86)	40.7 (59)		100.0 (145)
11+	26.1 (83)	73.9 (235)		100.0 (318)
Previous school dropout status				
Ever dropped out				
Never dropped out	58.2 (178)	41.8 (128)	105.58****	100.0 (306)
	16.7 (46)	83.3 (230)		100.0 (276)
Number of siblings				
0	34.1 (47)	56.9 (62)	2.52	100.0 (109)
1	36.5 (42)	63.5 (73)		100.0 (115)
2	42.2 (46)	57.8 (63)		100.0 (109)
3 or higher	35.9 (89)	64.1 (159)		100.0 (248)
Mothers highest education				
<8	52.7 (108)	47.3 (97)	26.98****	100.0 (205)
8-10	31.1 (84)	68.9 (186)		100.0 (270)
11or higher	29.9 (32)	70.1 (75)		100.0 (107)
Perceived schooling status of peers				
Not in school	33.7 (118)	66.3 (232)	9.23***	100.0 (350)
In school	46.3 (106)	53.7 (123)		100.0 (229)
District of residence while at school				
Bojanala	38.6 (146)	61.4 (232)	0.21	100.0 (378)
Modiri-Molema	38.2 (78)	61.8 (126)		100.0 (204)
Place of residence while at school				
Rural	44.3 (200)	55.7 (251)	29.40****	100.0 (451)
Urban	18.3 (24)	81.7 (107)		100.0 (131)
Total	**38.5 (224)**	**61.5 (358)**		**100.0 (582)**

Levels of significance: *=0.05; **=0.01; ***=0.001; ****=0.0001

Predictors of learner pregnancy

The adjusted coefficients predicting the effects of individual, school, household and neighbourhood level covariates on learner pregnancy are presented in Models I-III in Table 3. Model I shows that sexual debut at less than 18 years significantly increased learner pregnancy by 4.07 (p<0.0001) times. Women who were in the under 25 and 25-29 years age cohorts were 50% (p<0.001) and 36% (p<0.01) respectively less likely to have experienced learner pregnancy after adjustments. Model II shows that after adjusting for the effects of school level covariates, initiating sexual debut at less than 18 years significantly increased learner pregnancy by 3.62 (p<0.0001) times. Women who were in less than grade 8 at age 14 and previously dropped out of school were 1.50 (p<0.01) and nearly 4.0 (p<0.0001) times significantly more likely to have experienced learner pregnancy. Conversely, women who attained less than grade 8 and grades 8-10 were 88% (p<0.0001) and 79% (p<0.001) significantly less likely to have experienced learner pregnancy. Model II also shows that learner pregnancy significantly increased by 2.62 (p<0.0001) and 2.73 (p<0.0001) times among women whose mothers' highest grade attainment was less than grade 8 and grades 8-10 respectively. Model III presents results on effects of age at sexual debut on

learner pregnancy after controlling the effects of selected school, household and neighbourhood covariates simultaneously. The model shows that although the effect of initiating sexual debut at less than 18 years reduced in Models II and III, it remained a significant predictor of learner pregnancy, and women who had sexual debut at less than 18 years were 3.00 (p<0.0001) times more likely to have experience learner pregnancy than women who had sexual debut at 18 years or older.

Model III also shows that women who were in grade 8 and grade 9 or higher at age 14 and attained less than grade 8 were 1.33 (p<0.01), 1.64 (p<0.05) and 1.41 (p<0.0001) times respectively significantly more likely to have experienced learner pregnancy. Additionally, women who previously dropped out of school, whose mothers' highest educational attainment was less than grade 8 and

lived in rural neighbourhoods were 4.5 (p<0.001), 1.56 (p<0.05) and 3.18 (p<0.0001) times respectively significantly more likely to have experienced learner pregnancy. Conversely, women whose highest grade attainment was grades 8-10 and those who perceived that their neighbourhood peers were in school were 78% (p<0.01) and 46% (p<0.01) respectively significantly less likely to have experienced learner pregnancy. From Model III, it can be concluded that a lower age at sexual debut (<18 years), a higher grade at age 14 (grade 8 and grade 9 or higher), a low school grade attainment by both the women and their mothers, previous school dropout experience and living in rural neighbourhoods remained significant predictors of learner pregnancy in this study population.

Table 3 **Logistic regression coefficients showing the adjusted effects of selected individual, school, household and neighbourhood level covariates on learner pregnancy**

Selected covariates	Model I		Model II		Model III	
	OR	CI	OR	CI	OR	CI
Age cohort						
Under 25	0.50***	0.31-0.79	0.74	0.44-1.23	0.80	0.47-1.34
25-29	0.64*	0.42-0.98	0.90	0.56-1.44	0.95	0.59-1.55
30+ ®	1.00		1.00		1.00	
Age at first sex						
<18	1.00		1.00		1.00	
18 ®	4.07****	0.17-0.35	3.62****	0.22-0.44	3.00****	0.21-0.46
Age at school entry						
<7®			1.00		1.00	
7			0.67	0.34-1.14	0.76	0.39-1.46
8 years or older			0.84	0.46-1.43	0.95	0.52-1.73
Grade at age 14						
<8			1.50**	0.88-2.57	1.33**	0.74-2.42
8			1.15	0.65-2.03	1.64*	0.88-1.75
9 or higher ®			1.00		1.00	
Highest grade attained						
<8			0.12****	0.04-0.32	1.41****	0.05-0.40
8-10			0.21***	0.08-0.57	0.22**	0.07-0.63
11 or higher ®			1.00		1.00	
Previous school dropped out status						
Ever dropped out®			1.00		1.00	
Never dropped out			3.97****	1.42-8.02	4.50****	3.24-10.1
Mothers' level of education						
< =7			2.73****	1.68-4.41	1.56**	0.89-1.23
8-10			1.93***	1.24-3.01	0.87	01.21-2.45
11 or higher ®			1.00		1.00	
Family structure						

Both parents ®			1.00	
Single mother headed			0.69	0.39-1.22
Single father headed			0.39	0.39-1.20
Foster/extended			0.85	0.42-1.68
Perceived schooling status				
of neighbour peers			0.54****	0.35-0.82
In school			1.00	
Not in school®				
Place of residence at 14				
Urban ®				
Rural			1.00	
			3.18****	1.80-5.59
Constant	1.86***	2.45***	0.92****	

® Reference category; OR=odds Ratio; CI= Confidence interval; levels of significance: *=0.05; **=0.01; ***=0.001; ****=0.0001

Discussion

Learner pregnancy, as a component of teenage pregnancy, is one of the challenges that have prevented the unlocking of the potentials of a large proportion of women in sub-Saharan Africa (UNDP, 2002), and contributed greatly in perpetuating poverty and poor reproductive health in this region (Mmbaga et al., 2012). Previous studies have also argued that this phenomenon contributes significantly to the failure of many countries in this region towards attaining the MDGs (United Nations, 2012). South Africa is one of the countries in sub-Saharan Africa where school pregnancy is common (Willan, 2013). It has contributed to the high school dropout rates, leading to the poor educational outcomes among black women. This study, therefore, estimated the prevalence of learner pregnancy and identified some of the most significant predictors of learner pregnancy among black women who were enrolled in school at age 14 and had no previous pregnancy experience.

The study found that 38% of the women in the sample experienced learner pregnancy. At the bivariate level, learner pregnancy increased with age cohorts and low age at sexual debut; higher age at school entry, lower grades at age 14, lower grade attainment and among women who previously dropped out of school. Additionally, learner pregnancy was higher for women whose mothers had a low school grade attainment and those who perceived that their neighbourhood peers were in school. Learner pregnancy was also prevalent for women in rural neighbourhoods. At the multivariate level, the odds of becoming pregnant at school were higher for women who had sexual debut at less than

18 years; were in grades 8 and 9 or higher at age 14, had attained less than grade 8 and previously dropped out of school; had mothers' who attained less than grade 8 education; and lived in rural neighbourhoods.

Young age at sexual debut and the high prevalence of premarital sex has increased the susceptibility of teenagers to learner pregnancy. The early age at sexual debut has been attributed to the erosion of cultural and sexual values and norms, which has somehow allowed young people to express sexual behaviours which were previously disapproved, freely (Bello & Adesemoye, 2012). A previous study attributed the young age at sexual debut in South Africa to the apparent tolerance of premarital sex (Pillow, 2004). The rapidly changing family structure, that is now characterized by single parent households, extended and child headed families, encourages early age at sexual debut as a survival strategy against the stresses of poverty, subsequently leading to pregnancy (Oleke, et al., 2006).

Additionally, some studies have suggested that lack of paternal and maternal support (Karabo & Ayiga, 2013; Ellis et al., 2003); lack of child-parent discourse on sexual matters, which is the case in most sub-Saharan Africa, makes teenage girls to rely more on their peers for support (Mmbaga et al., 2012). Inappropriate advice and emulating peers to gain acceptance by engaging in sexual activities with older men "the sugar daddy syndrome" increases the susceptibility of teenage women to pregnancy (Resnick, 2007).

A large number of women in this study were older than the recommended grade (grade 8) at age 14, which indicates that they joined school late or

they repeated grades due to poor performance or previously dropped out or withdrew from schooling. The elevated risk of learner pregnancy for girls who attained less than grade 8 at age 14 and previous dropouts in this study is consistent with the suggestion that older age at a lower grade or slow grade progression due to grade repetition and withdrawal from schooling are risk factors for learner pregnancy for girls (UNESCO, 2011). Grade repetition poses a significant problem for girls because as they get older (Grant & Hallman, 2006), schooling competes with other life events and the older age at a low grade increases their distaste for schooling and also reduces the level of support from parents and guardians to keep them in school (Kane, 2004). Additionally, older age at school competes with other roles, usually of an adult nature, which effectively shifts the girls' interest to non-school activities such as remunerative work to support themselves and or their families (Sabates *et al*., 2010). Other factors that could lead to learner pregnancy for older girls include contraceptive failure and not feeling comfortable obtaining and using contraceptives (Santelli *et al*., 2006), use of alcohol and other illicit entertainment drugs (Deardorff, 2006), and pressures to have unprotected sex or fear to ask a partner to use condoms (Alio *et al*., 2009).

The finding that school pregnancy is higher in rural neighbourhoods is consistent with observations by a previous study (Mchnu, 2012). In this study, we suggest that the higher teenage learner pregnancies could be attributed to the creeping changes in family structures in rural neighbourhoods and its effects on sexual behaviour which has already been discussed. The modernization processes, have increased the diversity of social organizations even in rural areas leading to the reproduction of urban conditions and value systems in rural areas (Hobbs, 1995), which have eroded rural sexual norms, leading to teenage sexual activity and pregnancy. Additionally, the lack of or inadequate sporting and recreational facilities that can engage teenagers and protect them from risky health behaviours including sexual behaviour could explain the high rate of learner pregnancy in rural neighbourhoods (Erulkar *et al*., 2001).

South Africa's large population of teenage learners provides an opportunity to address teenage pregnancy using school based interventions. The fact that most teenagers enter school before sexual debut is a great opportunity to inculcate norms,

values, skills and aspirations that delay sex and pregnancy. The increasing family fragility must also be addressed because parents as primary socialising agents are better positioned to influence the sexual behaviour and outcomes of children through constant support and supervision that encourages sexual discourse. Peers are another important group that is relied upon for guidance and direction, whose influence can be tapped by organizing school and community peer support groups. Additionally, policies that focus on increasing access to and uptake of adolescent reproductive health services and reduction of sexual violence are also recommended. The success of school and community based interventions to reduce teenage pregnancy will curtail the risk of intergenerational transfer of poverty and other forms of vulnerability including teenage learner pregnancy among teenage girls in South Africa.

Limitations

Although this paper has identified some significant predictors of learner pregnancy, it has some limitations. Firstly, the findings of the study could have been affected by the accuracy of reporting data on pregnancy and childbirth which issues are usually affected by social desirability biases. It is likely that some of the women did not report becoming pregnant at school, which is likely if the pregnancy was aborted. Secondly, some of the events that could have affected learner pregnancy status took place a long time ago and could have been omitted. For example school time socioeconomic status of the women was not analysed, which could have affected the results obtained in this study, particularly the high significant levels of some of the covariates. Thirdly, the use of cross-sectional retrospective data makes the temporality of learner pregnancy and some of the predictors used in this study unknown.

Conclusion

We conclude that the problem of learner pregnancy is prevalent in the North West province, calling for learner pregnancy to be examined from a broader perspective including individual, school, household and neighbourhood level environments in which teenage learners operate. Key among these issues are the apparent tolerance of early age at sexual debut and premarital childbearing, the slow school progression reflected by older age at a lower school grade and structural factors such as the changing

family structure and spatial neighbourhood vulnerabilities which could lead to intergenerational transfer of vulnerability including learner pregnancy. This is reflected in the low education attainment of both the women who become pregnant at school and that of their mothers, which suggests that daughters, like their mothers, were not equipped with skills, values, attitudes and aspirations to prevent learner pregnancy.

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Authors Contributions