Adolescent pregnancy and current contraceptive use among adolescent and young women aged 16-24 years in Durban and Soweto, South Africa

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Abstract

Background

High rates of adolescent pregnancies in South Africa continues to be a pressing public health concern. This study examines (1) the prevalence of current contraceptive use; and (2) the independent association between adolescent pregnancy and effective contraception use.

Methods

This study uses baseline cross-sectional data from a youth-centered sexual and reproductive health (SRH) cohort study among youth (aged 16–24) in Soweto and Durban (2011–2017). Among 207/253 females reporting consensual sexual activity, crude and adjusted logistic regression examine associations between ever having an adolescent pregnancy (aged 15–19) or pregnancy at age 20–24 (ref no pregnancy) and effective contraception use (barrier and/or hormonal methods) in the last 6 months.

Results

Over one-third (34.3%, n = 71) of females reported a history of adolescent pregnancy and 13.0% (n = 27) had a pregnancy at age 20–24. Nearly all (95.9%, n = 94) first pregnancies were unintentional. Current effective contraceptive use was reported by 74.6% (n = 53) with an adolescent pregnancy, 66.6% (n = 18) of those pregnant at 20–24 years, and 46.8% (n = 51) of never pregnant females (p < 0.001). All effective contraceptive users pregnant at 20–24 years and 83% (n = 44) of the adolescent pregnancy group reported using hormonal methods vs. 52.9% (n = 27) of never pregnant females. In the adjusted model, a history of adolescent pregnancy was associated with 3.45 (95%CI = 1.75–6.82) times greater odds of effective contraceptive use (vs. no pregnancy).

Conclusion

suggest that adolescent females are accessing effective methods of contraception including hormonal methods only after a pregnancy event, highlighting the need for earlier provision of youth-friendly SRH services.

Introduction

Ensuring access to a wide range of contraceptive methods is essential to securing the contraception needs, well-being, and autonomy of women, while supporting the health and development of communities (World Health Organisation 2018).[1] The 2016 South African Demographic and Health Survey (SADHS 2016),[2] reported that overall, 59.6% of sexually active women aged 15–49 nationally were using at least one method of contraception. The contraceptive prevalence rate (CPR) in sexually active young women aged 15–19 in the 2016 SADHS was 60.4% and slightly higher in females aged 20–24 at 61.3% .

Although South Africa (SA) has one of the highest CPRs in Sub-Saharan Africa (United Nations 2019),[3] there remains a high rate of adolescent pregnancy (Govender, Naidoo and Taylor 2020; Mchunu, Peltzer, Tutshana and Seutlwadi 2012; SADHS 2016).[2,4-5] Adolescent pregnancy, also commonly referred to as teenage pregnancy, is

typically defined as pregnancy in females aged 15–19. The 2016 SADHS found that 16% of South African adolescent females aged 15–19 have begun childbearing: 12% have given birth, and another 3% were pregnant with their first child at the time of interview (SADHS 2016).[2] Although adolescent pregnancy has been a major social and economic challenge in SA for decades, the prevalence of overwhelmingly unintended pregnancies among females aged 15–19 has remained unchanged for the last 20 years (SADHS 2016).[2]

In SA, the persistently high prevalence of unintended adolescent pregnancy has been attributed to numerous and multileveled factors. At the individual level, factors contributing to adolescent pregnancy include lack of knowledge about sex and contraception, young age at first sex, low education and being out of school (Mchunu, Peltzer, Tutshana and Seutlwadi 2012; Mothiba and Maputle 2012). [4,6] Partner-level factors include in age disparate relationships (≥ 5 or more years older) and gender power (in)equity in relationships (MacPhail, Pettifor, Pascoe and Rees 2007; Makola, Mlangeni, Mabaso, Chibi, Sokhela, Silimfe et al. 2019; Toska, Cluver, Boyes, Pantelic and Kuo 2015).[7–9] Health-system level factors include lack of youth-friendly sexual and reproductive health (SRH) services and perceptions of negative provider attitudes (Mothiba and Maputle 2012). [6] Reasons for not using contraception are also multileveled and include individual perceptions of contraceptive side effects, low education, alcohol use, intrapersonal peer pressure and needing to please partners, as well as societal, and structural barriers including poverty and institutional stigma from healthcare provider negative attitudes (Govender, Naidoo and Taylor 2020; MacPhail, Pettifor, Pascoe and Rees 2007; Makola, Mlangeni, Mabaso, Chibi, Sokhela, Silimfe et al. 2019).[5,8–9] Morojele et al. (2010)[10] hypothesized that pregnancy and childbirth exposed women to family planning and antenatal services leads to increased access to contraception. However, to our knowledge, no study to date has explicitly examined the independent association between adolescent pregnancy and contraceptive use among young South African females.

The objective of this study was to (1) estimate the prevalence of current contraceptive use and methods used; and (2) examine the independent association between a history of adolescent pregnancy and current contraceptive use.

Methods

We used baseline survey data from participants enrolled in AYAZAZI (meaning "knowing themselves" in isiZulu), a prospective cohort study which aimed to understand patterns of socio-behavioural and biomedical HIV risk among male and female youth aged 16-24 years. AYAZAZI was conducted at two sites: the MatCH Research Unit (MRU), Commercial City research site in Durban, KwaZulu-Natal (KZN) Province and the Perinatal HIV Research Unit (PHRU) located at Chris Hani Baragwanath Academic Hospital in Soweto, Johannesburg, Gauteng Province (GP). Participants were followed-up every six months until 12 (Durban) or 18 (Soweto) months.

The AYAZAZI study inclusion criteria included being 16-24 years of age, residing in Soweto or Durban, self-reporting an HIV-negative or unknown HIV status, and being willing and able to provide voluntary written informed consent for study procedures. Exclusion criteria included current participation in another clinical or observational HIV prevention study.

Participants were recruited using posters, pamphlets, word-of-mouth, and in-person community outreach to recruit 425 participants (253 females, 172 males) across both sites. In Soweto, participants were also recruited through an HIV testing and counselling clinic at the PHRU while in Durban, participants were also recruited

through a public reproductive health clinic at Commercial City. The study was undertaken between 2014 and 2017.

Participants completed an on-site structured, online questionnaire (supported by DataFAX[TM] software) conducted in English, isiZulu, or Sesotho, as per participant preference at enrolment, administered in-person by youth interviewers. The questionnaire assessed demographic characteristics, social determinants of health, health care-seeking behaviours, sexual behaviours in the six months prior to the, pregnancy and contraceptive history, substance use, experiences of violence, and self-perceived HIV risk. This analysis used baseline survey data from female participants who reported ever having had consensual sex.

Exposure of interest: Adolescent pregnancy

A three-level variable was created to compare females who had a pregnancy as an adolescent (aged 15-19), a pregnancy not as an adolescent (aged 20-24), or never being pregnant. Age at pregnancy was determined by subtracting the participant's date of birth from the reported end date of the first pregnancy.

Outcome of interest: Current contraceptive use

Participants were considered to be effective contraception users if they reported using any of the following methods in the last six months: consistent condom use (defined as condom use at last sex with all reported partners), using oral contraceptive pills, two- or three-monthly hormonal injectable, hormonal implant, or dual method (i.e. consistent condom use and hormonal method). Participants were considered non-users of contraception if they reported not using any method or only using ineffective contraception methods (defined as inconsistent condom use, withdrawal, or only using emergency contraception as their main contraception method) in the last six months.

Socio-demographic variables

The baseline questionnaire assessed site (Durban vs. Soweto), age category (16-19, 20-24), sexual orientation (straight vs. lesbian, bisexual), housing (formal vs. reconstructive development project [RDP], hostel, shack, or living outdoors), income in South African Rand (ZAR) (<400, 401-1600, 1601+), and currently a learner (in high school) or student (post high school) (yes vs no).

Household hunger was assessed using the 9-item Radimer (Radimer, Olson and Campbell 1990)[11] household hunger scale. Participants were asked a series of questions about their experiences with hunger in the past month (e.g. have you ever gone to bed hungry?) and how often this occurred (often, sometimes, and rarely). Participants were given a score of 0 for responding No to the experiences questions, 1 if they responded rarely or sometimes to the frequency questions, and 2 if they responded often to the frequency questions. Participants were coded as having any household hunger if they had a score of ≥1.

Participants were also asked a series of questions regarding relationship practices, sexual behaviours and experiences of violence including: length of relationship (<12 months, 12-23 months, ≥24 months), ≥2 partners in the last 6 months (yes vs. no), and age-disparate partnership (≥5 years older). Participants were coded as ever having had transactional sex if they responded yes to the question "have you ever gave sex for money, goods, drugs, or alcohol?". Participants who responded yes to having ever been physically hurt or threatened by a partner

were coded as having experienced partner violence, and those that responded yes to "have you ever having been forced to have sex?" were coded as having experienced sexual violence.

Perceived HIV risk was assessed by asking participants "how much at risk do you think you are of becoming infected with HIV?" (not at all/Low risk vs. medium/high risk).

Statistical analysis

Descriptive statistics examined socio-demographic, behavioural, and relationship characteristics among young women who did and did not report effective contraception use in the last 6 months. We examined the overall and different types of contraception used among the three-level pregnancy variable. Descriptive statistics of where participants learned about contraception were reported among participants who responded to this question by pregnancy types. Baseline differences in socio-demographic factors between effective and ineffective contraceptive users were compared using Wilcoxon rank sum test for continuous variables and Pearson χ2 or Fisher's exact test for categorical variables. A multivariable logistic regression analysis examined the independent association between adolescent pregnancy (vs. no pregnancy) and any pregnancy not as an adolescent (vs. no pregnancy) and effective contraception use, controlling for potential confounders (site, sexual orientation, and income). Confounders were chosen from *a priori* knowledge and selected into the model if p-value in bivariate associations was <0.30. Statistical analysis was conducted in Stata 13 (StataCorp. Stata Statistical Software: Release 13. 2013).[12]

Ethical considerations

All participants aged 18-24 years provided voluntary informed consent at enrollment. For participants aged 16-17 years, parents/legal guardians provided voluntary informed consent and the participant provided voluntary assent. Ethical approval was provided by the Research Ethics Board of Simon Fraser University, (2013S0114) the Human Research Ethics Committee (HREC) at the University of the Witwatersrand (M140707), and the Biomedical Research Ethics Committee at the University of KwaZulu-Natal granted reciprocity to the University of Witwatersrand HREC. Participants received a 150 ZAR (~$12 USD) reimbursement per visit to compensate for transportation costs and time.

Results

Of the 253 females who responded to the baseline questionnaire, 207 (81.8%) reported ever having consensual sex and were included in this analysis. Of these 207 females, approximately half were from each site (Table 1), just under half (47.3%) being 16–19 years (adolescents), and 7.7% identified as lesbian or bisexual. At the time of interview, two thirds (66%, n = 136) were enrolled in high school or post-high school education, a quarter (25.6%, n = 53) reported any household hunger, and 66.7% (n = 138) lived in formal housing,

Table 1
Socio-demographic, relationship, HIV risk and reproductive health factors among those ever reporting ever having sex

Characteristic	N = 207
	n (%)
Site	107 (51.7)
Soweto	100 (48.3)
Durban	
Age	98 (47.3)
16−19	109 (52.7)
20−24	
Current learner/student	136 (66.0)
Any household hunger	53 (25.6)
Relationship length	13 (6.3)
Not in a relationship	100 (48.3)
Less than 2 years	94 (45.4)
Two or more years	
Lives in formal housing	138 (66.7)
Income category	44 (21.3)
<400	117 (56.5)
401−1600	46 (22.2)
1601+	
Two or more partners in the last 6 months	44 (21.5)
Age-disparate partner (5 years older)	75 (38.7)
Transactional sex ever	15 (7.25)
Partner violence ever	36 (17.5)
Forced sex ever	22 (10.7)
Perceived HIV risk	109 (54.0)
Low/no risk	93 (46.0)
Medium/High risk	

Characteristic	N = 207
	n (%)
Binge drinking	60 (29.0)
Did not drink	59 (28.5)
No	88 (42.5)
Yes	
Adolescent pregnancy	109 (52.7)
Never pregnant	27 (13.0)
Pregnancy 15–19 years	71 (34.3)
Pregnancy 20–24 years	

The majority were in a relationship at baseline (93.7%, n = 194) and 38.7% (n = 75) reported their partner was five or more years older than them. A third (34.3%, n = 71) reported a pregnancy at 19 years or younger, while less (13.0 %, n = 27) had their first pregnancy aged 20 years or older (Table 1). Of the 98 females who ever had a pregnancy, 14 (14.6%) had been pregnant twice. Almost all first (95.9% n = 94) and 64.3% (n = 9) of second pregnancies were unintended.

In total 122 (58.9%) of females with a history of sexual activity were using a method of contraception (Table 2). This differed by pregnancy groups, with the lowest contraceptive prevalence found in those who had never been pregnant (46.8%, n = 51). The highest rate was found in females with an adolescent pregnancy (74.6%, n = 53). There were also differences by contraceptive method use across the pregnancy groups with all 18 (100%) contraceptive users among those pregnant at age 20–24 and 83% (n = 44) of females in the adolescent pregnancy group all using hormonal methods compared to 52.9% (n = 27) of the never pregnant group (p = 0.001). The main method relied on in the never pregnant group was condoms (22%, n = 24).

Table 2

Description of where participants learned about contraception and contraception type by pregnancy type

Response	Total	Overall N (%)	Never pregnant N = 109 N (%)	Pregnancy 15–19 years N = 27 N (%)	Pregnancy 20–24 years N = 71 N (%)	p-value
Contraception type	207					< 0.001
No /no effective method[1]		85 (41.1)	58 (53.2)	9 (33.3)	18 (25.4)	
Consistent condom use		33 (15.9)	24 (22.0)	0 (0)	9 (12.7)	
Pill only		8 (3.9)	3 (2.8)	2 (7.4)	3 (2.3)	
Injectable (2 or 3 month)		61 (29.5)	19 (17.4)	14 (51.9)	28 (39.4)	
Implant		12 (5.8)	4 (3.7)	2 (7.4)	6 (8.5)	
IUD		1 (0.5)	0 (0)	0 (0)	1 (1.4)	
Dual methods[2]		7 (3.9)	1 (0.9)	0 (0)	6 (8.5)	
Where did you learn about contraception?	205					0.042
Nurse, doctor or counselor		120 (58.5)	51 (47.2)	18 (68.2)	51 (71.8)	
School		19 (9.3)	15 (13.9)	1 (3.9)	3 (4.2)	
Peer or sibling		19 (9.3)	13 (12.0)	4 (15.4)	2 (2.8)	
Adult family member		17 (8.3)	11 (10.2)	0	6 (8.5)	
TV or Online		22 (10.7)	13 (12.0)	2 (7.7)	7 (9.9)	
Other		8 (3.9)	5 (4.6)	1 (3.9)	2 (2.8)	

[1]Defined as no method, inconsistent condom use or emergency contraception only.

[2] Hormonal method plus condoms.

Of the 205 participants who responded to questions about where they get most of their information about contraception, significantly more (71.8%, n = 51) of those who have had an adolescent pregnancy compared to those who had never been pregnant (47.2 %, n = 51) reported receiving information about contraception from a nurse, doctor or counselor (p = 0.042).

Table 3 describes the bivariate differences between young women who did and did not report effective contraception use in the 6 months prior to their baseline interview. Effective contraceptive users were more likely to reside in Soweto compared to non-effective users (58.2% vs. 42.4%, p = 0.025), and were more likely to have had an adolescent pregnancy compared to non-effective contraception users (43.4% vs. 21.2%). In the adjusted logistic regression model presented in Table 4, young women who had an adolescent pregnancy had 3.45 times greater odds of using effective contraception in the last 6 months compared to young women who had never been pregnant (95%CI = 1.75–6.82). Those who were pregnant not as an adolescent had 2.13 times greater odds of using effective contraception, however the effect estimate contained a null finding (95%CI = 0.85–5.32) (Table 4).

Factor	Total	No effective use n = 85 n(%)	Effective use n = 122 n(%)	P-Value
Site Soweto Durban	207	36 (42.4) 49 (57.7)	71 (58.2) 51 (41.8)	**0.025**
Age 16−18 19−21 22−24	207	15 (17.7) 53 (62.4) 17 (20.0)	19 (15.6) 81 (66.4) 22 (18.0)	0.835
Adolescent at baseline Yes (20−24 years) No (16−19 years)	207	48 (56.7) 37 (43.5)	61 (50.0) 61 (50.0)	0.359
Sexual orientation Lesbian, bisexual Straight	207	10 (11.8) 75 (88.2)	6 (4.9) 116 (95.1)	0.07
Current learner/student No Yes	206	31 (36.9) 53 (63.1)	39 (32.0) 83 (68.0)	0.462
Any household hunger No Yes	207	63 (74.1) 22 (25.9)	91 (74.6) 31 (25.4)	0.939
Relationship length Not in a relationship Less than two years 2 years or more	207	7 (8.2) 43 (50.6) 35 (41.2)	6 (4.9) 57 (46.7) 59 (48.4)	0.449

Factor	Total	No effective use n = 85 n(%)	Effective use n = 122 n(%)	P-Value
Formal housing No Yes	207	27 (31.8) 58 (68.2)	42 (34.4) 80 (65.6)	0.689
Income category <400 401–1600 1601+	207	16 (18.8) 54 (63.5) 15 (17.7)	28 (23.0) 63 (51.6) 31 (25.4)	0.222
Perceived HIV risk Low/no risk Medium/High risk	202	46 (57.5) 34 (42.5)	63 (51.6) 59 (48.4)	0.414
Two or more partners in the last 6 months No Yes	205	46 (79.8) 17 (20.2)	94 (77.7) 27 (22.3)	0.722
Age-disparate (5 years older) No Yes	194	46 (59.0) 32 (41.0)	73 (63.0) 43 (37.0)	0.579
Transactional sex ever No Yes	207	80 (94.1) 5 (5.9)	112 (91.8) 10 (8.2)	0.527
Partner violence No Yes	206	71 (83.5) 14 (16.5)	99 (81.8) 22 (18.2)	0.750
Ever been forced to have sex? No Yes	206	76 (89.4) 9 (10.6)	108 (89.3) 13 (10.7)	0.972

Factor	Total	No effective use n = 85 n(%)	Effective use n = 122 n(%)	P-Value
Binge drinking	207	29 (34.1)	31 (25.4)	0.350
Did not drink		21 (24.7)	38 (31.2)	
No		35 (41.2)	53 (43.4)	
Yes				
Pregnancy group	207	58 (68.2)	51 (41.8)	0.001
Never been pregnant		9 (10.6)	18 (14.8)	
Pregnancy 15–19 years		18 (21.2)	53 (43.4)	
Pregnancy 20–24 years				

Table 4
Adjusted logistic regression model examining the association between adolescent pregnancy and effective contraception use (n = 207)

	Effective Contraception use
	Adjusted odds ratio (AOR) 95%CI
Main Exposure	
Pregnancy History	Ref
Never Pregnant	2.13 (0.85–5.32)
Pregnancy 20–24 years	**3.45 (1.75–6.82)**
Pregnancy 15–19 years	
Potential Confounders	
Site	Ref
Soweto	0.61 (0.33–1.12)
Durban	
Sexual Orientation	Ref
Lesbian, Gay, Bisexual	0.35 (0.11–1.07)
Straight	
Income	Ref
<400	0.51 (0.23–1.09)
401–1600	0.88 (0.34–2.28)
1601+	

Discussion

(a)Findings and interpretation:-

We found that among a cohort of adolescent and female youth who had initiated sexual activity in two HIV hyper-endemic settings in SA, over one-third reported having had an adolescent pregnancy of which almost all first pregnancies (> 95%) were unplanned. A large proportion of females aged 16–19 who had never been pregnant and those who had had an adolescent pregnancy at the time of interview, were not using effective contraception, indicating that they continue to be at risk of pregnancy. We also found that 53.2% of females who had never been pregnant but had initiated sexual activity were using ineffective or no contraception methods at baseline, highlighting a high risk of becoming pregnant.

Our results indicated that the main way in which young females have learned about contraception was through a nurse, doctor, or counselor, and this was much more likely among female participants who have been pregnant. Given that 66% of females in our study were currently enrolled in education at the time of interview, only 9% reported learning about contraception in school, which highlights the potential lack of comprehensive sexual education young women in SA are receiving. Few female participants mentioned adult family members as sources of information and this may point to continued taboos of discussion of issues related to sex and contraception with adult family members (Govender, Naidoo and Taylor 2020).[5] MacPhail et al (2007)[8] found some evidence that adolescents aged 15–24 reporting they had a parent or guardian at home who they could discuss sex with, were more likely to use contraception. Poor contraceptive knowledge leading to risk of adolescent pregnancy is in agreement with studies in SA that suggest a lack of contraceptive use rather than contraceptive failure as the primary factor in adolescent pregnancy (Mphatswe, Maise and Sebitloane 2016; Vollmer and van der Spuy 2016).[13–14] For instance, in a prospective observational study of 341 adolescents aged 13–19 years who were currently pregnant, recently delivered, or had terminated a pregnancy, only 17% had previously used contraception. Of these, almost all (93.1%) stopped using contraception within 12 months of initiation (Mphatswe, Maise and Sebitloane 2016).[14]

Our results further highlight that adolescent females may be accessing and learning about contraception only after becoming pregnant, highlighting significant gaps in the current ways in which contraception education is delivered and contraception methods are made available. Although SA has an extensive primary health care network of facilities that can be utilized by adolescents for contraceptive services, many are not open outside of the hours young people would be attending school or further education. To date there have been numerous attempts at implementing targeted adolescent and youth friendly services (AYFS), however no differences have been found that support higher quality of care in AYFS when compared to facilities not implementing specific AYFS services in SA (Geary, Webb, Clarke and Norris 2015; James, Pisa, Imrie, Beery, Martin, Skosana et al. 2018; Mathews, Guttmacher, Flisher, Mtshizana, Nelson, McCarthy et al. 2009).[15–17] A study which explored adolescent preferences for a sexual health service in SA indicated that youth wanted tailored services targeted at their developmental stage (MacPhail, Pettifor, Pascoe and Rees 2007).[8] However, in this study youth emphasized the need to be able to trust staff alongside a confidential youth friendly service. This seems to have been the most difficult component to implement effectively in previous interventions (Smith, Marcus, Bennie, Nkala, Nchabeleng, Latka et al. 2018).[18]

(b) Strengths and weaknesses of the study

A strength of our data is that we have been able to accurately compare within the same population differences in contraceptive use and other characteristics between those who have had a pregnancy and those who have never been pregnant. The cross-sectional nature of the data presented herein does not allow for us to determine direction of effect. Furthermore, the community-based recruitment strategy used within two urban settings, may have limited the ability for the results from this study to be generalized to all adolescent and young females in SA, however the data is representative of the provinces and national reported in the most recent SADHS (2016).[2]

(c) Differences in results and conclusions in relation to other studies

Our data show that that contraceptive prevalence is higher in those who had ever been pregnant, and this is in agreement with other SA studies that have found a similar relationship (Galappaththi-Arachchige, Zulu, Kleppa, Lillebo, Qvigstad, Ndhlovu et al. 2018; MacPhail, Pettifor, Pascoe and Rees 2007; Peer, Morojele and London 2013).[8,19–20] It is difficult to compare our data with other African countries due to the widely differing in contraceptive prevalence overall, and the use of contraceptives by unmarried adolescents (United Nations 2019).[3] SA has one of the highest rates of unintended pregnancies in Africa outside of marriage (Timaeus and Moultrie 2015),[21] with only 12%-36% of women (depending on province) aged 20–45 years reporting being married (Posel, Casale and Rudwick 2011).[22] Our study has additionally been able to demonstrate an independent association between adolescent pregnancy and contraceptive use.

(d) Relevance of the findings: implications for clinicians and policymakers.

The continued high rate of adolescent pregnancy found within our study points to the urgency to address the unmet need for contraception in this age group. In 2015, one of the top ten risk factors for morbidity and mortality among SA adolescents was identified as adolescent pregnancy (Jonas, Ramraj, Goga, Bhana and Mathews 2019).[23] These female participants should predominantly still be in full time high school education, and although policies are in place to protect and support pregnant learners to continue their schooling during and after pregnancy, many do not return to school for reasons including secrecy, stigma and shame (Ngabaza and Shefer 2013).[24] The National Policy on the Prevention and Management of Learner Pregnancy in Schools (Department of Basic Education 2018)[25] is in preparation to address the problem of adolescent pregnancy. It acknowledges that learner pregnancy compromises the planned elimination of gender disparities in education with implications for the Sustainable Development Goals (SDGs) of universal primary education and gender equality in education. Our data show the urgent need for these Department of Basic Education (DBE) to implement programmes and policies to reduce the number of adolescent pregnancies.

A Cochrane review of interventions for preventing unintended pregnancies among adolescents (Oringanje, Meremikwu, Eko, Esu, Meremikwu and Ehiri 2016)[26] was recently reviewed for implications for practice relevant for SA.[26] Davids, Kredo and Mathews (2019) [27] suggested that although SA schools are appropriate platforms for SRH demand generation, they may not be well placed to address the SRH challenges of adolescents and that structural constraints in accessing contraception need to be addressed. One study that looked at the feasibility of provision of a school based on site contraceptive clinic (Khoza, Zulu and Shung-King 2019)[28] found that there was support from learners, parents and the school principal, however concerns were raised related to confidentiality, increased risk of promiscuity and side effects related to the contraceptive methods.

A recently published policy - The DBE National Policy On HIV, STIs and TB- for learners, educators, school support staff and officials in primary and secondary schools in SA (DBE 2017)[29] highlights that adolescents above the age of 12 can have access to contraceptives and HIV testing without the need for parental approval. The policy states that every person of reproductive age should have such access to services and recognizes that adolescents may be sexually active at a very young age. This policy specifically mentions the need for male and female condoms to be available in schools. However, although SA policies allow for access of SRH services in schools, they have not been made widely available to date, and most schools only offer limited SRH education (Jonas, Ramraj, Goga, Bhana and Mathews 2019).[23] Further, as our results show significant differences in contraception use between the two study sites, thus access to SRH services likely varies by province.

Our data show that there were a significant number of sexually active adolescent females in our study at high risk of becoming pregnant given their contraception use patterns. These young women were appropriately counseled and referred for services if they wished to access contraception. Using a strong youth-centred, community-based approach, our findings add to the limited available evidence on the important public health challenges of unmet contraceptive needs and adolescent pregnancy among young SA women. These results are in line with data from the SADHS 2016 which found that sexually active unmarried women aged 15–19 have an unmet need for contraception of 32.2%, twice as high as women aged 25–29 (16.9%). Given that pregnancy among adolescent females was associated with higher likelihood of effective contraception use, which is counter intuitive, it is likely that adolescent females are only using contraception effectively after they have already been pregnant.

(e) Unanswered questions and future research

The current SADHS indicator on first use of contraception only focuses on married women with the following indicators: Percent distribution of ever-married women by number of living children at time of first use of contraception, according to current age, and among ever-married women the median number of children at time of first use of contraception, according to current age. Given the high rates of pregnancy in adolescents and unmarried adolescent females in SA, as well as low levels of contraception use, it would be important to expand those indicators and collect data on unmarried woman of all ages. Moreover, as our results point to the potential disparities in contraception uptake by study site, future nationally representative studies should include questions relating to contraception knowledge and uptake among young women by province.

Conclusion

Results from this study add to a growing body of literature highlighting the low use of any contraception prior to an adolescent pregnancy in SA. We provide further evidence for the critical need to support adolescent and youth friendly SRH services at a young age, in order to prevent the high sustained incidence of unintended adolescent pregnancy.

Declarations

Ethics approval and consent to participate

All participants aged 18-24 years provided voluntary informed consent at enrollment. For participants aged 16-17 years, parents/legal guardians provided voluntary informed consent and the participant provided voluntary

assent. Ethical approval was provided by the Research Ethics Board of Simon Fraser University, (2013S0114) the Human Research Ethics Committee (HREC) at the University of the Witwatersrand (M140707), and the Biomedical Research Ethics Committee at the University of KwaZulu-Natal granted reciprocity to the University of Witwatersrand HREC

Consent for publication

Not applicable

Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available due to the project continuing with various post research project activities with participants but are available from the corresponding author on reasonable request.

Competing interests

The authors report no competing interests

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Authors' contributions

MB, KC, JS, JD, MB TN, GG, AK, PS, SH ontributed to the design and implementation of the research study, KC, MB, JS, AK to the analysis of the results, MB, KC, JS, JD, MB TN, GG, AK, PS, SH, MN interpreted the results and

contributed to the writing of the manuscript. All authors reviewed and approved the final version submitted.

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