TOPIC: SOCIO-ECONOMIC FACTORS CONTRIBUTING TO PREGNANCY PREVENTION METHODS AMONG ADOLESCENT GIRLS IN MANGAUNG

By

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DECLARATION

I, Moriam Oluwakemi Adeleke, declare that the Master's Degree research publishable manuscripts/published articles, that I herewith submit for the Master's Degree qualification in Development Studies at the University of the Free State is my independent work, and that I have not previously submitted it for a qualification at another institution of higher education.

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DEDICATION

This work is dedicated to my mom, whom I spent short time with but whose picture and lessons are engraved in my heart. To my Dad for his unconditional support through the years and to God Almighty for this opportunity, in whom I live and have my being.

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Abstract

Background: In South Africa, adolescent girls continue to become pregnant at an unacceptably high rate. While the fertility rate is high, the rate of contraception use remains low, consequently resulting in perpetuating the cycle of poverty. The objective of the study is to assess the socio-economic factors associated with the different forms of contraceptive use and perceptions among adolescent girls.

Methods: The study uses a secondary dataset with a sample of 300 respondents. Descriptive statistics, chi-square test, and logistic regression are used to examine the association between socioeconomic variables and the acceptability of pregnancy prevention methods.

Result: Only two study variables had a significant correlation with pregnancy prevention methods; share of persons employed and the number of assets. Share of persons employed had a statistically significant ($p=0.013$ and $p=0.027$) weak, negative correlation ($r=-1.43$ and $r=-1.28$) with the use of a needle and withdrawal. The share of persons employed and the number of assets also showed a statically significant ($p=0.027$ and $p=0.009$) weak, negative correlation ($r=-.128$ and $r=-.151$) with withdrawal.

The results further show a limited number of significant relationships. In the case of contraceptive injection, the requirements were not met for the Pearson chi-square, but the gamma and Kendall's tau-b both indicated a statistically significant ($p=0.024$ each) weak, negative correlation (gamma=-0.181 and tau-b=-0.134), indicating that higher education for the mother reduced the acceptability of contraceptive injection. In the case of condoms, the Pearson chi-square suggests a statistically significant difference, at $p<0.05$ (chi square=9.903, $p=0.042$). The gamma and Kendall's tau-b showed a statistically significant (though only at $p<0.1$; $p=0.062$ each) weak, correlation (gamma=0.109 and tau-b=0.239), indicating that higher education reduced the acceptability of condoms.

Conclusion: The findings from the study revealed that there is a minimal association of socio-economic factors with the use and choice of contraception. Initiatives that seek to improve the use of contraceptives among adolescents in South Africa must consider attitude, cultural, and religious factors.

Introduction

There has been an increased effort from the global community to provide contraception services to millions of adolescent girls (Hounton *et al*., 2015). This emphasis on contraceptives has contributed to the decline in global adolescent birth rate, from 65 births per 1000 women in 1990 to 47 births per 1000 in 2015 (WHO, 2018). Despite this progress, projections estimate an increase in the number of adolescent pregnancies globally by 2030, with the most significant proportion of the increase in Africa (Franjic, 2018). Approximately 16 million adolescents give birth each year in developing countries. Adolescent pregnancies result in adverse health effects for mothers and children as well as unsafe abortions, often leading to maternal deaths (Monjok *et al*., 2010; Franjic, 2018; Mori *et al*., 2017). Around the world, adolescent pregnancies are more likely to occur in marginalised communities characterised by poverty, a lack of education, and limited employment opportunities (Franjic, 2018). These socio-economic factors influence both the choice and use of contraception, the rate of unintended pregnancies, and the decision to terminate an unwanted pregnancy (Metcalfe, 2016). However, these factors are interrelated, complex, and vary from one society to another (Palamuleni, 2013).

The pregnancy rates of adolescent girls remain high in South Africa (Jonas *et al*., 2016). In 2012, 31.5 per cent of adolescents reported being pregnant or having been pregnant (Jones *et al*., 2016). Adolescent pregnancy is a risk factor for sexually transmitted diseases and the result of inconsistent use of contraception (Kanku, 2015; Jonas *et al*., 2016). Unsafe sex is frequent among South African adolescents and contributes to an additional economic burden on low-income families and a range of social consequences (Vundule *et al*., 2001; Kanku 2015; Jonas *et al*., 2016; Mkhwanazi, 2010). Despite the government's efforts to provide free contraceptive services, the proportion of adolescents exposed to the risk of pregnancy remains high.

Existing research shows that higher socioeconomic status correlates with more extensive use of contraceptives amongst women (Aremu, 2013; Agyemang *et al*., 2018). The paper assesses the socio-economic factors associated with perceptions about contraceptives and the use of contraceptives among adolescent girls in Mangaung, South Africa. The research results do not show the same relationships between socio-economic status and contraceptive use. The paper discusses the reasons for the absence of these relationships.

Literature Review

Pregnancy prevention

Pregnancy prevention is the foundation of safe motherhood and the United Nations named it as a human right (Shah *et al.*, 2011). Pregnancy prevention remains one of the most cost-effective public health tool as it enables women to make choices about their fertility. In turn, pregnancy prevention offers better economic and social opportunities for women and their children (Department of Health, Republic of South Africa, 2012). The contraception choices for adolescents affects their health, education, and transition to adulthood (Tsikouras *et al*., 2017). Access to contraception is essential in preventing unintended pregnancy.

However, the availability of contraceptives does not guarantee the use of contraceptives. The United Nations (2015) estimates the global contraceptive prevalence at 57 per cent - 64 per cent. Among developing countries, contraceptive prevalence is the lowest, in sub-Saharan Africa, it is at 25 per cent (United Nations, 2015). Contraceptive use in Nigeria stands at low and stagnating 10 per cent (Schwandt *et al.*, 2016). In Kenya, modern contraceptive methods among women aged 15-19 years old rose from 5 per cent in 2008, to 9.3 per cent in 2014, and 18.3 per cent in 2018 (Ochako *et al*., 2015; Kenya Demographic and Health Survey, 2008 & 2014). A recent study in Ghana shows that of adolescents aged 15-19, 14.6 per cent used a modern method and 3.7 per cent a traditional way (Nyarko, 2015). Research also indicates progress in Ethiopia (Hounton *et al*., 2015).

In South Africa, approximately 30 per cent of 15-19-year-olds have reported that they have been pregnant (Madlala *et al.*, 2018). Hoopes *et al*. (2015) show that South African adolescents aged 15-19 have a birth rate of 54 per 1,000 women. In 2013 alone, unplanned pregnancies amongst adolescents exceeded 99,000 (Hlongwa *et al.*, 2018). The use of contraceptives remains low, at about 25 per cent (Bafana, 2010; Wood *et al.*, 2009). The aforementioned ratio is twice that of their counterparts in the United States. Among female high school students, 6 per cent report having had an abortion and one in ten report that someone forced them to have sex (Hoopes *et al*., 2015). A study in the North West found that the understanding of contraceptives was poor among teenage girls, with condom been the most known contraceptive method (Kanku, 2010).

Contraceptive services are free in South Africa (South Africa, Department of Health, 2012). Adolescents may access contraceptive methods without parental consent at the age of 12 (Hoopes *et al.*, 2015). The South African National Youth Behavior Risk survey in 2008 showed that the most commonly used contraceptive among adolescents was condoms (Department of Health, South Africa, 2012). Only 7 per cent used injectable contraceptives and 4.2 per cent used oral contraceptives (Department of Health, South Africa, 2012). Chersich *et al*. (2017) reported lower levels of knowledge for 15-19-year-old girls than for older women for each contraceptive method. Male condoms are the most used contraceptives among young South Africans, at 57.6 per cent (Seutlwadi *et al.*, 2012). This relatively high usage is the result of the ease involved in getting condoms, partner communication, education, and employment (Seutlwadi *et al.*, 2012). Research shows that 95 per cent of respondents knew about condoms, the pill was the second most known at 88 per cent, and 76 per cent knew about injectable contraception (De Klerk, 2011). The least known was the morning after tablets, intrauterine devices, and contraceptive patch (De Klerk, 2011). However, contraceptive use remains uneven. The most frequent reasons for using contraception were instructions from parents, peer pressure, and the media (De Klerk, 2011). Other causes include avoiding pregnancy, avoiding infections, and protecting oneself. The most frequent reason for not using contraception while being sexually active was sensation loss with condoms, followed by contraceptives being challenging to access and pressure from a partner (De Klerk, 2011).

The limited use of contraceptives has adverse consequences. Between 2 and 4.4 million adolescent girls in developing countries undergo unsafe abortions annually (WHO, 2011). However, early childbirths are the second leading cause of death among adolescents girls aged 15-19 years old in low and middle-income countries, and it is the fourth cause of death of this age group globally (Mori *et al*., 2017).

Socio-economic factors contributing to pregnancy prevention methods among adolescent girls

Research shows that socioeconomic factors, such as education level, age, place of residence, wealth index, and work status of the woman, influences both choice and use of contraception (Palamuleni, 2013; Mandawa *et al*., 2018; Nakirijja and Kayiso, 2018).

Higher levels of education lead to higher contraceptive use. A Malawian study shows that adolescent women who had attained primary education had higher contraceptive use than their uneducated counterparts (Mandiwa *et al.*, 2018). Research also points to a relationship between educational level and the method of contraception (Kahraman *et al*., 2012). Women with higher education use condoms, IUDs, and coitus interruptus less and prefer oral contraception and tubal sterilisation (Sensoy *et al*., 2017). South African women with higher education levels are more likely to use contraceptives (South African Department of Health, 2005; Rossouw *et al.*, 2012). Two studies found conflicting results. A study in Ghana found no significant association between educational level and contraceptive use (Agyemang *et al*., 2018). Another study found that the interaction between educational status and condom use was not significant (Chimbindi *et al*., 2010).

The urban-rural difference in the adoption and choice of contraception is highest in sub-Saharan Africa where the rate of contraception use is twice as high among urban residents compared to that among rural residents (Onipede *et al.*, 2012, Palamuleni, 2013; Hounton *et al*., 2015; Nyarko, 2015). This difference results from better access to services such as education, health, information, and family planning in urban areas (Palamuleni, 2013; Sensoy *et al*., 2018). In South Africa, young women who reside in the urban area display a more significant knowledge of contraceptive use and are more likely to use modern contraceptives than the young women in rural areas (Naidoo, 2005; Netshikweta, 2007; Peer and Morojele, 2013). Naidoo (2005) further emphasises that geographic location is the most significant variable that influences contraceptive use among adolescents in South Africa. The main reasons include differences in access to reproductive health facilities, cultural beliefs, and living situations. Furthermore, rural residents find it challenging to travel to clinics (Netshikweta, 2007).

Research shows a link between household wealth and contraceptive use. Low-income families find affording contraceptives or seeking reproductive health services difficult (Onipede *et al*., 2014; Subedi *et al.,* 2018; Wado *et al*., 2019).). Onipede *et al.* (2014) find that the relationship between a wealth index and contraceptive use is statistically significant. A study in 12 developing countries showed that young women in low-income households were less likely to enrol in school, use modern contraception methods, and more likely to get married at age 18 and give birth by age 18 (Rani and Lule, 2004). Adolescents in the lowest quintile household were significantly less likely

than those in the wealthiest quartile to gather in public places such as schools or youth centres and report regular media exposure (Rani and Lule, 2004). South Africa reduced the potential financial barrier to contraception by removing the cost of accessing contraceptives (Hoopes *et al*., 2015). Despite this policy initiative, Chersich *et al.* (2017) found access to contraceptives was higher in wealthy districts. Kanku (2010) found that those who are poor have a higher chance of falling pregnant (Kanku, 2010). Some studies show that falling pregnant is a way of securing income (Kanku, 2010) while other studies show that transport costs to clinics to access contraceptives is an essential barrier to contraceptive use in South Africa (Netshikweta, 2007).

Several studies have reported that white women are more likely to use contraception compared to black women (Rocca and Harper, 2012; Hoopes *et al*., 2016; Chersich *et al*., 2017). Studies show that contraceptive use by black women is inconsistent, which often results in contraceptive failure (Rocca and Harper, 2012). In the United States, black young women and Latinas were more likely than white women to use hormonal methods and more likely to rely on no method or condoms (Rocca and Harper, 2012). Latinas are most likely to believe that birth control is a strategy to limit the minority population by using them as guinea pigs to test these methods rather than white women (Rocca and Harper, 2012). South Africa's history of racial discrimination, accompanied by gross inequalities in access to education, economic opportunities, and health services explains some differences mirrored in the similar experiences of disenfranchised or marginalised racial groups (Peer, 2013). Chersich *et al*. (2017) in their study, noted a strong association with race in contraception use and method type in South Africa (see also Burgard, 2004; Naidoo, 2005). Contraception was lower in black, young women who used a limited range of methods.

Table 1: Overview of contraceptive methods

Method	Traditional / or Modern	Mechanism of action	Effectiveness at Preventing Pregnancy	Side effects/comments	Literature about socio-economic factors
Coitus Interruptus or Withdrawal	Traditional Method	It involves the withdrawal of the penis from the vagina before ejaculation	High failure rate. It is not a reliable method and may fail if semen escapes before ejaculation	Free of side effects	Low levels of education, partner's disapproval of modern contraceptives, infrequent sex, religious beliefs, desire to have more children, lack of access among women in the rural area and fear of side effects of the modern methods are reasons for the use of traditional methods. (Ajayi *et al.*, 2018; Marquez *et al.*, 2017).
Lactational Amenorrhoea Method	Traditional Method	Secret hormones that prevent conception during breastfeeding	High failure rate. It is not reliable and more of a myth as breastfeeding is irregular	Free of side effects	
Rhythm or calendar Method	Traditional Method	Predicting fertile day and avoiding intercourse on productive days	High failure rate. It is not reliable as only a small proportion can identify the fertile period of the month.	Free of side effects	
Male Condom	Modern Method	Thin rubber is rolled on the erect penis before intercourse and prevents semen from entering the woman	It is 95% effective if used correctly. It is readily available without **a** prescription. It is the most effective method in providing twin protection of contraception and STIs	Free of side effects but may fail due to leaks, tears or slippage during intercourse	Condom use is limited because of its association with disease and promiscuity together with greater male control. It is a preferred choice and accessible for young people (De Clark, 2011; Williamson *et al*., 2009) and it is accessible by all age groups (Jain and Muralidhar, 2012). Cost of purchase may be a barrier in some instances (Abdul-Rahman *et al.*, 2011).
Female condoms	Modern Method	A vaginal pouch with one ring at the end is inserted into the vagina to prevent semen from entering into the woman	It is about 79% effective if used correctly. The failure rate is high, at 12% per year.	Free of side effects but must be correctly and consistently used	There is low utilisation of this method among all groups. Challenges highlighted are the physical size, shape, and timing of insertion. The acceptability and use of this method involves complex factors such as women's decision, power in a relationship, knowledge, availability, and intense promotion of this method (Mokgetse *et al.*, 2018)
Oral contraceptive pills	Modern Method	By taking the pills, it prevents the release of the egg, thickening of cervical mucus, and altering tubal motility	It is almost 100% effective. 0.1-0.3 pregnancies/100 women in the first year of use.	Weight gain and acne are minor side effects. Significant side effects are Venous thrombosis (clotting of the vein). It is a woman controlled method and does not interfere with lovemaking.	Adolescents are less likely to use this method because it requires it to be taken timely, correctly, and consistently **(**Jain and Muralidhar, 2012). Cost and continuous access relating to frequent visits to the clinic are a significant barrier to the use of this method.

Method	Traditional / or Modern	Mechanism of action	Effectiveness at Preventing Pregnancy	Side effects/comments	Literature about socio-economic factors
					Besides, studies show that this method may have higher continuation rate and a reduction in the barrier to using if it can be obtained over the counter rather than by prescription (Kennedy *et al*., 2019).
Injectables	Modern Method	It stops ovulation and increases the viscosity of cervical secretions to form a barrier to sperms.	Almost 99% effective. 0.3pregnancies/100 women in the first year of use. The effect is equal to female sterilisation	Menstrual irregularities, weight gain, and a return to fertility may take time after discontinuation. Counselling and support are needed for women when this method is chosen	This method has limited acceptability among young and low parity women (Veisi and Zangenehi, 2013). Age, marital status, and the number of children are factors affecting use.
Intrauterine Device	Modern Method	A flexible plastic device usually with copper inserted into the womb to prevent a fertilised egg from settling in the womb.	98% effective. 0.1 pregnancies/100	It may cause heavy bleeding, increases the risk of ectopic pregnancy, and gives the feeling of a foreign object in the body. It has a reasonable compliance rate.	Adolescents are less likely to use this method, despite its efficacy in curbing unintended pregnancies. Factors for non-use are a lack of knowledge by both adolescents and health care providers, marital status, and the number of children (Smith, 2015).
Implants	Modern Method	A Norplant capsule inserted below the skin. It suppresses ovulation and creates thick cervical mucus which prevents sperm from entering the cervix.	0.1 pregnancies/100 women in the first year of use	Menstrual irregularities. Fertility is restored in 2-4 months after removal. It is a long term contraceptive method. Visits to the clinic necessary are only 2 to 3 times a year for a periodic checkup.	It is referred to as a Long-Acting reversible method (LARC). Women usually access this method in an urban area by trained health personnel. Women with low social and economic status are not able to afford it. Lack of access, unavailability at a health facility at the time of removal, cost of replacement, lack of knowledge and fear of infertility are reasons for non-use (Monjok *et al*., 2010; Williamson *et al.*, 2009). For young women, preserving future fertility is essential; condoms and other traditional methods that do not threaten productivity are relied on.
Emergency contraceptive pills	Modern Method	Taken within three days of unprotected intercourse to prevent ovulation, fertilisation or implantation of the fertilised egg.	Reduces the risk of pregnancy by 85% when administered correctly	Minimal side effects. Some women experience nausea, vomiting. It is available without prescription	The driver for this method is inconsistent use of contraception and tear of a condom. Level of Education, fear of future infertility, experiences of friends, and other family members, cost of purchase, religious beliefs and limited knowledge are barriers to the use of this method (Kunene, 2013)
Female sterilisation	Modern method	Fallopian tubes are cut and the ends are tied to prevent the sperm from meeting the eggs	It is permanent occlusion if the fallopian tubes are correctly occluded	Minimal side effects of surgical procedure only, e.g. bleeding and surgical infection.	Age and having the desired number of children are associated with the use of this permanent method (Ruiz-Munoz and Perez; 2012)

Study Methods

Study site and participants

The paper uses secondary data from a project titled, **"**Family Planning Needs of Sesotho Speaking Girls in South Africa". The project uses cultural consensus modelling as a research method. Geographically, the project focused on and recruited participants from the former black township of Bloemfontein, Mangaung. Under apartheid rule, the government settled different race groups in different suburbs using the Group Areas Act[1]. In 1991, the government repealed the Group Areas Act. Repealing the Group Areas Act meant that black people were now able to settle anywhere in the city. Bloemfontein's former white suburbs are desegregating slowly (Marais *et al*., 2020). However, the poor and lower-middle-class do not have the financial means to settle in the former white areas. Consequently, the Manguang township has lost a large percentage of higher-income households and the spread of household wealth is much more restricted to those who cannot afford to desegregate. In addition, this situation indicates limited access to social services and opportunities.

In line with the cultural consensus modelling, the project has four phases. Phase 1 has 50 participants who responded to demographic questions and completed a two free listing survey assessing pregnancy and STI/HIV methods used by adolescents. In phase 2, 100 participants completed a rating survey to examine the perceived acceptability of Phase 1 pregnancy and STI prevention methods by peers and whether distinct cultural models existed. Phase 3 was an individual qualitative interview with 25 participants. This paper uses information from Phase 4 of the project. In Phase, 4, 300 participants completed a survey focusing on their beliefs regarding the acceptability of pregnancy methods and the factors influencing the selected method of prevention. The researchers also include a range of socio-economic indicators reflecting on the socioeconomic status of the households of the participants.

Participants

Participants were Sesotho speaking African adolescent girls recruited by Sesotho speaking research staff via community-based outreach. Eligibility for all 4 phases included being; (a)

[1] Under the Population Registration Act South Africans were classified as Africa, Coloured, Indian or White.

female; (b) between the ages of 14 and 17; (c) Sesotho-speaking; and (d) a resident in Mangaung township. Since participants were all under age 18, written parental consent and written youth assent were obtained for all participants. The research team recruited the participants using a recruitment pamphlet and participants received a stipend of R100 for their participation.

Statistical Analysis

Statistical analysis was done in SPSS.

Results

This section discusses three main sets of data: descriptive statistics, a collection of data associated with continuous variables, and categorical data.

Descriptive statistics

Table 2 outlines the responses concerning the acceptability of the eight ways of preventing pregnancy.

Table 2: Acceptability of pregnancy prevention methods

List of pregnancy prevention methods	Very Unacceptable		Somewhat unacceptable		Neither Acceptable nor unacceptable		Somewhat acceptable		Very Acceptable	
"How acceptable to you is…to prevent pregnancy?**"**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Using a pregnancy prevention needle (Depo Provera, Nustrate)	56	18.7	35	11.7	61	20.3	33	11.0	115	38.3
Using contraceptive pills	81	27.0	40	13.3	54	18.0	32	10.7	93	31.0
Abstaining from sex	81	27.0	36	12.0	85	28.3	22	7.3	76	25.3
Asing condoms	46	15.3	36	12.0	26	8.7	20	6.7	172	57.3
Asing the IUD loop (a device placed in your vagina to prevent pregnancy)	59	19.7	33	11.0	72	24.0	35	11.7	101	33.7
Getting an implant (a device placed under the skin in your arm to prevent pregnancy for three years) to prevent pregnancy	67	22.3	40	13.3	84	28.0	34	11.3	75	25.0
Using withdrawal (or when the boy pulls out before sperm comes out) to prevent pregnancy	107	35.7	25	8.3	105	35.0	20	6.7	43	14.3
Taking the morning after-pill (using pills after sex to not get pregnant) to prevent pregnancy	56	18.7	32	10.7	90	30.0	39	13.0	83	27.7

The results show that, of all modern methods, the one with the highest rate of acceptability is condoms, which are very acceptable among 57.3 per cent of participants. The percentage of participants that agree that the pregnancy prevention needle (Depo Povera Nustrate) is highly acceptable is 38.3 per cent, compared to the contraceptive pills, which are at 31 per cent. In the case of the IUD loop, 33.7 per cent indicate that it is very acceptable, while only 19.7 per cent show that is very unacceptable. The data shows that the implant is very acceptable only among 25 per cent of participants, while 28 per cent find it neither unacceptable nor acceptable. Only 27.7 per cent agree that the morning after pills are very acceptable, while 30 per cent perceive that they are neither acceptable nor unacceptable.

Participants overall acceptability of traditional methods, which includes abstinence and withdrawal, is relatively low**.** While 14.3 per cent agree that the withdrawal method is very acceptable, 35.7 per cent indicate that it is very unacceptable. When asked if abstaining from sex is an acceptable method, 25 per cent agree that it is very acceptable while 27 per cent report that it is very unacceptable.

Concerning the demographics, the mean age of the participants was 15.39. The majority of the participants were African (95.3%, n=286). The rest included the coloured race (3.3%), and 1.3 per cent are Indian, white, or others. Just over 90 per cent of the participants spoke Sesotho (91.0%, n=273) as their home language, with the least language spoken being IsiZulu (0.3%) and Sepedi (0.3%). Although the criteria for participation were Sotho as a home language, in practice it was more challenging to achieve a 100 per cent Sesotho home language ratio (the fieldworkers completed all questionnaires in Sesotho). Out of the total participants, 6 per cent (n=19) had no education, 31 per cent (n= 92) had primary education, 61 per cent (n=222) had some high school education, while 1 per cent had post-high school education. The majority (88%) attended public-owned schools, with 6.3 per cent in private schools (a range of low-fee private schools exist).

Approximately 31 per cent of respondents did not know the highest level of education of their mother, but 8.3 per cent (n=25) responded that their mother had no school education, 9.7 per cent had primary education, 23 per cent had some secondary education, while 25 per cent completed grade 12, and 2.7 per cent completed post-secondary education. Most of the participants indicated that only their mother was present (68.7%, n=206), 31.3 per cent reported that only their father

was present, 27.3 per cent indicated that their grandmother was present, 4.0 per cent indicated their grandfather was present, and 13.3 per cent have other adult relatives present, while 0.7 per cent of participants had no adult present.

About half of the participants (50.3 per cent) live in a brick structure house, 17.6 per cent live in an informal house, while only 1.7 per cent live in an apartment in a block of flats, 8.7 per cent live in houses made with traditional materials, 5 per cent live in town semidetached houses, 3 per cent live in backhouses, rooms/flatlet, and retirement units, while 13.7 per cent lived in another type of home. Only 15 per cent had access to private medical aid schemes while 84.7 per cent were dependent on the public sector.

More than half of the participants said that someone in their household receives a government grant at 55.3 per cent (n=166). About 84 per cent of participants indicated that no one in their household had received any wages or payment at the time of the study indicating that they were unemployed . In terms of household possessions, which include automobiles, televisions, radios, cellphones, and other home accessories, the majority of participants (92 per cent) owned a television, while only 25 per cent owned a motor vehicle.

Continuous variables

Table 3 provides the correlations between continuous socio-economic variables and the acceptability of different pregnancy prevention methods and socio-economic variables; the number of adults with a paying job, the share of persons employed, housing density, and the number of assets. The results show a limited number of statistically significant correlations.

Table 3: Correlated of Pregnancy Prevention Methods

Method	Statistical method	Number of adults with a paid job, excluding self	Share of persons employed	Density: persons per room	Number of assets (score/15)
How acceptable to you is using a pregnancy prevention needle (Depo Provera, Nustrate) to prevent pregnancy?	Correlation Coefficient	-0.104	-.143*	0.001	-0.033
	Sig. (2-tailed)	0.072	0.013**	0.990	0.566
	N	300	300	296	300
How acceptable to you is using contraceptive pills to prevent pregnancy?	Correlation Coefficient	-0.075	-0.090	0.039	0.018
	Sig. (2-tailed)	0.196	0.121	0.499	0.752
	N	300	300	296	300

Method	Statistical method	Number of adults with a paid job, excluding self	Share of persons employed	Density: persons per room	Number of assets (score/15)
How acceptable to you is abstaining from sex to prevent pregnancy?	Correlation Coefficient	-0.036	0.002	0.095	0.034
	Sig. (2-tailed)	0.529	0.966	0.102	0.557
	N	300	300	296	300
How acceptable to you is using condoms to prevent pregnancy?	Correlation Coefficient	-0.050	-0.088	0.000	0.011
	Sig. (2-tailed)	0.385	0.129	0.997	0.856
	N	300	300	296	300
How acceptable to you is using the IUD loop (a device placed in your vagina to prevent pregnancy) to prevent pregnancy?	Correlation Coefficient	0.007	-0.025	-0.021	-0.028
	Sig. (2-tailed)	0.910	0.662	0.713	0.624
	N	300	300	296	300
How acceptable to you is getting an implant (a device placed under the skin in your arm to prevent pregnancy for three years) to prevent pregnancy?	Correlation Coefficient	-0.008	-0.032	0.062	-0.021
	Sig. (2-tailed)	0.896	0.583	0.292	0.712
	N	300	300	296	300
How acceptable to you is using withdrawal (or when the boy pulls out before sperm comes out) to prevent pregnancy?	Correlation Coefficient	-0.085	-.128	0.088	-.151
	Sig. (2-tailed)	0.142	0.027**	0.132	0.009**
	N	300	300	296	300
How acceptable to you is taking the morning after-pill (using pills after sex to not get pregnant) to prevent pregnancy?	Correlation Coefficient	-0.003	-0.021	0.011	-0.031
	Sig. (2-tailed)	0.955	0.723	0.845	0.590
	N	300	300	296	300

Notes: Significant at $p<0.05$**

Only two study variables had a significant correlation with pregnancy prevention methods; share of persons employed and the number of assets. Share of persons employed had a statistically significant ($p=0.013$ and $p=0.027$) weak, negative correlation ($r=-1.43$ and $r=-1.28$) with the use of a needle and with withdrawal. The share of persons employed and the number of assets also showed a statically significant ($p=0.027$ and $p=0.009$) weak, negative correlation (give the two correlation coefficients here as $r=-.128$ and $r=-.151$) with withdrawal.

Table 4: Association of socio-economic factors and Acceptability of Pregnancy Prevention Methods

		Pearson		Kendall 's tau-b		Gamma	
Variable	**sample (n)**	**value**	**sig. 2 tailed**	**value**	**approx. sig.**	**value**	**approx. sig.**
How acceptable to you is using a pregnancy prevention needle (Depo Provera, Nustrate) to prevent pregnancy?							
Public and private education	283	2.650	0.618[a]	0.018	0.763	0.059	0.763
highest level of education completed	295	1.241	0.871	-0.001	0.985	-0.002	0.985
highest level of mother's education	206	31.589	0.011[a]	-0.134	0.024**	-0.181	0.024**
Family structure	300	0.495	0.974	0.012	0.815	0.022	0.815
Household income /grant	300	6.239	0.182	-0.037	0.475	-0.061	0.475
Type of dwelling	296	1.335	0.855	-0.024	0.645	-0.043	0.645
How acceptable to you is using contraceptive pills to prevent pregnancy?							
Public and private education	283	1.962	0.743	-0.015	0.780	-0.048	0.780
Highest level of education	295	2.772	0.597	0.030	0.569	0.063	0.569
Highest level of mother's education	206	17.110	0.379	-0.080	0.171	-0.107	0.171
Family structure	300	3.153	0.533	0.040	0.444	0.072	0.444
Household income /grant	300	7.394	0.116	0.017	0.750	0.027	0.750
Type of dwelling	296	6.422	0.170	-0.048	0.371	-0.085	0.371
How acceptable to you is abstaining from sex to prevent pregnancy?							
Public and private education	283	3.077	0.545	-0.063	0.218	-0.205	0.218
Highest level of education	295	4.905	0.297	0.094	0.071	0.195	0.071
Highest level of mother's education	206	20.575	0.195	0.049	0.383	0.066	0.383
Family structure	300	0.531	0.970	-0.014	0.786	-0.025	0.786
Household income /grant	300	0.961	0.916	-0.018	0.736	-0.029	0.736
Type of dwelling	296	7.461	0.113	-0.086	0.114	-0.153	0.114
How acceptable to you is using condoms to prevent pregnancy							
Public and private education	283	2.000	0.736	-0.016	0.783	-0.058	0.783
Highest level of education	295	9.903	0.042**	0.109	0.062*	0.239	0.062*
Highest level of mother's education	206	7.747	0.956	0.021	0.732	0.032	0.732
Family structure	300	2.327	0.676	0.013	0.809	0.026	0.809
Household income /grant	300	2.266	0.687	0.026	0.634	0.046	0.634
Type of dwelling	296	7.478	0.113	-0.024	0.656	-0.046	0.656

How acceptable to you is getting an implant (a device placed under the skin in your arm to prevent pregnancy for three years) to prevent pregnancy?							
Public and private education	283	838	0.933	0.027	0.620	0.085	0.620
Highest level of education	295	4.701	0.319	0.061	0.262	0.125	0.262
Highest level of mother's education	206	17.876	0.331	-0.027	0.346	0.085	0.346
Family structure	300	0.580	0.965	-0.004	0.934	-0.008	0.934
Household income /grant	300	2.462	0.651	-0.064	0.216	-0.103	0.216
Type of dwelling	296	4.588	0.332	0.060	0.238	0.106	0.238
How acceptable to you is using withdrawal (or when the boy pulls out before sperm comes out) to prevent pregnancy?							
Public and private education	283	4.898	0.298	-0.040	0.445	-0.129	0.445
Highest level of education	295	1.851	0.763	-0.047	0.398	-0.098	0.398
Highest level of mother's education	206	13.504	0.636	0.002	0.969	0.003	0.969
Family structure	300	4.171	0.383	0.004	0.940	0.007	0.940
Household income /grant	300	3.111	0.539	0.001	0.988	0.001	0.988
Type of dwelling	300	8.574	0.073	0.114	0.031	0.203	0.031
How acceptable is taking the morning after-pill (using pills after sex to not get pregnant) to prevent pregnancy?							
Public and private education	283	2.299	0.681	-0.066	0.247	-0.209	0.247
Highest level of education	295	1.094	0.895	0.009	0.868	0.018	0.868
Highest level of mother's education	206	13.973	0.601	0.037	0.524	0.049	0.524
Family structure	300	0.856	0.931	0.038	0.468	0.067	0.468
Household income /grant	300	4.361	0.359	-0.067	0.198	-0.107	0.198
Type of dwelling	296	1.225	0.874	-0.036	0.503	-0.063	0.503

Notes: Not all test requirements were met, and the results should be discounted [a]
Significant at p<0.05**
Significant at p<0.1*

Table 4, above, assesses each variable concerning factors associated with the acceptability of pregnancy prevention methods. The results show a limited number of significant relationships. In the case of contraceptive injections, the requirements were not met for Pearson chi-square, but the gamma and Kendall's tau-b both indicated a statistically significant (p=0.024 each) weak, negative correlation (gamma=-0.181 and tau-b=-0.134), indicating that higher education for the mother reduced acceptability. In the case of condoms, the Pearson chi-square suggests a statistically significant difference at p<0.05 (chi square=9.903, p=0.042). The gamma and Kendall's tau-b showed a statistically significant (though only at p<0.1; p=0.062 each) weak correlation (gamma=0.109 and tau-b=0.239), indicating that higher education reduced the acceptability of condoms.

Discussion

The results show high rates of acceptability of modern methods among the majority of participants. This observation may be the result of the provision of free contraceptive services without parental consent for those 12 years and above in South Africa (Hoopes *et al*., 2015). Condoms are the most acceptable pregnancy prevention method and it confirms existing research (De Klerk, 2011; Williamson *et al*., 2009). The injections have the second highest acceptability among participants, which also confirms current research (Mshweshwe-pakela *et al.*, 2017).

Overall, the results show that only three out of a possible 32 cases had statistically significant relationships. These results show that the link between socioeconomic factors and pregnancy prevention methods in literature was not present in the data for this project. Where significant relationships were present, they were in the opposite direction than what one would expect. For example; the more people employed in a household, the less the respondents find the use of the needle for pregnancy prevention acceptable. The same applies in terms of withdrawal. Furthermore, the more household assets the household had, the less acceptable they found withdrawal as a pregnancy prevention method. The study found no significant correlation with the contraceptive pill, use of condom, implant, IUD loop, and abstinence for any of the socio-economic indicators. The same patterns are also applicable concerning the continuous variables.

The above situation shows that, unlike the evidence from the literature review, there is very little evidence that socio-economic indicators determine the acceptability of specific pregnancy prevention methods. In the three cases where such a statistically significant correlation exists, the relationship was not in the expected direction. So, why do this study's results differ from conventional wisdom in literature?

The first reason is related relate to affordability. The three cases that show a negative correlation signify that adolescents in those households with higher levels of employment by adults can afford to buy their contraceptives. Adolescents from more affluent households are less likely to find the withdrawal and the needle methods as pregnancy prevention methods acceptable because other methods are available to them. The literature regards these two methods as methods for poor people who cannot afford other contraceptives.

Secondly, it relates to status. The participants are either poor people or first-generation black middle-class South Africans who benefitted from the fruits of democracy and empowerment in the post-apartheid period (Mattes, 2014). The literature characterises the first-generations black middle-class using their growing spending power, better levels of education, and increased daily consumption. They find the environment comfortable enough as they can work, earn a certain degree of income, and own assets, but they are not wealthy enough to move out of this location. Therefore the unacceptability of these methods might be a way of expressing their middle-class development but within the confined space of a former black township. This means that the neighbourhood's socioeconomic development can be a factor that hinders or shapes the contraceptive choices of the participants (Aremu, 2013).

Thirdly, culture and strong religious identity often affect women, stopping them from willingly considering contraceptives or even using them, whether it is modern or traditional. With culture defined as learned and shared beliefs, or norms guiding a group of people, there is a connection concerning health outcomes, especially contraception use. The researchers' cultural consensus model suggested one model focusing on abstinence, faithfulness, and condom use (Sensoy *et al.*, 2017; Marias *et al.*, 2018)

Fourthly, and linked to culture, government messages about sex, pregnancy prevention, and HIV prevention have also played a role. Perhaps the emphasis should not be placed on the high efficiency of contraceptives due to cultural factors but on simple prevention messages that have been reinforced through the years. Over the years, the South African HIV prevention messaging which include messages of abstinence, being faithful, and using condoms (ABC) has been emphasised, participants may be inclined to practice these methods rather than others (Marias *et al.*, 2018).

Fifthly, while few studies (Kareem and Samba, 2016; Naziru *et al*., 2019) have described mothers'/female guardians' levels of education to be significant in the use of contraceptives, the results show mothers' education levels do not affect the acceptability of the needle as a prevention method, probably because this contraceptive is regarded to be for poor people who cannot afford other contraceptives, as mentioned earlier. Similarly, the use of condoms is not strongly associated

with educational level, which indicates that the use of a condom may largely depend on societal sexual norms and practices (Ngome, 2016).

Finally, the lack of positive results can be associated with the complexity of a decision on pregnancy prevention. The choice of pregnancy prevention method is a complex issue and maybe the result of the participants' stage of life and relationship factors rather than socio-economic factors. Characteristics such as living with a partner, if participants have children, or living with a partner, having children, and using contraception during first intercourse may be more relevant in the choice of contraception than socio-economic factors (Ruiz-Munoz and Perez, 2013). Another reason may be the attitude of the participant towards the use of these two methods or towards contraception generally. One's attitude is a positive or negative feeling or inclination of an individual about an idea, in this case, contraceptives (Bohner and Wanke, 2002). The basis of one's attitude usually depends on their childhood, through which they develop through reinforcement, direct experience, or social learning. Once approaches are developed, they become difficult to reverse. Participants in this study are aware and know the methods but lack the act of practice. This may be the result of negative and prejudiced attitudes toward the use of these methods.

Conclusion

This study assessed the socio-economic factors associated with the level of acceptability of pregnancy prevention methods among adolescent girls in the former black township of Bloemfontein, Mangaung. The literature mainly shows positive relationships between socio-economic status and contraceptive use, despite some studies showing opposite results. However, this study found a minimal association of socio-economic factors with the acceptability of different contraceptive methods. Of particular interest is the result that higher educational levels reduced the acceptability of the use of condoms and the contraceptive needle (Depo Provera, Nustrate) as a method of pregnancy prevention. Also, the study suggests that the more household assets a household had, the less acceptable the withdrawal method was.

While this might be seen as aberrant, scholars have suggested that perceptions and the use of contraceptives among adolescents seem to be more influenced by culture, an attitude which is defined by reinforcing messages from childhood, as wells as neighbourhood socio-economic

development, rather than socio-economic indicators, such as household assets and income, educational attainment, and family structure. Thus, there is a need to address the perceptions and use of contraceptives among adolescents by targeting generational sexual norms, cultural, and religious institutions and how to address young people when they seek contraceptive related knowledge. The location of this study in the former black township of Bloemfontein has probably reinforced the issue of culture, as the higher-income households have left the area.

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