



Sexual behaviours and contraceptive usage among Nigerian undergraduates: Moderating effects of course of study and school type

Tosin. E. Akinduyo^{1*}, N.P.M Mabaso²

^{1,2}Educational Psychology Department, University of Johannesburg, South Africa

¹takinduyo@uj.ac.za

Article Info

Article history:

Received July, 9th 2024

Revised August 20th, 2024

Accepted September, 8th 2024

Keyword:

Sexual behaviour;

Contraceptive usage;

Undergraduates; Course of

study; School type; Nigeria

ABSTRACT

Sexual behaviours and contraceptive usage among undergraduates are sources of concern to all stakeholders in Nigeria and across the globe. This study addresses the gap by investigating the roles of school type (i.e., private and public and the faculty/course of study on undergraduates' sexual behaviours and contraceptive usage among undergraduates in Southwestern part of Nigeria. This quantitative study used a descriptive design of the survey type. One thousand and two hundred (1,200) undergraduates were selected for this study using multi-stage sampling technique. Results showed that many undergraduates in different kinds of sexual behaviours such as penetrative sex, embracing the opposite sex, dating, petting and kissing; with only undergraduates from private tertiary institutions and studying health-related course were acquainted with the adequate use of contraceptives. Based on the findings of this study, it was recommended that increased awareness should be available for undergraduates across all agents of socialization to prevent health-risk challenging the well-being of undergraduates.



©2022 Authors. Published by Arka Institute. This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License. (<https://creativecommons.org/licenses/by-nc/4.0/>)

INTRODUCTION

Reproductive health issues are sources of concern across the globe, due to their impact on the general well-being of individuals in the society. Sexual behaviour could be described as an individual's responses to sexual feelings either naturally or by enhanced means. Undergraduates may experience a series of emotional, physical and psychological challenges as adolescents, which tend to affect their sexual behaviour. Responses to sexual stimuli are beyond ordinary, but involve significant reactions (Chivers, 2017); with a pivotal role in healthy human sexual development, prompting numerous adolescents to engage in various sexual behaviours (Lindberg et al., 2021). The expression of sexual behaviour is normal and an acknowledgment of satisfying the individual's sexual needs which may be beneficial and/or risky (Chawla & Sarkar, 2019). As observed, many university undergraduates are within the category of adolescents who deviate sexually by engaging in various sorts of risky sexual behaviours. Olajire (2016) reported that undergraduates' engagement in sexual behaviour in recent times is rampant; especially among African undergraduates (Alo & Akinde, 2010; Karman et al., 2007). According to Adedini et al. (2021), young people in Nigeria have been reported to struggle with healthy reproductive health, leading to a high rate of unplanned pregnancies, unprotected sexual intercourse, sexually transmitted infections, and unsafe abortions; transactional sexual relationships (Ige & Solanke, 2020); and multiple sexual partners (Gebresllasie et al., 2017).

Sustainable Development Goal 3 proposes achieving healthy living and enhanced well-being for everyone of all ages around the world. Sexual behaviour and contraceptive usage are sources of challenges to stakeholders, because of the attached consequences if neglected. Envuladu et al. (2017) described the engagement of young people in sexual behaviour as caused by forceful sex, peer influence, pleasure-loving, a show of masculinity by males, pleasing male partners, transactional sex, and sexual curiosity; with many young people avoiding the usage of condom (Envuladu et al., 2021). Sexual behaviour has five major categories such as foreplay, fondling, penetrative sex, masturbation, and pornography. Each category tends to have a relationship with the usage of contraceptives among

undergraduates in Southwest, Nigeria. Each category establishes its relationship with the usage of contraceptives in a bid to be protected against unintended pregnancies and sexually transmitted infections.

Foreplay is best described as pre-coital relations which include: kissing, dating, embracing, holding hands, and lapping of the opposite sex; cuddling, touching, gisting, and love texting (Gopal, 2023). These activities set the sexual mood for sexual intercourse among undergraduates; that includes undressing, verbal motivation, massaging, fantasy, kissing, and tickling (Bansal et al., 2023). According to Levi (2018), foreplay or outercourse is a warm-up activity and the appetizer to sexual intercourse. A coital relationship's orgasm may not be reached or the height of sexual pleasure may not be reached by a female without foreplay. Foreplay usually spice up sexual intercourse in any relationship. Foreplay adds sexual enthusiasm that prepares the body for penetrative sex which in turn facilitates enough vagina lubrication. As reported by Guntupalli (2017), foreplay is the most important part of sexual intercourse that women appreciate most. But argued that both males and females appreciate foreplay without limiting it to female gender alone. One of the reasons is that it lasts more than 18 minutes which aids the release of hormones needed for intimate connection and intense sexual satisfaction. Guntupalli (2017) further cited that though foreplay is not penetrative sex, individuals should use birth control methods such as IUDs, implantable devices, oral contraceptive pills, and estrogen rings to save them from unintended pregnancies. Foreplay is probably safe with no risk attached to it, if it does not include the exchange of bodily fluids like deep kissing, and licking among others. However, appropriate contraceptive use was found to make foreplay safe at any point an individual engages in foreplay.

Fondling is a sexual activity that involves loving, gentle and erotic touching of some body parts such as breasts, nipples, buttocks, inner thighs, genitals, skin, and ears, among others to achieve sexual pleasure. Males have been reported to view breasts, genital and other areas as the quickest erogenous zones aiding orgasm. No matter the form that fondling takes, fondling is highly useful in every sexual behaviour. The benefits include building women's excitement level before a coital relationship, erection in men, and prevention of clumsiness in women (Akingbade, 2018). Fondling may result in sexual intercourse and the release of fluids that carry infections among Nigerian undergraduates, hence the need to be knowledgeable about the use of contraceptives. Sexual activities among Nigerian undergraduates are high with poor contraceptive usage, despite efforts to promote awareness in reducing health risks (Makanju et al., 2018).

Undergraduates may engage in penetrative sex as a result of drug use, pornographic film-viewing, experimentation, peer influence, and freedom from parents. Penetrative sex could be termed sexual intercourse or penile-vagina penetration involving manual, anal, oral, and genital stimulations (Mahoney, 2021; Plannedparenthood, n.d.). The prevalence of unsafe sexual intercourse among Nigerian undergraduates is high (O. Abolurin et al., 2024); resulting in several incurable and curable health risks (Ojewola & Akinduyo, 2019). Hence, after having unprotected penetrative sex, employing emergency contraception will in the fullness of time reduce adverse consequences (Garg & Verma, 2017).

Masturbation could be a private means of engaging in sexual behaviour among undergraduates. Muse (2015) posited that masturbation is practiced at the full convenience of the player in terms of time and environment by freely exploring pornography. Masturbation could involve touching sex organs for sexual pleasure that brings up orgasm. This form of sexual behaviour could be done single-handedly or with another person. When masturbation is done with another individual, it is called mutual masturbation. However, masturbation as a sexual activity is common, natural and eases sexual tension, with its addiction leading to mental health challenges (Ajmera, 2022). Using contraceptives may be necessary in the case of prevailing body cuts, sores and events that may lead to infected fluids penetrating the body.

Pornographic films that undergraduates view and sex-related magazines they read could lead them to engage in unsafe sexual behaviour, with negative effects on undergraduates' academic performance (Akinduyo & Akomolafe, 2019). Pornographic film viewing is no doubt detrimental to the health of undergraduates (Olaseinde et al., 2024); with numerous social and health aftereffects (Olaleye, 2021). A study by Rachakatla et al. (2022), investigated problematic pornography use and

attitude toward pornography among medical interns. The cross-sectional study used a sample of 32 respondents for the research and the study found that pornographic film viewing was prevalent among medical interns. Olose et al. (2021) examined a case report on pornography addiction in a University Undergraduate in Nigeria. The study found that pornographic film viewing is prevalent among university undergraduates, with shreds of evidence of addiction and behavioural problems. Nozid et al. (2023) assessed the psychological impacts of pornography exposure among university students in Pahang. An online survey was used to select a sample of 114 respondents. The study found that male adolescents engaged more in pornography than their female counterparts. Probably, undergraduates engaging in pornography may need to equip themselves with contraceptives to forestall any unseen circumstance against their health.

School type seems to contribute to undergraduates' sexual behaviour and contraceptive usage. In Nigerian universities, many government-owned universities may not be able to provide hostel accommodation for their students on campus. The researcher observed that privately owned universities with low student populations provided hostel accommodation for their undergraduates and to a certain extent monitored the activities of their undergraduates. For instance, some privately owned universities tend to expel students that engage in prohibited sexual behaviour on campus. Undergraduates respond to their sexual urges and express them without minding the consequences, especially in public universities. Sadly, male undergraduates living off-campus were found to have multiple sexual partners (Eze et al., 2018); this is a peculiar incidence among undergraduates attending public universities in Nigeria. Utoo et al. (2020) posited that sexual behaviour is prevalent among female undergraduates in North-Central Nigeria; Gbagbo & Nkrumah (2019) found that undergraduates in public universities were fully aware of how to use contraceptives, but the high-level awareness of contraceptives does not influence their usage in Ghana. Akinsoji et al. (2015); Udo & Amosu (2020) affirmed that female undergraduates in Southwest Nigeria highly engage in all sorts of sexual activities, but neglect the commensurate usage of contraceptives.

No matter the faculty or the course of study, undergraduates' sexual behaviour and contraceptive usage may be aggravated or influenced by the rigours and content of their curriculum. Faculties with a higher number of undergraduates may have a higher number of undergraduates carelessly engaging in sexual behaviour with low usage of contraceptives. In addition, undergraduates offering health-related courses may be careful with their engagement in sexual behaviour, probably because of their knowledge about the consequences of engaging in sexual behaviour and the use of contraceptives. National Center for Chronic Disease Prevention and Health Promotion (2023) affirmed that health-related programmes enhance students' exposure to useful health education that protects them against risky behaviours; other faculties of study might not be fully aware of this practical knowledge. However, sexual behaviour and contraceptive usage have been sources of serious challenges in the health sector in Africa, despite government efforts to reduce the prevalence of unintended pregnancies, abortion rate, and spread of sexually transmitted infections (Hlongwa et al., 2020). This study intends to investigate sexual behaviours and contraceptive usage among Nigerian undergraduates, examining the course of study and school type as moderating variables.

The theoretical framework employed for this study is the Sexual Script Theory postulated by Simon & Gagnon (2011). Sexual script theory is based on three major levels of intrapsychic belief (i.e., an individual can manage his desire); interpersonal script (i.e., each person can apply cultural norms in a particular context); and cultural scenarios (i.e., the collective judgment or meaning from a society). Scripting theory applies to sexual behaviour and contraceptive usage. According Simon & Gagnon (1986), the three concepts affirmed that embarking on a particular behaviour may be facilitated by an individual, other individuals and meanings from the societal norms and judgments. The assumption of this theory is that engaging in a particular behaviour such as sexual behaviour and contraceptive usage by undergraduates is a well-rehearsed, scripted, planned and schemed desire before its engagement. More so, the benefits and consequences of engaging in a particular behaviour are weighed before the occurrence of a particular behaviour. This is applicable to the sexual behaviour and contraceptive usage among undergraduates, who are aware of the societal values, benefits and consequences of their behaviours before engagement.

Building on this theoretical framework, the research seeks to answer two key questions: first, what are the sexual behaviors engaged in by undergraduates in Southwest, Nigeria?, and second, what types of contraceptives frequently used by undergraduates in Southwest, Nigeria? To explore these questions, the study proposes several hypotheses: 1) There is no significant relationship between sexual behaviour and the use of contraceptives among undergraduates; 2) There is no significant relationship between sexual behaviour components and the use of contraceptives among undergraduates; 3) There is no significant influence between undergraduates' school type and sexual behaviour; 4) Faculty type has no significant influence on undergraduates' contraceptive usage; 5) There is no significant influence between undergraduates' school type and contraceptive usage; 6) Faculty type has no significant influence on undergraduates' contraceptive usage.

RESEARCH METHODS

This quantitative study was conducted among university undergraduates in Southwest Nigeria using a descriptive design of the survey type. The Southwestern geo-political zone of Nigeria is mostly a Yoruba-speaking ethnic group comprising six states. The population for this study consists of all full-time undergraduates in both private and public universities in the South-western part of Nigeria. Ethically, approval to conduct this study was an extension of the approval tagged "210323ERC3" obtained from the Human Research Ethics Committee of Adekunle Ajasin University Akungba-Akoko, Ondo State, Nigeria. 1,200 respondents were selected for the study through a multi-stage sampling technique. At stage one, simple random sampling was used in selecting three states from the six states in Southwest, Nigeria. At stage two, the researcher purposively picked two universities (One public and one private) from each of the selected three states making a total of six universities. At stage three, a simple random sampling technique was used to select any four faculties in each university. At stage four, a total of 1200 respondents were selected from all the six selected universities. In each university, 200 respondents consisting of 100 males and 100 females were selected through a stratified random sampling technique. A validated self-developed research instrument was used for the study. To ascertain the reliability of the instrument, a test-retest method was used and a reliability coefficient of 0.70 adjudged the instrument reliable for use. Sequel to the approval of ethical clearance, with the help of two trained research assistants, data were collected by personally administering the research instrument to the respondents individually, and on-the-spot- collection was done after each respondent completely responded to all the items on the questionnaire. The data collected were analysed using descriptive and inferential statistics; while the hypotheses were tested at a 0.05 level of significance.

RESULTS AND DISCUSSION

Table 1. Distribution of Respondents by School Type

School Type	N	Percentage
Private	600	50.0
Public	600	50.0
Total	1200	100

Table 1 shows that 600 (50%) of the respondents who participated in the study attended private universities and 600 (50%) respondents were public university undergraduates.

Table 2. Distribution of Respondents by Faculty

Faculty	N	Percentage
Arts	150	12.5
Agriculture	50	4.2
Education	150	12.5
Engineering	150	12.5
Social and Management Sciences	250	20.8
Sciences	200	16.7
Law	200	16.7

Faculty	N	Percentage
Medicine	50	4.2
Total	1200	100

Table 2 shows that 1,200 respondents participated in the study in which 150 (12.5%) respondents were from the Faculty of Arts. 50 (4.2%) respondents were from Faculty of Agriculture. 150 (12.5%) respondents were Faculty of Education. 250 (20.8%) respondents were undergraduates from the Faculty of Social and Management Sciences. 200 (16.7%) respondents were Faculty of Science undergraduates. 200 (16.7%) respondents from the Faculty of Law participated in the study. 50 (4.2%) respondents who were medical students took part in the study

Research Question One: *What are the sexual behaviours engaged in by undergraduates in Southwest, Nigeria?*

To answer this research question, responses of the respondents to items 1-20 on sexual behaviour were scored and computed to determine the mean score for each sexual behaviour. The mean of the sexual behaviour was then considered for ranking

Table 3. Mean and Rank Order of Sexual Behaviours of Undergraduates in Southwest, Nigeria.

Item	Sexual behaviour	Mean	Rank
7	Penetrative sex with the opposite sex	3.00	1 st
4	Embracing the opposite sex	2.94	2 nd
2	Dating the opposite sex	2.91	3 rd
3	Petting the opposite sex	2.87	4 th
1	Kissing the opposite sex	2.75	5 th
14	Lapping opposite sex	2.37	6 th
13	Caressing the body of the opposite sex	2.26	7 th
6	Breast fondling	2.24	8 th
5	Holding of opposite sex's hands	2.19	9 th
8	Genital fondling	2.12	10 th
9	Viewing pornographic videos	2.02	11 th
16	Watching the nakedness of opposite the sex	1.95	12 th
17	Dressing in the opposite sex wears	1.90	13 th
15	Sending sexual videos/pictures to the opposite sex	1.80	14 th
11	Masturbation (self – sexual stimulation for pleasure and organism)	1.79	15 th
9	Oral sex	1.78	16 th
19	Deliberate exposure of sensitive body parts to the opposite sex	1.76	17 th
10	Anal sex (insertion of penis into the anus)	1.73	18 th
20	Forcing opposite sex into sexual conversation on the phone	1.71	19 th
18	Engaging in sexual intercourse with the same sex	1.55	20 th

Table 3 presents the sexual behaviours engaged in by undergraduates in Southwest, Nigeria. The result shows that penetrative sex, embracing the opposite sex, dating, petting and kissing the opposite sex are sexual behaviours engaged in, to a great extent by undergraduates in Southwest, Nigeria. Ranking the sexual behaviour shows that penetrative sex is the most commonly engaged sexual behaviour with a 3.00 mean, closely followed by embracing the opposite sex with a mean of 2.94. Dating the opposite sex with a mean score of 2.91 was ranked 3rd while petting and kissing of the opposite sex with mean scores of 2.87 and 2.75 were ranked 4th and 5th respectively. Others include lapping of the opposite sex with a mean score of 2.37, breast fondling with a mean of 2.24, holding of opposite sex's hands with 2.19 and viewing pornographic videos with a mean of 2.02 were ranked 6th 7th, 8th, 9th and 10th respectively. Engaging in sexual intercourse with the same sex with the lowest mean of 1.55 was ranked 20th in the ranking order.

Research Question Two: *What are the types of contraceptives frequently used by undergraduates in Southwest, Nigeria?*

Table 4a. Types of Contraceptives (Traditional methods) commonly used by Undergraduates in Southwest, Nigeria

<i>Item No</i>	Traditional Contraceptives Methods	Mean	Rank
19	Withdrawal method or coitus interruptus	2.68	1 st
2	Calendar rhythm (safe and unsafe period)	2.16	2 nd
13	Drinking concentrated salt solution after sexual intercourse	2.12	3 rd
14	Washing private part with water after sexual intercourse	2.06	4 th
24	Washing the genital area with hot water and concentrated caustic soda to prevent pregnancy	1.98	5 th
12	Herbs	1.88	6 th
18	Soaking cotton wool with lemon solution in the vagina as a barrier	1.83	7 th
3	Padlock (Akaraba)	1.76	8 th
4	Mucus Billing	1.75	9 th
16	Drinking solution made from potash to prevent fertilization	1.75	9 th
23	Engaging in different exercise in an attempt to dislodge the sperm and prevent its entry through the cervical region.	1.68	11 th
11	Incisions around the waist to prevent pregnancy	1.67	12 th
21	Cultural emphasis on virginity before marriage	1.65	13 th
17	Drinking concoctions (such as drinking water used in washing a dead person to prevent pregnancy)	1.65	13 th
22	Lacation Ameorrhoea Method (LAM) or breast feeding	1.63	15 th
20	Wearing of bladder goat on the genital area to prevent pregnancy	1.57	16 th
5	Basal body temperature	1.54	17 th
10	Incantation to conjure up forces on parrot feathers	1.54	17 th
1	Abstinence	1.53	19 th
15	Conjuring incantation on locked padlock (akaraba) to prevent pregnancy	1.52	20 th
7	Wooding dolls (Omolangidi)	1.49	21 st
6	Wearing of charmed rings during sexual intercourse	1.46	22 nd
9	Amulets made from snake skin	1.46	22 nd
8	Waist belts made from leopard skin	1.45	24 th

Table 4a presents the types of traditional contraceptives frequently used by undergraduates in Southwest, Nigeria. The result reveals that, with a cut-off of 2.50 for the rating scale, only the withdrawal method or coitus interruptus (mean=2.68) had a mean score above the cut-off point. This implies that withdrawal method chiefly constituted the type of traditional contraceptives frequently used

by undergraduates in Southwest, Nigeria. This is closely followed by calendar rhythm (calculating safe and unsafe days in the menstrual cycle to have sex) with a mean score of 2.16 which ranked 2nd. Drinking concentrated salt solution after sexual intercourse with a mean score of 2.12 was ranked 3rd. Washing the private part with water after sexual intercourse had a mean score of 2.06 was ranked 4th. Washing the genital area with hot water and concentrated caustic soda to prevent pregnancy with a mean score of 1.98 was ranked 5th. Taking herbs after sexual intercourse to prevent pregnancy with a mean score of 1.88 was ranked 6th. Soaking cotton wool with a lemon solution in the vagina as a barrier to fertilisation had a mean score of 1.83 and was ranked 7th. Others are: Padlock/Akaraba (mean=1.76), Mucus Billing (mean=1.75), Drinking solution made from potash to prevent fertilisation (mean=1.75) and waist belts made from leopard skin (mean=1.45) ranked as the least.

Table 5b. Types of contraceptives (modern methods) frequently used by undergraduates in Southwest, Nigeria

Items No	Modern Contraceptive Method	Mean	Rank
27	Condom	2.28	1 st
25	Oral Contraceptive Pills (OCP)	1.97	2 nd
28	Injections (Depo-Provera)	1.76	3 rd
30	Intra-Uterine Device	1.70	4 th
31	Diaphragm	1.67	5 th
33	Spermicidal Cream	1.67	5 th
38	Contraceptive foam	1.65	7 th
29	Contraceptive Implant	1.64	8 th
37	Contraceptive Jelly	1.63	9 th
32	Contraceptive Sponge	1.61	10 th
34	Vaginal ring	1.61	10 th
39	Hormonal contraception	1.60	12 th
36	Transdermal contraceptive patch	1.57	13 th
26	Vasectomy (male sterilisation)	1.57	13 th
35	Tubal ligation (female sterilisation)	1.56	15 th
40	Vaginal contraceptive film (VCF)	1.56	15 th

Table 5b presents different types of modern contraceptives commonly used by undergraduates in Southwest, Nigeria. Ranking the types of modern contraceptives in terms of frequency of usage reveals that condom use (mean=2.28) ranked first, closely followed by Oral Contraceptive pills (OCP) – mean=1.97, Injections (Depo-Provera) (mean=1.76), Intra-Uterine Device – mean score=1.70, spermicidal cream and injection both have (mean=1.67). Tubal ligation (female sterilization), vasectomy and vagina contraceptive film with the mean scores of 1.56 and 1.57 respectively are the least in the ranking order.

Testing of Hypotheses

Hypothesis 1: There is no significant relationship between sexual behaviour and the use of contraceptives among undergraduates.

Table 6. Test of Relationship between Sexual Behaviour and the Use of Contraceptives among Undergraduates in Southwest, Nigeria.

Variables	N	r	p
Sexual behaviour	1200		
Contraceptives Usage	1200	0.567*	.000

* **Significant, P<0.05**

Table 6 reveals that the r-value of 0.567 is greater than 0.05 alpha significance level. Based on this, hypothesis one was rejected. This implies that a significant relationship exists between sexual behaviour and the use of contraceptives among undergraduates at 0.05 level ($r=0.567$; $p<0.05$). Sexual behaviour influences the usage of contraceptives among undergraduates.

Hypothesis 2: There is no significant relationship between sexual behaviour components and the use of contraceptives among undergraduates.

Table 7. Correlation matrix of Sexual Behaviour components and Use of Contraceptives among Undergraduates

	1	2	3	4	5	6
Foreplay (1)	1.000	.698*	.558*	.385*	.566*	.345*
Fondling (2)		1.000	.783*	.523*	.741*	.476*
Penetrative sex (3)			1.000	.563*	.796*	.489*
masturbation (4)				1.000	.650*	.609*
Pornography (5)					1.000	.509*
Contraceptive usage (6)						1.000

***Significant, P< 0.05**

Table 7 shows that there is a significant relationship between foreplay ($r=0.345$, $p<0.05$), fondling ($r=0.476$, $p<0.05$), penetrative sex ($r=0.489$, $p<0.05$), masturbation ($r=0.609$, $p<0.05$), pornography ($r=0.509$, $p<0.05$) and contraceptive usage among undergraduates at 0.05 level of significance. Similarly, there exist significant correlations among the forms of sexual behavior, that is, foreplay correlates significantly with fondling ($r=0.698$, $p<0.05$), penetrative sex ($r=0.558$, $p<0.05$), sexual deviations ($r=0.385$, $p<0.05$) and pornography ($r=0.566$, $p<0.05$) at 0.05 level of significance in each case. Also, there is a significant positive relationship between fondling and penetrative sex ($r=0.783$, $p<0.05$), masturbation ($r=0.523$, $p<0.05$), and pornography ($r=0.741$, $p<0.05$) at 0.05 level. There is a significant relationship between penetrative sex and masturbation ($r=0.563$, $p<0.05$), penetrative sex and pornography ($r=0.796$, $p<0.05$), masturbation and pornography ($r=0.650$, $p<0.05$) at 0.05 level of significance.

Hypothesis 3: *There is no significant influence between undergraduates' school type and sexual behaviour*

Table 8. t-test of Undergraduates' Sexual Behaviour Based on School Type

School Type	N	Mean	SD	df	t	P-value
Private University	600	42.77	16.04			
Public University	600	44.52	14.00	1198	2.015	0.044

***Significant, P<0.05**

Table 8 shows that the mean scores for both private and public universities undergraduates' sexual behaviour indicate 42.77 and 44.52 respectively. The standard deviation values show that the t-calculated values was 2.015, while the degree of freedom was 1198. The value of t-calculated is also 2.015. Table 8 shows that undergraduates in private universities had higher mean score of 42.77 on sexual behaviour than their counterparts in public universities with a mean score of 44.52. Since the exact probability value (p-value) of 0.044 is less than 0.05 significant level, the null hypothesis was rejected in favour of public universities. The result further reveals that there is a significant difference between undergraduates' school type and sexual behaviour at 0.05 level of significance ($t=2.015$, $P<0.05$). By implication, public universities' undergraduates engage more in sexual behaviour than undergraduates in private universities.

Hypothesis 4: *There is no significant influence between undergraduates from private and public universities on the usage of contraceptives.*

Table 9. t-test of Difference between Undergraduates' School Type and Contraceptive Usage

School Type	N	Mean	SD	df	t-cal	P value
Private University	600	72.04	26.61	1198	4.266*	.000
Public University	600	65.70	24.87			

*Significant, $P<0.05$

Table 9 shows that the mean values for both private and public university undergraduates' contraceptive usage are 72.04 and 65.70 respectively. It also indicates that the t-calculated value is 4.266, the critical t-value is 1.96, and the p-value is 0.000. The calculated t-value of 4.266 is greater than the critical t-value of 1.96. Thus, the null hypothesis was rejected. Table 9 shows that undergraduates in private universities had a higher mean score of 72.04 on contraceptive usage than their counterparts in public universities with a mean score of 65.70. The result further reveals that there is a significant difference between undergraduates' school type and contraceptive usage ($t_{cal} = 4.266$, $P<0.05$) because the p-value of 0.00 is less than at 0.05 significant level. The null hypothesis was therefore rejected. This implies that there is a significant difference between undergraduates' school type and contraceptive usage. By implication, undergraduates in private universities use contraceptives more than their counterparts in public universities.

Hypothesis 5: Faculty of study has no significant influence on undergraduates' sexual behaviour.

Table 10. Summary of Analysis of Variance (ANOVA) of Undergraduates' Sexual Behaviour Based on Faculty of Study

Sources of Variables	Sum of squares	df	Means square	Cal. value	F-	P-value
Between groups	6710.240	7	958.606	4.300*		.000
Within groups	265721.959	1192	222.921			
Total	272432.199	1199				

*Significant, $p<0.05$

Table 10 reveals that there is a significant difference between undergraduates' faculty and sexual behaviour ($F_7, 1192 = 4.300$, $P<0.05$). The null hypothesis was rejected. This implies that the faculty of undergraduates have a significant influence on undergraduate's sexual behaviour. To locate the source(s) of the significant difference among the groups, a Scheffe post-test was carried out. The result is presented in Table 11:

Table 11. Scheffe Posthoc Analysis Showing Undergraduates' Sexual Behaviour Based on Faculty

Faculty	1	2	3	4	5	6	7	8	N	Mean
Arts									150	45.01
Agriculture								*	50	36.10
Education									150	42.23
Engineering									150	45.09
Social and Management Sciences									250	42.45
Sciences									200	43.20
Law									200	44.69
Medicine									50	50.50

*Significant, $p < 0.05$

Table 11 shows that there is a significant difference between the sexual behaviour of undergraduates from the Faculty of Agriculture and Faculty of Medicine at 0.05 significant level.

Hypothesis 6: *Faculty type has no significant influence on undergraduates' contraceptive usage*

Table 12. Summary of Analysis of Variance (ANOVA) Showing Undergraduates' Faculty and their Contraceptive Usage.

Sources of Variables	Sum of squares	df	Means square	F	P-value
Between groups	61098.628	7	8728.375	13.953*	.000
Within groups	745663.092	1192	625.556		
Total	806761.720	1199			

*Significant, $p < 0.05$

Table 12 reveals that there is a significant difference between undergraduates' faculty and contraceptive usage ($F_{9, 1192} = 13.953, P < 0.05$). Since the exact probability value (p-value) of 0.000 is less than 0.05 significant level The null hypothesis was rejected. Therefore, there is a significant difference between undergraduates' faculty and contraceptive usage. To locate the sources of significant difference among the groups, a scheffe posthoc test was carried out. The result is as presented below:

Table 13. Scheffe Posthoc Analysis Showing Undergraduates' Contraceptive Usage based on Faculty

Faculty	1	2	3	4	5	6	7	8	N	Mean
Arts		*			*			*	150	75.84
Agriculture									50	57.30
Education									150	69.99
Engineering									150	67.18
Social & Management Sciences									250	60.83
Sciences									200	70.38
Law									200	69.40
Medicine									50	93.30

*Significant, $p < 0.05$

Table 13 shows that undergraduates from the Faculty of Medicine differ significantly from their counterparts from the Faculties of Arts, Agriculture, Education, Engineering, Social and Management Sciences and Law in the usage of contraceptive at 0.05 level of significance in each case. Similarly, the mean difference between undergraduates' usage of contraceptives from the Faculty of Arts and Agriculture, Arts and Social and Management Sciences, Arts and Medicine is significant at 0.05 level in each.

Discussion

This study investigated the sexual behaviours and contraceptive usage among Nigerian undergraduates, considering the course of study and school type as moderating variables. 600 respondents from private universities and 600 respondents from public universities participated in the study. 150 respondents from the faculty of Arts, 50 respondents from the faculty of Agriculture, 150 respondents from faculty of Education, 150 respondents from the faculty of Engineering, 250 from the faculty of Social and Management Sciences, 200 respondents from the faculty of science, 200 respondents from Law faculty and 50 respondents from the faculty of Medicine participated in the study.

This study revealed that undergraduates engage more in penetrative sex, embracing the opposite sex, dating, petting, and kissing the opposite sex respectively as their sexual behaviours. This is in tandem with the findings of Egbodo et al. (2021) that 92% of female undergraduates in North-Central Nigeria engaged in penetrative sex, with 19.2% caring for safer sex through the use of contraceptives. Ezumah et al. (2021) argued that hugging, touching, and kissing are mainly reserved for married people, but undergraduates engage more in penetrative sex for socialization reason. Furthermore, Zagoto et al. (2021) found that sexual behaviours such as holding hands, kissing, hugging, and dating are sexual behaviours that are not easy to neglect among adolescents. This study also revealed that traditionally, undergraduates chiefly use the withdrawal method or coitus interruptus and calendar rhythm as contraceptive methods. Condom use and the consumption of oral contraceptive pills (OCP) respectively were the most used modern contraceptive methods. This corroborates the findings of Higgins et al. (2014) that the withdrawal method was preferred over condom usage; with its prevalence among young adults and teenagers (Whittaker et al., 2010). The plausible reasons for the prevalence of withdrawal method might be that it is a cost effective and cheap method to use. Furthermore, undergraduates enjoyed non-protective or skin-to-skin/raw sex to enjoy sexual intercourse, without recourse to the risks attached to non-protective sex.

We found that sexual behaviour influences the usage of contraceptives among undergraduates. In addition, this study revealed that all sexual behaviours components (i.e., foreplay, fondling, masturbation, penetrative sex and pornography) have relationship with contraceptive usage. This finding contracts Křepelka et al. (2020) that no relationship exist between sexual behaviour and contraceptive usage in addition to different socio-demographic factors. Also, Okesina et al. (2020) found that undergraduates at different age groups were differently influenced based on their sexual behaviours and contraceptive usage; with high involvement in different sexual behaviours and low contraceptive use among higher education students (Akinsoji et al., 2015). However, Hlongwa et al. (2020) argued that the relationship that exists between sexual behaviour and contraceptive usage helps to improve on sexual activities and proper usage of contraceptives. The probable reason for this finding might be that most undergraduates in the Southwestern part of Nigeria are aware of the risks of involving in different sexual behaviours without using contraceptives. Also, undergraduates may have uncensored access to affordable contraceptives that are adequate and affordable to prevent unintended pregnancies, sexually transmitted infections, and unsafe abortions among other health-related challenges.

In congruence with the findings by Gräf et al. (2020), this study found a high prevalence of sexual behaviours among public universities undergraduates than their counterparts in private universities. As found by Ojewola & Akinduyo (2019), inadequate provision of hostel accommodation for students especially in public universities exposed them to cohabitation and unapproved sexual activities. Keto et al. (2020) found that despite the awareness that engagement in risky sexual behaviour is high among undergraduates, predisposing them to various health challenges, with many of them being influenced by peer pressure in Ethiopia. In Nigeria, 53.8% of undergraduates in in public universities frequently engage in penetrative sex; while only 30% of private university undergraduates engage in penetrative sex (Sanni et al., 2022). Also, Srahbzu & Tirfeneh (2020) found that the rate at which adolescents engage in sexual behaviour was alarming resulting to a negative impact on the community health and the country as a whole. This might be possible in public universities due to uncut freedom given to undergraduates' on on-campus and off-campus. Also, accommodation problem is a common problem in public universities in Nigeria promoting cohabitation and risky sexual behaviours that negatively affect undergraduates' health.

Furthermore, undergraduates in private universities use contraceptives more than their counterparts in public universities. This is in line with the findings of Sanni et al. (2022) that undergraduates in public universities do not use enough contraceptives compared to their counterparts in private universities. In contrast, Ahmed et al. (2017) found that in Kano State, Nigeria, there was a high awareness of contraceptives, but undergraduates in public tertiary institutions reported low usage of contraceptives despite their risky sexual behaviours, predisposing them to a series of health challenges (Ahmed et al., 2017); with Ghana public university undergraduates experiencing low usage of contraceptives to the extent of re-using a single times after washing and drying (Gbagbo & Nkrumah, 2019). The plausible reasons for undergraduates using contraceptives more than public university undergraduates may be a result of adequate awareness programmes and reminders and/or constant orientation of the penalties for contracting sexually transmitted infections and unplanned pregnancies. Public universities in Nigeria accept students with babies in the classrooms and all university programmes. Public universities in Nigeria accept students with babies in the classrooms and in all university programmes, which may be a factor in the low usage of contraceptives.

This study revealed that the course of study/faculty of undergraduates influences undergraduate sexual behaviour. This finding aligns with the National Center for Chronic Disease Prevention and Health Promotion (2023) that health-related courses give undergraduates adequate knowledge of the benefits and consequences of engaging in sexual behaviour. Health-related courses give proper awareness about how to engage in any sexual behaviour without being at risk is an added advantage to undergraduates. The findings of Yoon et al. (2021) showed that all forms of health education positively affect life, improve life, and aid wellness, which in turn prevent individuals and society from consequential risks. In the same vein, this study found that undergraduates from the faculty of medicine reported used adequate contraceptives more than their counterparts from the faculties of Arts, Agriculture, Education, Engineering, Social and Management Sciences, and Law.

CONCLUSION

It is worthwhile to take undergraduates' reproductive health (i.e., sexual behaviour and contraceptive usage) as very crucial in achieving individual and joint healthy lifestyles. The results of this study showed that undergraduates in Nigeria engage in different kinds of sexual behaviours but do not use commensurate contraceptives to prevent them from various health-related risks. In all, undergraduates' sexual behaviours and contraceptive usage are impacted by the type of school they attend and course of study. Based on the findings of this study, it was recommended that increased awareness should be available for undergraduates across all families, religious places, schools and social media platforms to prevent health-risk challenging the well-being of undergraduates.

REFERENCES

- Adedini, S. A., Mobolaji, J. W., Alabi, M., & Fatusi, A. O. (2021). Changes in contraceptive and sexual behaviours among unmarried young people in Nigeria: Evidence from nationally representative surveys. *PLOS ONE*, *16*(2), e0246309. <https://doi.org/10.1371/journal.pone.0246309>
- Ahmed, Z. D., Ibrahim, B. S., Abolaji, M. L., Mohammed, Y., & Nguku, P. (2017). Knowledge and utilization of contraceptive devices among unmarried undergraduate students of a tertiary institution in Kano State, Nigeria 2016. *Pan African Medical Journal*, *26*, 103. <https://doi.org/10.11604/pamj.2017.26.103.11436>
- Ajmera, R. (2022). *Masturbation — How does it affect your health?* Healthline. <https://www.healthline.com/health/masturbation-side-effects>
- Akinduyo, T. E., & Akomolafe, M. J. (2019). Pornographic film-viewing among Adekunle Ajasin University Undergraduates, Ondo State, Nigeria. *Nigerian Journal of Applied Psychology, Department of Guidance and Counselling, University of Ibadan*, *21*(2), 105–121.
- Akinsoji, A., Olufunmilola, A.-A., Idowu, A., & Pius, A.-O. (2015). Sexual and contraceptive practices among female undergraduates in a Nigerian Tertiary Institution. *Ethiopian Journal of Health Sciences*, *25*(3), 209. <https://doi.org/10.4314/ejhs.v25i3.3>

- Alo, O. A., & Akinde, I. S. (2010). Premarital sexual activities in an urban society of Southwest-Nigeria. *Journal of Medical Humanities and Social Studies of Science and Technology*, 2(116), 1–16.
- Bansal, S. P., Lamba, D., & Somani, A. (2023). Sexual satisfaction: Foreplay. In *Encyclopedia of Sexual Psychology and Behavior* (pp. 1–4). Springer International Publishing. https://doi.org/10.1007/978-3-031-08956-5_34-1
- Chawla, N., & Sarkar, S. (2019). Defining “high-risk sexual behavior” in the context of substance use. *Journal of Psychosexual Health*, 1(1), 26–31. <https://doi.org/10.1177/2631831818822015>
- Chivers, M. L. (2017). The specificity of women’s sexual response and its relationship with sexual orientations: A review and ten hypotheses. *Archives of Sexual Behavior*, 46(5), 1161–1179. <https://doi.org/10.1007/s10508-016-0897-x>
- Egbodo, C. O., Edugbe, A. E., Kumbak, F. D., Pam, V. C., Envuladu, E. A., Banwat, M., & Ocheke, A. N. (2021). Risky sexual behaviour and associated factors among female students of a Tertiary institution in North-Central Nigeria. *Highland Medical Research Journal*, 21(2), 18–23. <https://www.ajol.info/index.php/hmrj/article/view/226604>
- Envuladu, E. A., Massar, K., & de Wit, J. B. F. (2021). Diversities of sexual activities and correlates of safe sex practices among adolescents in Plateau State, Nigeria. *Frontiers in Reproductive Health*, 3. <https://doi.org/10.3389/frph.2021.744622>
- Envuladu, E. A., Van de Kwaak, A., Zwanikken, P., & Zoakah, A. I. (2017). Exploring the factors influencing adolescent sexual behavior in plateau state Nigeria. *American Journal of Medicine and Medical Sciences*, 7(1), 1–6. <https://doi.org/10.5923/j.ajmms.20170701.01>
- Eze, G. U., Obiebi, I. P., & Akpofure, H. E. (2018). Sexual behaviour and patterns of contraceptive use among students of tertiary institutions in Southern Nigeria. *Journal of Community Medicine and Primary Health Care*, 30(1), 109–121. <https://www.ajol.info/index.php/jcmphc/article/view/168645>
- Ezumah, N., Agu, I. C., Okeke, C., Agu, C., Mbachu, C. O., & Onwujekwe, O. (2021). Adolescents’ perceptions about dating and sexual permissiveness in Ebonyi State, Nigeria: What can be done to enhance adolescents’ sexual health and well-being. *Frontiers in Reproductive Health*, 3, 626931. <https://doi.org/10.3389/frph.2021.626931>
- Garg, R., & Verma, U. (2017). Knowledge and attitude of emergency contraception among medical undergraduate students in Northern India. *Journal of South Asian Federation of Obstetrics and Gynaecology*, 8(1), 25–28. <https://doi.org/10.5555/20163092764>
- Gbagbo, F. Y., & Nkrumah, J. (2019). Family planning among undergraduate university students: A case study of a public university in Ghana. *BMC Women’s Health*, 19(12), 1–9. <https://doi.org/10.1186/s12905-019-0708-3>
- Gebresllasie, F., Tsadik, M., & Berhane, E. (2017). Potential predictors of risk sexual behavior among private college students in Mekelle City, North Ethiopia. *Pan African Medical Journal*, 28(1), 1–11. <https://doi.org/10.11604/pamj.2017.28.151.5370>
- Gopal, A. (2023). *Foreplay: How to be better at it*. Webmd. <https://www.webmd.com/sex/what-is-foreplay>
- Gräf, D. D., Mesenburg, M. A., & Fassa, A. G. (2020). Risky sexual behavior and associated factors in undergraduate students in a city in Southern Brazil. *Revista de Saúde Pública*, 54, 41. <https://doi.org/10.11606/s1518-8787.2020054001709>
- Guntupalli. (2017). *Shares tips on foreplay and birth control while traveling*. University of Colorado Gynecologic Oncology. <https://cancer.coloradowomenshealth.com/tips-foreplay-and-birth-control/index.html>
- Higgins, J. A., Gregor, L., Mathur, S., Nakyanjo, N., Nalugoda, F., & Santelli, J. S. (2014). Use of withdrawal (coitus interruptus) for both pregnancy and HIV prevention among young adults in

- Rakai, Uganda. *The Journal of Sexual Medicine*, 11(10), 2421–2427. <https://doi.org/10.1111/jsm.12375>
- Hlongwa, M., Mashamba-Thompson, T., Makhunga, S., & Hlongwana, K. (2020). Evidence on factors influencing contraceptive use and sexual behavior among women in South Africa. *Medicine*, 99(12), e19490. <https://doi.org/10.1097/MD.00000000000019490>
- Ige, O. S., & Solanke, B. L. (2020). Drivers of transactional sexual relationships among students in a Nigerian University: Implications for elimination of reproductive rights violation. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, 10(1), 55. <https://doi.org/10.18203/2320-1770.ijrcog20205754>
- Karman, I., Zulkiffi, S. N., & Low, W. Y. (2007). Sexual practices in Malaysian adolescents. *Malaysian Medical Journal*, 6(2), 4–10.
- Keto, T., Tilahun, A., & Mamo, A. (2020). Knowledge, attitude and practice towards risky sexual behaviors among secondary and preparatory students of Metu town, south western Ethiopia. *BMC Public Health*, 20(1), 1394. <https://doi.org/10.1186/s12889-020-09371-4>
- Křepelka, P., Fait, T., Urbánková, I., Hanáček, J., Krofta, L., & Dvořák, V. (2020). Risky sexual behaviour and contraceptive use among young women in the Czech Republic. *Central European Journal of Public Health*, 28(1), 3–12. <https://doi.org/10.21101/cejph.a5823>
- Levi, A. (2018). *8 women share the foreplay moves that always get them in the mood*. Health.Com. <https://www.health.com/sex/best-foreplay-for-women>
- Lindberg, L. D., Firestein, L., & Beavin, C. (2021). Trends in U.S. adolescent sexual behavior and contraceptive use, 2006-2019. *Contraception: X*, 3, 100064. <https://doi.org/10.1016/j.conx.2021.100064>
- Mahoney, M. C. (2021). Understanding college students perceptions of “what is sex”? *American Journal of Biomedical Science & Research*, 13(1), 9–15. <https://doi.org/10.34297/AJBSR.2021.13.001822>
- Makanju, A. O., Uriri, A. E., & Oniya, M. O. (2018). In a decade of sexual liberalism: Evidence of contraceptive accessibility and utilization prevalence among female undergraduate students in southwestern Nigeria. *Zaria Geographer*, 25(1), 86–103. <https://physicalsciences.abu.edu.ng/department/geography/public/journal/2018/08.php>
- Muse, W. (2015). *The 8 kind of masturbation*. Collegehumor. <http://www.collegehumor.com/post/7034684/6-kinds-of-masturbation>
- Nozid, N. R. C., Rostam, M. A., & Uzir, B. F. (2023). Psychological impacts of pornography exposure among university students in Pahang. *International Journal of Allied Health Sciences*, 7(2), 2909–2916. <https://doi.org/10.31436/ijahs.v7i2.780>
- O. Abolurin, O., Akinbajo, O., J. Daniel, O., O. Adekoya, A., E. Akinbajo, A., & O. Adekoya, A. (2024). Sexual behaviours and contraceptive use among undergraduates in a Nigerian University. *Ghana Medical Journal*, 58(2), 141–147. <https://doi.org/10.4314/gmj.v58i2.5>
- Ojewola, F. O., & Akinduyo, T. E. (2019). Prevalence of indecent dressing among University Undergraduates in Southwest, Nigeria. *Journal of Counselling and School Psychology*, 2(1), 1–18.
- Okesina, F. A., Hammed, A. O., Mustapha, M. L. A., & Saadu, Y. O. (2020). Sexual behaviours and contraceptive use among students of tertiary institutions in Kwara State. *The Journal of Positive Psychology and Counselling*, 5, 159–171. <https://uilspace.unilorin.edu.ng/items/777b1bd5-a075-4cec-aeb5-78af8f436ccf>
- Olajire, O. . (2016). *Assessment of pre-marital sexual behaviour of in-school adolescents in Ogbomoso, Oyo-State (Thesis)*. Ekiti State University.
- Olaleye, O. S. (2021). *Effects of social-media-delivered intervention on exposure to pornography and*

risky sexual behaviours among students of selected tertiary institutions in Oyo and Lagos states (Thesis). University of Ibadan.

- Olaseinde, O. B., Agbojo, A., Rauf, G., Olusola, O. J., & Ajayi, J. A. (2024). Influence of early exposure to pornographic contents on the emotional health of undergraduates in Select Tertiary Institutions in Osun State. *OALib*, *11*(04), 1–13. <https://doi.org/10.4236/oalib.1111426>
- Olose, E. O., Busari, C. O., Anake, G. A., Adubina, B. I., & Ogundare, T. (2021). Pornography addiction in a university undergraduate: A case report. *World Journal of Medical Sciences*, *18*(2), 97–102. <https://doi.org/10.5829/idosi.wjms.2021.97.102>
- Plannedparenthood. (n.d.). *Planned parenthood. Glossary A-Z*. Plannedparenthood. <https://www.plannedparenthood.org/learn/glossary>
- Promotion, N. C. for C. D. P. and H. (2023). *What works in schools: Sexual health education*. Cdv.Gov. <https://www.cdc.gov/healthyyouth/whatworks/what-works-sexual-health-education.htm>
- Rachakatla, V. K., Gattavali, R., & Nikitha, C. (2022). Problematic pornography use and attitude toward pornography among medical interns. *International Journal of Research in Psychiatry*, *2*(1), 18–22. <https://doi.org/10.22271/27891623.2022.v2.i1a.22>
- Sanni, T. A., Elegbede, O. E., Durowade, K. A., Adewoye, K., Ipinnimo, T. M., Alabi, A. K., Ibikunle, A., Olasehinde, O. K., Adeyanju, T. A., & Oni, O. B. (2022). Sexual debut, sexual education, abortion, awareness and prevalence of contraceptive among female undergraduates students in public and private universities in Ekiti State, Nigeria. *Cureus*, *14*(8), 1–9. <https://doi.org/10.7759/cureus.28237>
- Simon, W., & Gagnon, J. (2011). *Sexual conduct: The social sources of human sexuality*. Routledge.
- Simon, W., & Gagnon, J. H. (1986). Sexual scripts: Permanence and change. *Archives of Sexual Behavior*, *15*, 97–120. <https://doi.org/10.1007/BF01542219>
- Srahbzu, M., & Tirfeneh, E. (2020). Risky sexual behavior and associated factors among adolescents aged 15-19 years at governmental high schools in Aksum Town, Tigray, Ethiopia, 2019: An institution-based, cross-sectional study. *BioMed Research International*, *2020*, 1–8. <https://doi.org/10.1155/2020/3719845>
- Udo, I. A., & Amosu, A. (2020). Knowledge and behavioural skill as predictors of contraceptive-use among female undergraduates in a Tertiary Institution in Ogun State, Nigeria. *Texila International Journal Of Public Health*, *8*(3), 94–100. <https://doi.org/10.21522/TIJPH.2013.08.03.Art010>
- Utoo, B., Eka, P., Utoo, P., Unazi, E., & Maanongun, M. (2020). Sexual activity and contraceptive use among University Female Undergraduates in Makurdi, North-Central Nigeria. *Western Journal of Medical and Biomedical Sciences*, *1*(2), 132–138. <https://doi.org/10.46912/wjmbs.21>
- Whittaker, P. G., Merkh, R. D., Henry-Moss, D., & Hock-Long, L. (2010). Withdrawal attitudes and experiences: A qualitative perspective among young urban adults. *Perspectives on Sexual and Reproductive Health*, *42*(2), 102–109. [10.1363/4210210](https://doi.org/10.1363/4210210)
- Yoon, S., An, S., Noh, D. H., Tuan, L. T., & Lee, J. (2021). Effects of health education on adolescents' non-cognitive skills, life satisfaction and aspirations, and health-related quality of life: A cluster-randomized controlled trial in Vietnam. *PLOS ONE*, *16*(12), e0259000. <https://doi.org/10.1371/journal.pone.0259000>
- Zagoto, R. K., Silaen, M., & Panjaitan, I. M. (2021). Analysis of mixed method of the effect of dating status on sexual behavior in Adolescents Grade XI at SMA XYZ Medan. *Journal of Asian Multicultural Research for Medical and Health Science Study*, *2*(2), 45–53. <https://doi.org/10.47616/jamrmhss.v2i2.112>