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Research Article

Practices regarding modern contraceptive use among female students. A comparative study between the university of Zimbabwe and Chinhoyi university of technology, Zimbabwe

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Abstract

Modern contraceptive use prevents the risk of unplanned pregnancies, unsafe abortions and STIs. Yet little is known about the use of modern contraceptives by female students in tertiary institutions given that available studies have been using women in the reproductive age as the unit of analysis. The study was conducted at the University of Zimbabwe and the Chinhoyi University of Technology. The study triangulated quantitative and qualitative research methods. A survey with 770 female students, 537 from the University of Zimbabwe and 233 from the Chinhoyi University of Technology, to assess the magnitude of modern contraceptive use among female students and explore the facilitating and inhibiting factors underlying contraceptive use. Qualitative data were collected from eight face-to-face in-depth interviews, eight face-to-face focus group discussions and four face-to-face key informant interviews. Modern contraceptive use was high, 98%, however an insignificant variation was noted, 98% at UZ and 97% at CUT. Male condoms were commonly used by students throughout their sexual activities with marginal variations noted- 98% at UZ and 97% at CUT. Female students accessed contraceptives from the SAYWHAT resource centre although the prevalence was high among students at CUT, 95%, when compared to UZ students, 87%. Therefore the study recommends that the preferred modern contraceptives should be available and accessible to students. Information of safe sex practices should be disseminated to students to ensure consistency in contraceptive use. Contraceptive distribution points should be accessible to students to increase contraceptive uptake.

Introduction

Despite conferences that have been held on contraceptive use since 1965, female students in tertiary institutions are still facing challenges regarding contraceptive use mainly due to culture and religion which militate against contraceptive use, especially among youths. Efforts to have everyone enjoy their reproductive health rights, including the right to access and use contraception and, the right to responsible, safe and satisfying sex, have so far not yielded the desired results. Studies on knowledge, attitudes and practices regarding contraceptives have mainly focused on women in the reproductive age as the unit of analysis. While there is broad literature on contraceptive use among women in the reproductive age, there is a dearth of literature on contraceptive use among female students in tertiary institutions, a gap that

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the current study sought to fill. Globally, contraceptive use among women in the reproductive age is moderately low, 57% and 62% [1]. Regionally, contraceptive use among women in the reproductive age ranges between 24% and 62%, with the highest prevalence recorded in Latin America and the Caribbean [2]. The use of modern contraceptives among females aged 15-49 years in Zimbabwe has been increasing from 36% to 67% from 1988 to 2015 [3]. It should be noted that contraceptive use, among young females it is still considered taboo, because of its association with premarital sex and the notion that it promotes promiscuous behaviour among young females [4]. However, this narrow-minded thinking has left female students, especially in developing countries like Zimbabwe, vulnerable to reproductive health problems, including unplanned pregnancies, unsafe abortions, STIs and HIV. Therefore, exploring the level of contraceptive use and factors that influences contraceptive use among female students may guide tailoring of interventions aimed at increasing awareness of and also promote contraceptive use.

The discourse on contraceptive use can be traced back to the Belgrade 1965, the Bucharest 1974, the Mexico 1984, and the Cairo 1994 Population conferences. At the Belgrade Conference, the introduction of contraceptive use was aimed at reducing fertility in order to foster development. At the Bucharest Conference, contraceptive use was regarded as the panacea for all population problems. Similarly, at the Mexican Conference, many countries advocated and promoted contraceptive use while at the same time taking on board the socio-cultural context to which fertility occurs. The declining fertility accompanied by the increase in mortality due to HIV and AIDS culminated in the 1994 Cairo International Conference on Population and Development (ICPD). It is important to note that the 1994 ICPD was a landmark conference which changed the discourse of fertility to reproductive health. Among other deliverables, delegates at the conference advocated that everyone should enjoy reproductive health rights, including the right to safe and satisfying sex, the right to reproduce, and the freedom to decide if, when, and how often to do so. The right to reproductive and sexual health also include: the right to access reproductive health information and services; safe motherhood; and, the right to non-discrimination in the allocation of resources to health services in their availability and accessibility [5]. The Millennium Development Goals (MDGs) of 2000, the Sustainable Development Goals (SDGs) of 2012, and the International Conference on Family Planning of 2018, also advocated for universal access to contraceptives. Regionally, policies on contraceptives, including the Maputo Plan of Action of 2006 and the Family Planning of 2020, were implemented in line with the goals of the ICPD of 1994 (*ibid*). However, the extent to which the reproductive health rights are enjoyed by young people, especially female students in tertiary institutions, who are mostly never married, is still a grey area. This could be largely because culture is generally against contraceptive use given its association with premarital sex [5]. Such attitudes act as a barrier to access to information on contraceptives and the associated benefits of using contraception [6].

In Zimbabwe, policies and programmes on contraceptives have been introduced. The Zimbabwe National Family Planning Council (ZNFPC), the Zimbabwe National Reproductive Health Policy of 2012, and the National Adolescent and Youth Sexual Reproductive Health (2010-2015), were introduced to ensure that everyone enjoys reproductive health rights which include, inter alia, the right to safe and satisfying sex, as well as access to reproductive health information and services [7]. However, young females are not enjoying these rights because contraceptive use is currently associated with married women [8]. Accessibility to contraceptives is still a challenge because society disapproves premarital sex and seeking contraceptives from public health facilities is a public admission of having sex [4]. There is a grey area in research, especially on the extent of the uptake of contraceptives by female students in Zimbabwe. In addition, there is a dearth of scholarly literature regarding information on the accessibility, affordability and availability of contraceptives at UZ and CUT, a gap the current study sought to fill.

Methodology

Female students aged 20 to 35 years, undertaking studies at the University of Zimbabwe and the Chinhoyi University of Technology, were the target population. The study specifically focused on female students aged 20 and 35. The lower age limit was set at 20 years, to ensure that first year students participate in the study. The upper age limit was set at 35 years, to ensure that female students who had enrolled for postgraduate can also participate in the study.

Study area

The study was conducted at UZ and CUT. The University of Zimbabwe was purposively selected because it is the oldest higher tertiary institutions in the country, and it was envisaged that its comparison with an emerging institution like the Chinhoyi University of Technology would show the differences in contraceptive use between the two institutions. The two universities were also selected because they accommodate students from different cultural backgrounds and religious affiliation. Also, there is a dearth of research which focuses on modern contraceptive use among female students in tertiary institutions in Zimbabwe.

Research design

The study triangulated qualitative and quantitative research methods. A survey, using a questionnaire, was conducted to quantify the magnitude of modern contraceptive use among female students in the two universities. Key informant interviews were undertaken to provide qualitative data on the availability and accessibility of contraceptives to female students. In-depth interviews were conducted with selected female students. The in-depth interviews helped solicit experiential information on female students' personal experiences on modern contraceptive use, and to also establish the underlying factors which influence contraceptive use. Focus group discussions helped to solicit data about a group generated perspective regarding the female students' modern

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contraceptive use and the factors that influence modern contraceptive use. It is important to note that key informant interviews and in-depth interviews were used as a follow-up for validation of issues raised from the survey. Data were quantitatively analysed using the Statistical Package for Social Studies (SPSS) Version 20, while thematic analysis was used for qualitative data.

Data collection methods and tools

Survey: A survey, using a questionnaire, was carried out with 770 female students aged between 20 and 35 years at UZ and CUT. The survey was undertaken to quantify the magnitude of modern contraceptive use among female students.

Sample size determination

The sample was estimated using the following formula: $n_a = [(z^2_{1-a/2}\pi(1-\pi)/d^2) * (DEFF*2)/(1-NR)]$ where: n_a is the minimum adjusted target sample size, $z^2_{1-a/2}$ is the standard normal deviate set at 1.96 which corresponds with 95% confidence intervals; π is the proportion of the target population, female students at the University of Zimbabwe and the Chinhoyi University of Technology; $1-\pi$ is the proportion of the total population excluding the target population; and, d^2 is the error margin set at 0.05. DEFF is the design effect and NR is the non-response rate. Given that the total student population at CUT and UZ is 7100 and 14576 respectively, the population for females aged 20-35 years at CUT and UZ is 3171 and 7322, respectively. Therefore the following calculations were used to obtain the sample size for the University of Zimbabwe and the Chinhoyi University of Technology, respectively: $(1.96^2*0.48*0.52)/0.05^2 = 457$. The sample size was then adjusted using the design effect. A design effect of 0.8 was adopted in line with previous studies whose prevalences were ranging from 25% to 30%. The following calculations were used to obtain the adjusted sample size for UZ and CUT, respectively: [(0.8*457 *2)/(1-0.05)]= 770. The probability to proportional sample size was used to calculate the number of participants from CUT and UZ using the formulas: [(3171/10493*770)=233], [(7233/10493*770= 537)].

Sampling procedure

A multistage sampling technique was used. The first stage was the selection of all faculties at the University of Zimbabwe and all units at Chinhoyi University of Technology. This was done to ensure that all University faculties were equally represented. Respondents were selected from all ten faculties at the University of Zimbabwe and nine schools from the Chinhoyi University of Technology. A probability of proportional size ($N_h/N*n$) was used to determine the number of female students from each faculty and schools at UZ and CUT, respectively; where N_h is the number of female students per faculty, N is the total number of female students in all ten faculties, and n is the sample size. Given that the total number of female students from the Faculty of Social Studies is 2010, and the total number of female students at the University of Zimbabwe is 7322, the calculation of female students selected from the Faculty of Social Studies is (2010/7322*533) =147 (Table 1). A list of names from each faculty was used to select eligible respondents. Systematic sampling was used to select respondents from each faculty. The sampling interval was calculated using the formula: k= N/n where N is the total population of female students at the University of Zimbabwe and the Chinhoyi University of Technology, n is the sample size and k is the sampling interval. A random number was selected between 1 and the sampling interval and added to the sampling interval. The process was repeated to select subsequent respondents until the sample size was reached. The distribution of the selected respondents at UZ and CUT are shown on Table 1.

In-Depth Interviews (IDIs)

Eight face-to-face in-depth interviews, using (an in-depth interview guide) were undertaken with female students who had used contraceptives. Four in-depth interviews were conducted at each university. The first participant was identified from the survey. Snowballing, availability and willingness to participate were further utilised for the identification of contraceptive users. The in-depth interviews helped solicit information about personal experiences on modern contraceptive use. The participants also provided information on factors that influences contraceptive use. The researcher carried out the in-depth interviews. In addition, to extensive note taking, were audio recordings using a phone.

Table 1: Distribution of number of students sampled at UZ and CUT, by faculty and school.

Faculty (UZ)	Number of Female Students	Sampled Female Students
Agriculture	179	13
Arts	1045	77
Commerce	1145	84
College of Health Science	1053	77
Education	475	35
Engineering	115	8
Law	456	33
Science	733	55
Social Studies	2010	147
Vet Science	111	8
Total	7322	537
The School (CUT)		
Agricultural-Sciences and Technology	349	26
Business Science Management	1997	147
Engineering Sciences	215	16
Hospitality and Tourism	235	17
Art and Design	307	23
Wildlife, Ecology, and Conservation	32	2
Lifelong and Learning	3	0
Teaching and Learning	15	1
Natural Sciences and Mathematics	18	1
Total	3171	233

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Key Informant Interviews (KIIs)

Four face-to-face key informant interviews were conducted. A key informant interview guide was the instrument used to collect data. The key informants were the sister-in-charge at UZ and CUT and the Saywhat representatives from the two universities. The key informants were purposively selected because they interact with the target population almost daily. They provided information on the availability of contraceptives at the Students' Clinics and the Saywhat Resource Centre. They also provided statistical information on the number of students who visit the Students' Clinics, in addition to providing the key recommendations of the study. The researcher conducted the key informant interviews and recorded data by taking notes and also through phone recordings.

Focus Group Discussions (FGDs)

Eight focus group discussions were conducted with female students from both institutions. Four FGDs were conducted at each university. A focus group discussion guide was used to collect data from the respondents. Focus group discussions helped to solicit data about a group generated perspective regarding the female students' modern contraceptive use and the factors that influence modern contraceptive use. Convenient sampling and willingness to participate was used as the basis for the respondents' selection. Eight to 12 participants were chosen for each focus group discussion to enhance an open discussion. The researcher conducted focus group discussions by taking notes and also through phone recordings.

Data Management and Analysis

Quantitative data: Quantitative data was captured using a software package, Statistical Package for the Social Studies (SPSS). Data cleaning was done by checking data completeness. Incorrect and missing entries were identified and re-entered. The study used univariate, bivariate and multivariate analyses. Univariate analysis was used to describe the frequency distribution of the participants and their background characteristics. Univariate analysis was also used to quantify the magnitude of modern contraceptive use among female students through frequency distributions. The bivariate analysis (using the Chi Square) was used to establish the relationship between the independent and dependent variables. Multivariate analysis using binary logistic regression models was conducted to determine factors contributing to modern contraceptive use among female students.

Qualitative data: Audio recordings from in-depth interviews, key informant interviews and FGDs were transcribed and analysed using the thematic approach. The thematic analysis followed six steps. Firstly, the researcher listened to the audio recordings and also went through the field notes to produce the meaning and facilitate critical reflection. The second step was the generation of initial codes. The selection of themes and subthemes was the third stage. Reviewing the themes and drawing a thematic map followed. The fifth stage was defining and naming potential themes within the data. The last stage was generating a report relating to the study.

Ethical consideration

The research was approved by the Centre for Population Studies at the University of Zimbabwe and the Deputy Registrar at the Chinhoyi University of Technology. Prior to the research, the researcher ensured that the students voluntarily participated. To achieve this, the students were told about the objectives of the study, the role they were expected to play, the potential risk and benefits of the study. The researcher ensured that the information from the study remained confidential, private and anonymous. The participants had the right to withdraw from the study at any time. They could choose not to answer certain questions. After agreeing, the participants signed the consent form.

Results

The majority of the respondents, 83%, reported that they were aged between 20 and 24 years (Table 2). Respondents aged between 25 and 29 years constituted 16% of the sample. A small proportion, 2%, of the respondents, reported that they were aged between 30 and 34 years. The majority of the respondents, 98%, reported that they were never married. Only 2% of the respondents reported that they were married. A significant proportion of the respondents, 36%, reported that they were in the fourth year of study. A considerable proportion of the respondents, 24%, reported that they were in the second year of study. About one-fifth of the respondents reported that they were in the first year of study. A sizeable proportion of the respondents, 13%, reported that they were in the third year of study. Respondents who reported that they were registered for a Master's programme constituted 7% of the sample. Less than 1% of the respondents reported that they were in the fifth year of study.

The sample was characterised by Christians. The majority of the respondents, 87%, reported that they were Christians. However, a significant proportion of the respondents, 33%, reported that they were Pentecostal believers. A considerable proportion of the respondents, 26%, reported that they were Catholics. A sizeable proportion of the respondents, 14%, reported that they were apostolic believers. Respondents who belonged to the Seventh-Day Adventist Church and the Anglican Church constituted 11% each of the respondents. A small proportion, 4%, of the respondents, reported that they were Islamic believers. A proportion of less than 1% reported that they belonged to the African Traditional Religion.

Respondents from UZ constituted 70% of the sample, while 30% of the respondents were from CUT. The sample was characterized by unemployed respondents. The majority of the respondents, 98%, reported that they were unemployed students. Only 2% of the respondents reported that they were formally employed. Respondents were further asked about their sources of income. The majority of the respondents, 90%, reported that they survive on pocket money from their parents or guardians. A small proportion of the respondents, 5%, reported that they get money from blesser-boyfriends[1].

[1]Blesser-boyfriends- older men who have sex with university students in exchange for material support.

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Table 2: Percentage distribution of the respondents' demographic and socio-economic status.

Demographic characteristics	Percent
Age group	
20-24	82.8
25-29	15.6
30-34	1.6
Total	100.0
Marital status	
Single/never married	97.7
Married	2.3
Total	100.0
Level of education	
First-year	20.4
Second-year	23.6
Third-year	12.7
Fourth-year	36.1
Fifth-year	0.4
Masters	6.8
Total	100.0
Religion	
Catholic	25.8
Pentecostal	33.4
Apostolic	14.4
Seventh-Day Adventist	11.3
Anglican	10.6
Islam	4.4
African Traditional Religion	0.1
Total	100.0
Living arrangements	
Living with both parents	26.4
Living with one parent	32.1
Living with a relative	39.2
Living with a husband	2.3
Total	100.0
University	
University of Zimbabwe	69.7
Chinhoyi University of Technology	30.3
Total	100.0
Occupation	
Student	97.5
Formal employment	2.5
Total	100.0
Source of livelihood	
Pocket money from parents or guardian	90.3
Salary	2.5
blesser-boyfriends	4.9
Money from husbands	2.3
Total	100.0
n=770	

About 3% of the respondents reported that they rely on a salary as their source of income. An insignificant proportion of the respondents, 2%, reported that they get money from their husbands.

The demographic and socio-economic factors were further analysed using the binary logistic regression model. The demographic and socio-economic factors were associated with age group (p<0.001), marital status (p=0.05) and level of education [(p=0.05) (Table 3)]. Respondents at CUT were 3 times more likely to be aged 25-29 years when compared to 2 times at UZ (OR=2.5; 95% CI= [(1.82-3.17)]. Similarly, respondents at CUT were almost 2 times more likely to be aged 30-34 years when compared to 1.2 times at UZ (OR=1.8; 95% CI= [(0.98-2.36)].

Analysis by level of education revealed that respondents at CUT were 5 times more likely to be Master's students when compared to their counterparts at UZ (OR=5.2; 95% CI= [(3.63-6.92)]. Consistently, respondents at CUT were 4.1 times more likely to be Fifth-year students when compared to 3.4 times at UZ (OR= 4.1; 95%= [(3.49-5.14)]. Similarly, respondents at CUT were 3.6 times more likely to be Fourth-year students when compared to 2.8 times at UZ (OR=3.6; 95% CI= [(2.98-4.82). Likewise, respondents at CUT almost 4 times more likely to be Third-year students when compared to 2.1 times at UZ (OR= 2.55; 95% CI= [(2.55-4.48)].

Analysis by living arrangements demonstrated that while respondents at UZ were 4 times more likely to be living with relatives, respondents with the same living arrangements at CUT were 2.3 times more likely to report the same (OR=3.6; 95% CI= [(2.16-4.65)]. Similarly, respondents at UZ were 2.6 times more likely to be living with their husbands when compared to 1.9 times at CUT (OR=2.6; 95% CI= [(1.53-3.09)]. Respondents at CUT were 2 times more likely to report living with one parent when compared to 1.1 times at UZ (OR=2.3; 95% CI= [(1.59-3.13)].

Correct and consistent use of modern contraceptives prevents unplanned pregnancies and the chances of contracting STIs including HIV. The respondents were asked whether or not they had ever used modern contraceptives. The majority of the respondents, 98%, reported that they had used modern contraceptives although female students at UZ were more likely to have used modern contraceptives, 98% when compared to their counterparts at CUT, 97% (Table 4). Using modern contraceptives was strongly associated with age (p=0.001),

Table 3: Demographic and socio-economic factors by background variables.

Background variables	University of Zimbabwe			Chinhoyi University of Technology		
	Exp(B)	95% CI for Exp(B)		Exp(B)	95% CI for Exp(B)	
		Lower	Upper		Lower	Upper
Age group						
20-24	1.00			1.00		
25-29	2.016***	1.54	2.69	2.513***	1.82	3.17
30-34	1.237***	0.69	1.71	1.789***	0.98	2.36
Marital status						
Married	1.00			1.00		
Never married	2.449**	1.44	3.72	1.392**	0.88	3.04
Level of education						
First-year	1.00			1.00		
Second-year	1.701**	1.08	2.02	2.231**	1.27	2.59
Third-year	2.129**	1.23	3.91	3.467**	2.55	4.48
Fourth-year	2.829**	2.04	4.46	3.632**	2.98	4.82
Fifth-year	3.411**	1.96	5.23	4.129**	3.49	5.14
Master's	3.514**	1.34	4.51	5.236**	3.63	6.92
Living arrangements						
Living with both parents	1.00			1.00		
Living with one parent	1.139*	0.33	1.97	2.321*	1.59	3.13
Staying with relative	3.594*	2.16	4.65	2.347*	2.43	2.62
Living with husband	2.596*	1.53	3.09	1.874*	0.86	2.67
Total	69.7			30.3		
	100.0					
N=660 *** P-value <0.001 ** P-value =0.001						

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marital status (p<0.05), the level education (p<0.001), and university (p<0.001). While using modern contraceptives was reported across age group, respondents aged 30-34 years were more likely to use modern contraceptives, 97%, when compared to respondents aged 20-24 years, 84%. The married respondents were more likely to report using modern contraceptives, 96%, when compared to the never married respondents, 85%. Master's students were more likely to use modern contraceptives, 97%, when compared to First-year students, 85%. Although using modern contraceptives was reported in both universities little variations were noted. For example, respondents at UZ were more likely to use modern contraceptives, 98%, when compared to respondents at CUT, 97%.

Further analysis using binary logistic regression models revealed that using modern contraceptives was strongly associated with age (p=0.001), marital status (p<0.05), and the level education [(p<0.001) (Table 5)]. Having used modern contraceptives was positively associated with age, although respondents at CUT were more likely to have used modern contraceptives when compared to respondents at UZ. For instance, while the respondents aged 30-34 years at CUT were 4 times more likely to have used modern contraceptives, respondents in the same age group at UZ were 2.9 times more likely to report the same (OR=2.6; 95% CI= [(2.45-4.76)].

Table 4: Percentage distribution of the respondents who had used modern contraceptives, by background variables.

Background Variables	Percent	P-value
Age group		
20-24	83.6	0.001
25-29	90.6	
30-34	97.3	
Marital status		
Never married	84.6	0.05
Married	96.4	
Level of education		
First-year	84.6	0.000
Second-year	87.4	
Third-year	88.9	
Fourth-year	91.4	
Fifth-year	95.7	
Master's	96.8	
Religion		
Catholic	97.2	0.935 (N/S)
Protestant	89.4	
Pentecostal	87.6	
Apostolic	72.9	
Seventh-Day Adventist	89.9	
Anglican	95.4	
Islam	72.8	
African Traditional Religion	52.5	
Living arrangements		
Living with both parents	97.8	0.167 (N/S)
Living with one parent	90.8	
Living with a relative	88.2	
Living with a husband	85.4	
University		
University of Zimbabwe	98.1	0.000
Chinhoyi University of Technology	96.5	
Total	97.8	

N=697

Table 5: Ever used modern contraceptives by background variables.

Background variables	University of Zimbabwe			Chinhoyi University of Technology		
	Exp(B)	95% CI for Exp(B)		Expc(B)	95% CI for Exp(B)	
		Lower	Upper		Lower	Upper
Age group						
20-24	1.00			1.00		
25-29	1.893**	1.25	2.73	2.591**	1.89	3.94
30-34	2.910**	1.93	4.61	4.012**	2.45	4.76
Marital status						
Married	1.00			1.00		
Never married	3.562*	1.03	5.39	2.897*	0.59	3.62
Level of education						
First-year	1.00			1.00		
Second-year	1.492***	0.46	3.41	1.593***	1.29	2.93
Third-year	1.632***	1.21	2.97	1.252***	0.68	2.06
Fourth-year	2.502***	1.94	3.06	2.043***	1.71	2.45
Fifth-year	3.021***	2.05	4.92	2.124***	1.98	2.91
Masters	4.236***	2.56	5.08	3.102***	2.21	4.94
Total	98.1			96.5		
	97.8					

N= 697 *** P-value <0.001 ** P-value =0.001 * P-value = 0.05

Analysis by marital status, revealed that the chances of using modern contraceptives were 4 times among the never married respondents at UZ when compared to 2.8 times at CUT (OR=3.5; 95% CI= [(1.03-5.39)].

Using contraceptives were positively associated with education although respondents at UZ were more likely to use modern contraceptives when compared to respondents at CUT. For instance, while Masters students at UZ were 4 times more likely to report using modern contraceptives, respondents at the same level of education at CUT were 3.1 times more likely to report the same (OR=4.2; 95% CI= [(2.56-5.08)]. Consistently, the odds of using modern contraceptives among fifth-year students at UZ were 3 times higher when compared to 2.1 times at CUT (OR=3.0; 95% CI= [(2.05-4.92)]. Similarly, the odds of using modern contraceptives among fourth-year students at UZ were 3 times high when compared to 2 times at CUT (OR=2.5; 95% CI=[(1.94-3.06)]. Likewise, the odds of having used modern contraceptives among third-year students at UZ were 1.6 times higher when compared to 1.3 times at CUT (OR=1.6; 95% CI=[(1.21-2.97)].

Correct and consistent use of modern contraceptives reduces the exposure to unwanted pregnancies, STIs and HIV. The respondents were asked about the types of modern contraceptives they have used. The study established that male condoms were commonly used. The majority of the respondents, 98%, reported using male condoms (Table 6). Another large proportion of the respondents, 81%, reported using emergency pills. A significant proportion of the respondents, 51%, reported injectables. More than one-third of the respondents, 38%, reported using oral pills. About 18% reported female condoms. Nevertheless, further analysis by university revealed that respondents at UZ were more likely to use male condoms, female condoms and oral pills when compared to respondents at CUT. For instance, while 98% of the respondents at UZ reported using male condoms, 97% of the respondents at CUT reported the same. Consistently,

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Table 6: Percentage distribution of the types of modern contraceptives used by the respondents, by university.

Types of modern contraceptives used	Percent			P-value
	UZ	CUT	Total	
IUD	0.0	0.0	0.0	0.000
Oral pills	18.6	12.8	15.7	
Injectables	44.3	57.9	51.1	
Female condoms	39.8	35.6	37.7	
Male condoms	98.2	97.1	98.4	
Diaphragm	0.0	0.0	0.0	
Emergency pills	75.3	95.3	81.2	
Sterilization	0.0	0.0	0.0	
Foams	0.0	0.0	0.0	
Spermicides	0.0	0.0	0.0	
Vaginal rings	0.0	0.0	0.0	

N=697

respondents at UZ were also more likely to report that they had used female condoms, (40%) when compared to respondents at CUT (36%). Respondents at UZ were also more likely to report that they had used oral pills (19%) when compared to respondents at CUT (13%). However, respondents at CUT were more likely to report that they had used emergency pills and injectables when compared to respondents at UZ. For example, respondents at CUT were more likely to report that they had used emergency pills (95%) when compared to respondents at UZ (75%). Similarly, respondents at CUT were more likely to report that they had used injectables (58%) when compared to respondents at UZ (44%).

Qualitative data revealed that while students were using modern contraceptives, they were more worried about the need to prevent pregnancies than preventing STIs and HIV. Thus, the burden of looking after a child was reported as the main underlying cause for condom use. Note the remark from one of the participants at CUT with students aged 20-24 years whose response received resounding support from fellow discussants:

True, we use contraceptives to avoid unwanted pregnancies. Looking after a child, more so if you are a student and not employed, is a burden on its own. In most cases, men normally deny responsibility, starting from the pregnancy itself.

Another participant, during a FGD at UZ with the students aged 20-24 years, concurred by saying:

We use condoms to prevent unwanted pregnancies since we are not yet economically stable to cater for children's needs. Since we are still in school we cannot afford to have that kind of a burden.

While contraceptives were commonly used, participants from the two universities also highlighted the challenges they face regarding contraceptive use. For instance, during FGDs, they argued that contraceptives such as condoms reduce the pleasure associated with sex. Note the remark, which was supported by fellow group discussant, from one of the participants at UZ during a FGD with students aged 20-24 years:

We prefer 'raw sex'. Though we use condoms, we know that they reduce sexual pleasure.

Another participant, during a FGD conducted at CUT with students aged 20-24 years, made the following comment:

Condoms reduce the pleasure of having sex because one cannot feel the male reproductive health organ.

The view that partners may refuse to use male condoms was commonly reported as another inhibiting factor to condom use across the two universities. During FGDs, participants argued that their partners usually highlight that the use of condoms shows a lack of trust. Note the remark from one of the participants during a FGD at UZ with students aged 20-24 years:

We dread using condoms because they result in unnecessary tension which is often detrimental to the relationship. Our sexual partners are against the use of condoms. They sometimes argue that condoms are a clear indication of a lack of trust between the partners.

Lack of knowledge and the subsequent challenges associated with the insertion of the female condom were also noted as another inhibiting factor to its use. During FGDs across the two universities, participants complained about the difficulty of placing the female condom in the vagina because of its slipperiness. Note the following complaint from one of the participants during the 25-29 years FGD at CUT who received resounding support from fellow discussants:

We do not want to use the female condom. It is difficult to place into the vagina. Female condoms are very slippery because of the lubricant and it makes it difficult for us to wear them.

During a FGD at UZ, participants aged 25-29 years, also had this to say:

Some students prefer not to use female condoms because they cannot properly place them inside the vagina. After all, it requires someone who has adequate knowledge on how to effectively put the device into the vagina.

The study revealed that religion was another factor that inhibited the use of modern contraceptives in general. During FGDs, some participants argued that using modern contraceptives is in defiance to God's command that humans should be fruitful and multiply. Note the following comment from one of the participants during a FGD at UZ with students aged 20-24 years:

Christians are very strict about using modern contraceptives, especially condoms, because they see it as being tantamount to murder. Also, it defies God's command that humans should be fruitful and multiply, as stated in Genesis 1 verse 26, Genesis 22 verse 17, and Leviticus 26 verse 9.

The study also revealed that students rarely use oral pills, because they require cautiousness. During FGDs, participants revealed that it is possible to forget to take oral pills. Note the following remark from one of the participants during a FGD with students aged 25-29 years at CUT:

We rarely use oral pills because they should be taken every day, and there is a danger of forgetting to take them, which might result in pregnancy.

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Participants who used oral pills also indicated that they do not only use oral pills to prevent unwanted pregnancies, but to relieve period pains as well. Note the following comment from one of the participants during a FGD with students aged 25-29 years at UZ who received support from fellow discussants:

We also use oral pills to relieve period pains and to delay menstruation.

Participants revealed that they use injectables because they are convenient. During FGDs with students aged 20-24 years at CUT, participants reported that they use injectables because they are guaranteed from falling pregnant within a specific time frame. Note the following remark:

We use injectables because they allow us to have at least three months to prevent pregnancies.

While some participants reported that injectables were convenient, other participants revealed that they cannot use injectables because they might cause infertility. During FGDs, participants reported that they do not use injectables because they might cause harm to the womb. Note the following comment from one of the participants during a FGD at UZ with students aged 25-29 years:

We do not use injectables because they might cause harm to the womb, and this might result in infertility.

Sources of contraceptives facilitate utilisation of contraceptives. The study further assessed sources of contraceptives. The majority of the sexually active respondents, 91%, reported that they get contraceptives from the SAYWHAT Resource Centre (Table 7). Another large proportion of the respondents, 85%, reported friends as a source. More than four-fifths of the respondents, 81%, reported that they get contraceptives from unauthorised dealers[2] at campus. The pharmacy was reported by 78% of the respondents. About 65% of the respondents reported that they obtain contraceptives from the university students' clinic. Public toilets were reported by 18% of the respondents. Only 2% of the respondents reported obtaining contraceptives from relatives. Further analysis by university revealed that although the SAYWHAT Resource Centre was commonly reported by both universities, respondents at CUT were more likely to report the Centre (95%) when compared to respondents at UZ (87%). Furthermore, respondents at CUT were more likely to report that they get contraceptives from friends (88%) when compared to respondents at UZ (82%). Respondents at CUT were also more likely to report unauthorised dealers as their source (87%) when compared to respondents at UZ (84%). While 76% of respondents from CUT reported that they get contraceptives from the university clinic, 76% of the respondents at UZ reported the same. Respondents at CUT were also more likely to report relatives as sources of contraception (3%) when compared to respondents at UZ (1%). Respondents at UZ were, however, more likely to report that they get contraceptives from pharmacies (79%) when compared to respondents at CUT (77%).

Table 7: Percentage distribution of the respondents' sources of contraceptives, by university.

Sources of contraceptives	Percent			P-value
	UZ	CUT	Total	
University Students' Clinic	54.6	75.9	65.1	0.000
Pharmacy	78.5	77.2	77.9	
Friends	82.4	87.8	85.1	
Public toilets	20.3	14.7	17.8	
Relatives	0.9	2.6	1.8	
SAYWHAT Resources Centre	87.3	94.9	91.1	
Unauthorised dealers	84.2	86.9	80.6	
N=725				

[2]Students who sell emergency pills illegally on campus.

Qualitative data revealed that participants get condoms from the SAYWHAT Resource Centre. During FGDs, participants revealed that the service providers at the Resource Centre are friendly. Note the following comment from one of the participants during a FGD at CUT with students aged 20-24 years:

We also prefer going to the Centre because the service providers are very friendly.

Another participant, during a FGD at CUT with students aged 20-24 years, also reported:

We prefer collecting condoms from the SAYWHAT Resource Centre because the Centre is at Hostel Y where we can freely collect the condoms.

The view that students collect condoms freely at the Resource Centre was also echoed during a FGD at UZ with students aged 20-24 years. Note the following comment:

We prefer going to the SAYWHAT Resource Centre at the Manfred Common Room because we collect condoms freely there.

Friends were also commonly reported by the participants as sources of contraceptives. During FGDs, participants revealed that they feel embarrassed to be seen collecting contraceptives from formal distribution points. Note the remark from one of the participants during a FGD with students aged 25-29 years at UZ:

We collect condoms from our friends. We feel embarrassed to collect condoms from the clinic because we will be publicly admitting that we are having sex.

However, some students reported that they prefer getting condoms at the University Students' Clinic. During FGDs at CUT, participants reported that they prefer getting condoms from the University Clinic because those obtainable from the hostels are sometimes pierced by fellow students. Note the following comment from one of the participants during a FGD at CUT with students aged 20-24 years:

We prefer collecting condoms from the University Clinic because they would not have been tampered with. Some students pierce condoms at the hostels and this is dangerous.

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Another participant during a FGD with students aged 20-24 years also had this to say:

We also prefer getting condoms from the clinic because they are strategically placed behind a scale, so no one will see you collecting them.

During FGDs, participants reported that they get emergency pills from unauthorised dealers because they are cheaper than buying from the pharmacy. Note the following remark from one of the participants during a FGD with students aged 20-24 years at CUT:

We get emergency pills from unauthorised dealers because they are cheap. We buy the pills for 2 USD unlike at the pharmacy where they go for 3 USD or more.

Another participant, during a FGD at UZ with students aged 20-24 years, also made the following comment:

We prefer getting emergency pills from unauthorised dealers because they are always available. We cannot get emergency pills from the University Clinic and we cannot afford to go to the pharmacy because they are expensive there. We can only depend on these unauthorised dealers.

Contrary to this view, some of the participants reported that they get emergency pills from the pharmacy because they are guaranteed that the pills would not have expired. Note the following comment from one of the participants during a FGD with students aged 20-24 years at CUT:

We prefer buying emergency pills from pharmacies because we fear that the pills being sold on campus would have expired.

The first sexual encounter also exposes students to STIs including HIV and unplanned pregnancies. The study further assessed whether or not respondents had used contraceptives during the first sexual encounter. The majority of respondents, 97%, reported that they used contraceptives during the first sexual encounter (Table 8). Female students at CUT were more likely to have used contraceptives during the first sexual encounter (98%) when compared to students at UZ (96%). Having used contraceptives during the first sexual encounter was significantly associated with age group (p<0.001), the level of education (p=0.001) and university (p<0.001). A positive relationship was noted between age and using modern contraceptives during the first sexual encounter. For example, while 98% of the respondents aged 30-34 years reported using modern contraceptives during the first sexual encounter, 92% of the respondents aged 20-24 years were more likely to report the same. The never married respondents were more likely to have used modern contraceptives during the first sexual encounter 94% when compared to the married respondents, 30%. A positive relationship was noted between level of education and using modern contraceptives during the first sexual encounter. For instance, while 97% of Master's students reported using modern contraceptives during the first sexual encounter, 88% of First-year students reported the same. While using modern contraceptives during the first sexual encounter was reported across universities, marginal variations were noted. For example, respondents at CUT were more likely to have used modern contraceptives during the first sexual encounter, 98%, when compared to respondents at UZ, 96%.

Table 8: Percentage distribution of the respondents who had used modern contraceptives during the first sexual encounter, by background variables.

Background Variables	Percent	P-value
Age group		
20-24	92.3	0.001
25-29	96.9	
30-34	98.4	
Marital status		
Never married	93.9	0.000
Married	30.2	
Level of education		
First-year	88.4	0.000
Second-year	90.3	
Third-year	92.7	
Fourth-year	93.4	
Fifth-year	95.7	
Master's	97.2	
Religion		
Catholic	88.2	0.935 (N/S)
Protestant	91.4	
Pentecostal	92.9	
Apostolic	15.8	
Seventh-Day Adventist	89.0	
Anglican	89.7	
Islam	8.1	
African Traditional Religion	0.1	
Living arrangements		
Living with both parents	97.6	0.167 (N/S)
Living with one parent	95.7	
Living with a relative	94.8	
Living with a husband	93.1	
University		
University of Zimbabwe	95.6	0.000
Chinhoyi University of Technology	98.2	
Total	96.9	

N=650

Analysis using the binary logistic regression models revealed that having used contraceptives during the first sexual encounter was significantly associated with age group (p<0.001) and the level of education [(p=0.001) (Table 9)]. The use of contraceptives during the first sexual encounter was positively associated with age, although respondents at UZ were more likely to have used contraceptives during the first sexual encounter when compared to respondents at CUT. For instance, while respondents aged 30-34 years at UZ were 3 times more likely to have used contraceptives during the first sexual encounter, respondents in the same age group at CUT were only 2.4 times more likely to report the same (OR=2.8; 95% CI= [(1.26-3.67)].

Analysis by level of education revealed that respondents at CUT were more likely to have used contraceptives during the first sexual encounter when compared to respondents at UZ. For instance, while fourth-year students at CUT were 4 times more likely to report using contraceptives during the first sexual encounter, respondents at the same level of education at the UZ were 2.4 times more likely to report the same (OR=3.8; 95% CI= [(2.91-4.07)]. Consistently, the odds of

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using contraceptives during the first sexual encounter among fifth-year students at CUT were 2.9 times when compared to 2.1 times at UZ (OR=2.9; 95% CI= [(2.55-3.94)]. Similarly, the odds of using contraceptives during the first sexual encounter among third-year students at CUT were 2.8 times when compared to 1.9 times at the UZ (OR=2.8; 95% CI= [(1.04-3.51). Likewise, the chances of using contraceptives during the first sexual encounter among second-year students at CUT were 2.4 times when compared 1.2 times at UZ (OR=2.4; 95% CI= [(1.53-2.90)].

The respondents were further asked to report the types of contraceptives they had used during the first sexual encounter. The study noted that male condoms were the most commonly used method of contraception. The majority of the respondents, 97%, reported that they had used male condoms during the first sexual encounter (Table 10). A large proportion of the respondents, 91%, reported having used emergency pills. About 72% of the respondents reported that they had used the withdrawal method. Oral pills were reported by 16% of the respondents. Only 2% of the respondents reported that they had used female condoms. None of the respondents reported ever using IUD, diaphragm, sterilisation, injectables, foams, vaginal rings, spermicides, the ovulation method, lactational amenorrhea and periodic abstinence. Nonetheless, further analysis by university revealed that respondents at CUT were more likely to report male condoms, emergency pills and oral pills when compared to respondents at UZ, although little variations were noted. For instance, while 98% of the respondents at CUT reported using male condoms, 96% of the respondents at UZ reported the same. Consistently, respondents at CUT were also more likely to have used emergency pills (93%) when compared to respondents at UZ (89%). Similarly, while 19% of the respondents at CUT were more likely to have used oral pills, only 14% of respondents at UZ reported the same. However, while 74% of respondents at UZ reported the withdrawal method, 69% of respondents at CUT reported the same. Similarly, respondents at UZ were also more likely to have used female condoms (2%) when compared to respondents at CUT (1%).

Table 9: Ever using contraceptives during the first sexual encounter by background variables.

Background variables	University of Zimbabwe			Chinhoyi University of Technology		
	Exp(B)	95% CI for Exp(B)		Exp(B)	95% CI for Exp(B)	
		Lower	Upper		Lower	Upper
Age group						
20-24	1.00			1.00		
25-29	1.592***	0.69	1.73	1.321***	0.59	1.67
30-34	2.821***	1.26	3.67	2.403***	0.71	2.93
Level of education						
First-year	1.00			1.00		
Second-year	1.248**	0.79	2.35	2.392**	1.53	2.90
Third-year	1.893**	1.23	2.07	2.820**	1.04	3.51
Fourth-year	2.421**	2.04	2.99	3.769**	2.91	4.07
Fifth-year	2.069**	0.86	3.58	2.934**	2.55	3.94
Master's	3.592**	2.14	4.37	3.813**	2.09	3.38
Total	95.6			98.2		
	96.9					

N=650 *** P-value <0.001 ** P-value = 0.001

Table 10: Percentage distribution of the respondents who used contraceptives during the first sexual encounter, by university.

Contraceptives used during the first sexual encounter	Percent			P-value
	UZ	CUT	Total	
IUD	0.0	0.0	0.0	0.001
Oral pills	13.6	19.2	16.4	
Injectables	0.0	0.0	0.0	
Female condoms	2.1	1.3	1.7	
Male condoms	96.4	98.3	97.3	
Diaphragm	0.0	0.0	0.0	
Emergency pills	89.3	93.1	91.2	
Sterilization	0.0	0.0	0.0	
Foams	0.0	0.0	0.0	
Spermicides	0.0	0.0	0.0	
Vaginal rings	0.0	0.0	0.0	

N=650

Qualitative data revealed that the main reason for not using contraceptives during the first sexual encounter was trust. During FGDs, participants revealed that partners in stable relationships who are aware of their HIV status rarely use contraceptives. Note the following remark from one of the participants during a FGD at UZ with students aged 20-24 years.

We trusted our partners because we went for HIV testing and we are negative, so there was nothing to fear.

Another participant, during a FGD at CUT with students aged 20-24 years also commented:

We trusted our partners because they were our boyfriends whom we have known for a long time, so we did not see the need to use protection.

The study revealed that some of the participants did not use contraceptives during the first sexual debut because the intercourse was unplanned. Note the following remark from one of participants during a FGD at CUT with students aged 20-24 years:

For most of us, our first sexual encounters were unplanned, so there was no time to negotiate for contraceptive use.

Another participant, during a FGD at UZ with students aged 20-24 years also reported thus:

Sometimes, first sex just happens when you least expect it, so to think about contraceptive use during that intense moment is difficult.

The study also questioned whether or not respondents had used contraceptives during the last sexual activity. The majority of the respondents, 90%, reported that they had used contraceptives during the last sexual activity although female students at CUT were more likely to have used contraceptives during the last sexual encounter, 92% when compared to students at UZ, 88% (Table 11). Having used contraceptives during the last sexual activity was associated with age (p<0.001), marital status (p=0.001), the level of education (p=0.001) and university (p<0.001). Although using modern contraceptives

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Table 11: Percentage distribution of the respondents who had used modern contraceptives during the last sexual encounter, by background variables.

Background Variables	Percent	P-value
Age group		
20-24	66.8	0.000
25-29	74.1	
30-34	97.6	
Marital status		
Never married	94.3	0.001
Married	83.9	
Level of education		
First-year	83.7	0.001
Second-year	87.4	
Third-year	88.9	
Fourth-year	91.4	
Fifth-year	92.7	
Master's	94.9	
Religion		
Catholic	89.6	0.935 (N/S)
Protestant	78.4	
Pentecostal	90.5	
Apostolic	71.6	
Seventh-Day Adventist	65.8	
Anglican	88.5	
Islam	75.2	
African Traditional Religion	70.8	
Living arrangements		
Living with both parents	78.6	0.167 (N/S)
Living with one parent	85.4	
Living with a relative	93.6	
Living with a husband	96.8	
University		
University of Zimbabwe	88.4	0.000
Chinhoyi University of Technology	91.8	
Total	90.1	

N=653

was reported across age group, respondents aged 30-34 years were more likely to have modern contraceptives during the last sexual, 98%, when compared to respondents aged 20-24 years, 67%. The never married respondents were more likely to have used modern contraceptives during the last sexual encounter, 94%, when compared to the married respondents, 84%. A positive relationship was observed between level of education and using modern contraceptives during the last sexual encounter. For example, while 95% of Master's students were more likely to have used modern contraceptives during the last sexual encounter, 84% of First-year students were more likely to report the same. Although using modern contraceptives during the last sexual encounter was high in universities, respondents at CUT were more likely to have used modern contraceptives, 92%, when compared to respondents at UZ, 88%.

Further analysis using binary regression models noted that having used contraceptives during the last sexual activity was associated with age ($p<0.001$), marital status ($p=0.001$) and the level of education [($p=0.001$) (Table 12)]. Analysis by age, revealed respondents at CUT were more likely to use contraceptives during the last sexual encounter when compared to respondents at UZ. For example, while respondents aged 25-29 years at CUT were 3 times more likely to use contraceptives during the last sexual encounter, respondents in the same age group at UZ were 1.9 times more likely to report the same (OR=2.9; 95% CI= [(1.58-3.76)].

Also, analysis by marital status revealed that the never married respondents at CUT were 5 times more likely to have used contraceptives during the last sexual encounter when compared to 3.3 times at UZ (OR=4.5; 95% CI= [(1.84-6.01)].

Analysis by level of education revealed that respondents at CUT were more likely to have used contraceptives during the last sexual encounter when compared to respondents at UZ. For instance, while second-year students at CUT were 2 times more likely to report using contraceptives during the last sexual encounter, respondents at the same level of education at UZ were 1.4 times more likely to report the same (OR= 2.9; 95% CI= [(1.63-3.16)]. Consistently, the odds of having used contraceptives during the last sexual encounter among third-year students at CUT were 3.7 times when compared to 2.3 times at UZ (OR=3.7; 95% CI= [(2.29-4.39)]. Similarly, the chances of having used contraceptives during the last sexual encounter among fourth-year students at CUT were 3.9 times when compared to 2.7 times at UZ (OR=3.9; 95% CI= [(2.47-4.79)]. Likewise, the likelihoods of having used contraceptives during the last sexual encounter among fifth-year students at CUT were 4.3 times when compared to 3.1 times at UZ (OR= 4.3; 95% CI= [(2.83-5.26)]. The chances of having used contraceptives during the last sexual encounter among Masters students at CUT were 4.1 times when compared to 3.3 times at UZ (OR=4.1; 95% CI= [(2.19-4.91)].

The study further questioned the respondents about the types of contraceptives they used during the last sexual encounter. The majority of the respondents, 99%, reported that they had used male condoms during the last sexual encounter (Table 13). A large proportion of the respondents, 83%, reported using emergency pills. The withdrawal method was reported by 63% of the respondents. About 16% of the respondents reported

Table 12: Ever using contraceptives during last sexual encounter by background variables.

Background variables	University of Zimbabwe			Chinhoyi University of Technology		
	Exp(B)	95% CI for Exp(B)		Exp(B)	95% CI for Exp(B)	
		Lower	Upper		Lower	Upper
Age group						
20-24	1.00			1.00		
25-29	1.892***	1.14	4.22	2.921***	1.58	3.76
30-34	2.518***	2.89	5.75	4.609***	2.98	5.52
Marital status						
Married	1.00			1.00		
Never married	3.372**	1.92	5.72	4.521**	1.84	6.01
Level of education						
First-year	1.00			1.00		
Second-year	1.402**	0.92	2.34	2.333**	1.63	3.16
Third-year	2.328**	1.03	3.04	3.664**	2.29	4.39
Fourth-year	2.721**	2.27	4.92	3.936**	2.47	4.79
Fifth-year	3.141**	1.69	4.29	4.328**	2.83	5.26
Masters	3.310**	1.26	4.82	4.136**	2.19	4.91
Total	88.4			91.8		
	90.1					

N=653 *** P-value <0.001 ** P-value =0.001

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Table 13: Percentage distribution of the types of contraceptives used by the respondents during the last sexual encounter, by university.

Contraceptives used during the last sexual encounter	Percent			P-value
	UZ	CUT	Total	
IUD	0.0	0.0	0.0	0.002
Oral pills	15.9	12.4	14.1	
Injectables	13.8	19.1	16.4	
Female condoms	0.0	0.0	0.0	
Male condoms	96.7	99.4	98.1	
Diaphragm	0.0	0.0	0.0	
Emergency pills	89.4	76.5	82.9	
Sterilisation	0.0	0.0	0.0	
Foams	0.0	0.0	0.0	
Spermicides	0.0	0.0	0.0	
Vaginal rings	0.0	0.0	0.0	

N=653

using injectables. Only 14% of the respondents reported using oral pills. Nevertheless, further analysis by university revealed that while male condoms were commonly used during the last sexual encounter across universities, little variations were noted - 99% at CUT, and 97% at UZ. Respondents at CUT were more likely to use injectables (19%) when compared to respondents at UZ (14%). On the other hand, respondents at UZ were more likely to use emergency pills (89%) when compared to respondents at CUT (77%). Respondents at UZ were also more likely to use oral pills (16%) when compared to respondents at CUT (12%).

Discussion

Modern contraceptive use in this study was high. About 98% of the respondents had used modern contraceptives. Of note is that female students at UZ were more likely to have used modern contraceptives (98%) when compared to their counterparts at CUT (97%). Modern contraceptive use in this study was higher than the 78% reported in Uganda [9], the 67% reported in Ethiopia [10] and the 89% noted in Nigeria [11]. This could be an indicator of the achievements of the global and national policies - the ICPD of 1994, the Zimbabwe National Reproductive Health Policy of 2012, and the National Adolescent and Youth Sexual Reproductive Health 2010-2015, all of which were designed to ensure that everyone enjoys the reproductive health rights which include, inter alia, the right to safe and satisfying sex. However, students should be encouraged to always practise safe sex to reduce the chances of being exposed to the risk of unplanned pregnancies and contracting STIs and HIV.

Participants in this study engaged in sexual intercourse with partners who used male condoms (98%), although respondents at UZ were more likely to have used male condoms (98%) when compared to students at CUT (97%). However, the findings of this study are higher than the 67% reported in Ghana [12], the 72% reported in Uganda [9], and the 64% noted in Nigeria [11]. Prevalence of male condom use at the university is because of the availability of condoms around campus and students demonstrated a strong likeness towards male condoms because they are also easy to use when compared to female condoms. Also female students manly used the male condoms because they offer dual protection. Female students in this study commonly also used condoms because they were eager to complete their studies within the required time, thus they perceived pregnancy not only as an obstacle against completing their degrees on time, but also as a financial burden. On the other hand, some female students complained about the quality of the condoms, specifically that they are smelly and too oily. This is likely to adversely affect condoms use, thereby exposing female students to the risk of getting pregnant and STIs. Given that condoms are a commonly used method of contraception despite the negative attitudes against them, they should be readily available to students. Further, more campaigns should be organised so that students are encouraged to use other modern contraceptives. These modern contraceptives should also be readily available to enhance utilisation.

Sources of contraceptives facilitate utilisation. While 91% of female students accessed contraceptives at the SAYWHAT Resource Centre, students at CUT were more likely to access contraceptives at the SAYWHAT Resource Centre (95%) when compared to students at UZ (87%). Although female students at both universities accessed contraceptives from friends (85%), female students at CUT were more likely to access contraceptives from friends (89%) when compared to students at UZ (82%). It should be noted that the findings of this study are higher than the 53% reported in South Africa [8] and the 72% in Nigeria [13]. While female students at the two universities accessed contraceptives from pharmacies (78%), female students at the University of Zimbabwe were more likely to get contraceptives from pharmacies (79%) when compared to students at the Chinhoyi University of Technology (77%). The results of the current study are lower than the 83% reported in Nigeria [14], the 87% noted in Uganda [9], and the 96% reported in Nigeria [11]. While accessing contraceptives from unauthorised dealers, public toilets, relatives and university clinics ranged between 2% and 81%, female students at CUT were more likely to access contraceptives at the university students' clinic (76%), unauthorised dealers (87%) and relatives (3%), when compared to students at UZ who reported 55%, 84% and 1%, respectively. It is important to have student-friendly contraceptive distribution points so that students can freely access contraceptives. Efforts should be made to ensure that the preferred contraceptives are easily accessible to students. Students should be encouraged to access contraceptives at formal distribution points to avoid getting contraceptives that have been tempered with.

The first sexual encounter also exposes students to STIs including HIV and unplanned pregnancies. This study established that the use of contraceptives during the first sexual encounter was high (97%). However, female students at CUT were more likely to have used contraceptives during the first sexual encounter (98%) when compared to students at UZ (96%). Nevertheless, the results of the current study are higher than the 77% reported in Uganda [9], the 43% reported in South Africa [8], and 68% noted in Nigeria [11]. This is an indicator that students are practising safe sex. However, there is need to encourage students to continue using contraceptives to prevent

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the chances of unplanned pregnancies and contracting STIs and HIV.

Female students in this study engaged in sexual intercourse with partners who used male condoms during the first sexual encounter (97%), although female students at CUT were more likely to have used male condoms (98%) when compared to their counterparts at UZ (96%). Of note is the fact that the results of this study are above the 64% reported in Nigeria [14], the 83% noted in Uganda [9], and the 69% reported in Nigeria [15].

Female students also used emergency pills (91%), although female students at CUT were more likely to have used emergency pills (93%) when compared to students at UZ (89%). The findings of this study are higher than the 61% reported in Nigeria [11]. While the use of oral pills and female condoms during the first sexual encounter ranged between 2% and 16%, female students at CUT were more likely to have used oral pills (19%) when compared to students at UZ (14%). However, students at UZ were more likely to have used female condoms (2%) when compared to students at CUT (1%). Therefore, practising safe sex should be encouraged among female students at both universities to prevent reproductive health problems.

Female students in this study had used contraceptives during the last sexual activity as reported by 90% of the respondents, although female students at CUT were more likely to have used contraceptives during the last sexual encounter (92%) when compared to students at UZ (88%). It should be noted that the findings of this study are higher than the 46% reported in Ghana [16], and the 63% noted in Nigeria [11]. There is need for consistency in contraceptive use. It is therefore important that female students are encouraged to always use contraceptives and practise safe sex to avoid the consequences of unplanned pregnancies and contracting STIs and HIV.

Although female students had commonly used male condoms during the last sexual encounter (97%), female students at CUT were more likely to have used male condoms during the last sexual encounter (99%) when compared to students at UZ (97%). The findings of this study are far much higher than the 47% reported in Ghana [16], and the 73% noted in Nigeria [11]. Although female students had also used emergency pills during the last sexual encounter (83%), female students at UZ were more likely to have used emergency pills (89%) when compared to students at CUT (77%). However, the results of this study are higher than the 48% reported in Uganda [9], the 22% reported in South Africa [8], and the 53% reported in Nigeria [11]. While the use of the injectables and oral pills during the last sexual encounter ranged between 14% and 63%, female students at UZ were more likely to have used oral pills (16%), when compared to students at CUT who reported 12%. However, female students at CUT were more likely to have used use injectables (19%) when compared their counterparts at UZ (14%). It is important that the contraceptive methods commonly used by female students are available and accessible to the students at both universities.

Conclusion

The study revealed that the prevalence of modern contraceptive use was very high although the prevalence was high among the female students at UZ when compared to students at CUT. Male condoms and emergency pills were the commonly used methods during sexual encounters. Therefore there is the need for provision of condoms and emergency pills and also expand access to these contraceptive methods. The female students in this study accessed contraceptives from the SAYWHAT resource center and unauthorised dealers at the campus. Therefore the university health service board should also ensure that they create a friendly environment for students to access contraceptives. Students should be encouraged to consistently and correctly use contraceptives to prevent the risk of unplanned pregnancies, unsafe abortions, STIs including HIV.

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Declarations

Conflict of interest: Toweka Andrea received that grant from United Nations Women Zimbabwe, Moyo Stanzia was the Assistant project leader, Mhloyi Marvellous was the co-supevisor, Makochekanwa Albert was the Project leader and Mandizadza, Enock was the co-supervisor. Toweka Andrea declares that there was no conflict of interest. Moyo Stanzia declares that there was no conflict of interest. Mhloyi Marvellous declares that there was no conflict of interest. Makochekanwa Albert declares that there was no conflict of interest. Mandizadza Enock declares that there was no conflict of interest.

Ethical approval

The research was approved by the Centre for Population Studies at the University of Zimbabwe and the Deputy Registrar at the Chinhoyi University of Technology. Prior to the research, the researcher ensured that the students voluntarily participated. To achieve this, the students were told about the objectives of the study, the role they were expected to play, the potential risk and benefits of the study. The researcher ensured that the information from the study remained confidential, private and anonymous. The participants had the right to withdraw from the study at any time. They could choose not to answer certain questions. After agreeing, the participants signed the consent form.

Author's contributions

All authors contributed to the study conception and design. Data collection, analysis and preparation were performed by Andrea Toweka. Dr Stanzia Moyo supervised the work from data collection and analysis, and also proof read the manuscript. Professor Mhloyi, Professor Makochekanwa and

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Dr Mandizadza were assistant supervisors. All authors read and approved the final manuscript.

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