

A Study on the Knowledge, Attitude & Perception of Contraception Among Medical Students of University of Cyberjaya

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Abstract

Background and objectives: Medical students play a vital role in sexual and reproductive health education. This study aimed to assess the knowledge, attitudes, and perceptions regarding contraception among medical students at the University of Cyberjaya (UoC).

Methods: A cross-sectional study employed self-administered questionnaires to assess demographics, contraceptive knowledge, attitudes toward contraception, and perceptions of sexual and reproductive health education. Descriptive and analytical statistics were used to describe the data. Stratified and simple random sampling method was used. Data was analysed using JASP software.

Results: Most students (64.3%) demonstrated moderate knowledge of contraception, with some gaps. Only half (54.8%) knew the time window for emergency contraception use. Overwhelmingly, students supported contraception for family planning (85.2%) and spacing pregnancies (87.5%). Cultural and religious barriers were recognized as potential obstacles (68.1% and 67.3% respectively). Opinions were divided regarding advising sexually active unmarried adolescents to abstain instead of using contraception (48.2% agree vs. 51.8% disagree). Among sexually experienced students (25%), most used contraception during their first intercourse (79.6%). The rhythm method was the most common (37.9%), followed by condoms (30.5%). Only a small percentage (16%) reported always using contraception, with shying from obtaining contraceptives from stores being the primary deterrent (78.3%) followed by the preference of a partner (29.3%).

Conclusion: While students demonstrated a basic understanding of contraception, some knowledge gaps exist. Positive attitudes towards contraception for family planning was evident, but concerns persist regarding unmarried adolescents. Furthermore, infrequent contraceptive use highlights the need for improved education on managing side effects. This study suggests that the curriculum at UoC may benefit from incorporating targeted interventions to enhance medical students' knowledge, address attitudinal barriers, and promote responsible contraceptive use.

Keywords: Contraception, Medical Students, Knowledge, Attitude, Perception, University of Cyberjaya

INTRODUCTION

The knowledge, attitudes, and perceptions surrounding contraception play a crucial role in shaping

individuals' reproductive health choices. Among medical students, who are future healthcare professionals, understanding their views on contraception is essential not only for their own well-being but also for their future interactions with patients. This cross-sectional study aims to delve into the realm of contraceptive knowledge, attitudes, and perceptions among medical students at the University of Cyberjaya. By examining these factors, we seek to gain insights that can inform educational initiatives, healthcare practices, and policies to promote informed decision-making and positive reproductive health outcomes among this student population.

Birth control, also known as contraception, anticonception, and fertility control, is the use of methods or devices to prevent unintended pregnancy. According to the Centers for Disease and Control Prevention, unintended pregnancy is a pregnancy that is either unwanted, such as the pregnancy occurring when no children or no more children were desired or the pregnancy is mistimed, such as the pregnancy occurring earlier than desired [1]. Most unintended pregnancies result from not using contraception or from not using it consistently or correctly.

Unintended pregnancy is a social issue that jeopardises the quality of life of parents and their children. Every year, worldwide, about 42 million women with unintended pregnancies choose abortion, and nearly half of these procedures, 20 million, are carried out in unsafe conditions. Some 68,000 women die of unsafe abortion annually, making it one of the leading causes of maternal mortality (13%). Of the women who survive unsafe abortion, 5 million will suffer long-term health complications [2]. Sex education is quite a norm and a taboo topic in many countries around the world. Malaysia is a multi-ethnic, socially conservative Muslim country where addressing the sexual and reproductive health of adolescents is challenging [3].

Objectives of the study

The objectives of the study are to:

- The aim of this study is to assess the knowledge, attitude and perception of contraception among medical students of University of Cyberjaya.
- To understand the knowledge about emergency contraception among medical students of University of Cyberjaya.
- To understand how common unintended pregnancy and abortion are among medical students in the University of Cyberjaya.

Hypotheses

Ho: There will be no significant knowledge, attitude and perception of contraception among medical students of University of Cyberjaya.

Ha: There will be significant knowledge, attitude and perception of contraception among medical students of University of Cyberjaya.

Methodology

This research was carried out as a descriptive and analytical cross sectional study using university students of University of Cyberjaya as reference population. The sample population was medical students from the Faculty of Medicine in University of Cyberjaya. The inclusion criteria were all current students of University of Cyberjaya from Faculty of Medicine (FOM), both Malaysian and non-Malaysian students, speaking English or Bahasa Malaysia, the exclusion criteria was medical students who refuse consent and

students from other faculties. A total of 345 participants were needed for the study to give significant results. Stratified sampling method was used where the sample was divided into subgroups of medical students from year 1, year 2, year 3, year 4 and year 5 as means for greater accuracy of survey result. Then simple random sampling was done to estimate statistical measure of each strata or sub-population.

Data collection, research tool, parameters of interest

In preparation for the questionnaire, our research team found the appropriate information regarding the knowledge, attitude and perception of contraception among medical students of University of Cyberjaya, with valid questionnaires from previous studies. Surveys was distributed via a self-administered questionnaire on Google Form so the participants can take the survey at their convenience. Respondents will be notified that their responses will be kept anonymous maintaining their privacy and no personal information will be asked. Only the researchers, affiliated with the study, had access to the completed surveys

Research Instrument: Contraceptive Attitude Scale

The Contraceptive Attitude Scale developed by Dr. Kelly Kyes was utilized in order to assess whether students had a positive or negative attitude regarding contraception. Likert scales, developed in 1932, measure attitudes by asking people to respond to a series of statements about a topic, in terms of the extent to which they agree with them, thus tapping into the cognitive and affective components of attitudes (McLeod, 2008). The Contraceptive Attitude Scale asked for positive and negative statements and their responses portrayed participants' attitudes relating to contraception.

Data analysis

All analyses will be performed by using Jeffrey's Amazing Statistics Program (JASP) version 0.17.2.1 data analysis software. Appropriate descriptive and inferential statistics will be carried out by using JASP to describe the data. After data entry, data transformation and data analysis were carried out. The chi-squared test will be used to compare the data. Descriptive characteristics such as mean, median, frequency and percentage will be calculated. It is considered statistically significant when the p-value is <0.05 .

Result

Our study obtained a total of 345 respondents from medical students of University of Cyberjaya with a 100 % response rate.

Table 1: Sociodemographic characteristics of the respondents

Sociodemographic factors		Frequency (n)	Percentage (%)
Age	18-19 years old	18	5.2
	20-25 years old	314	91.0
	26- 30 years old	11	3.2

	31	1	0.3
	32	1	0.3
Gender	Male	123	35.7
	Female	222	64.3
Year	Year 1	69	20.0
	Year 2	69	20.0
	Year 3	69	20.0
	Year 4	69	20.0
	Year 5	69	20.0
Ethnicity	Malay	172	49.9
	Chinese	44	12.8
	Indian	106	30.7
	Others	23	6.7

Based on the sample size calculation, the total number of participants in this survey was 345, with an overall response rate of 100%. All 345 students from the Faculty of Medicine at the University of Cyberjaya took part in this study. As shown in Table 4.1, the majority of respondents are aged between 20 and 25 years (91.0%), while a small fraction are 31 and 32 years old (0.3%). Female respondents (64.3%) outnumber male respondents (35.7%). The participants represent diverse ethnic and religious backgrounds, with 49.9% Malay, 30.7% Indian, 12.8% Chinese, and 6.7% from other ethnic groups. Our study employed stratified random sampling, with subsequent simple random sampling from each stratum ensuring equal representation from each year (20%) and reducing bias.

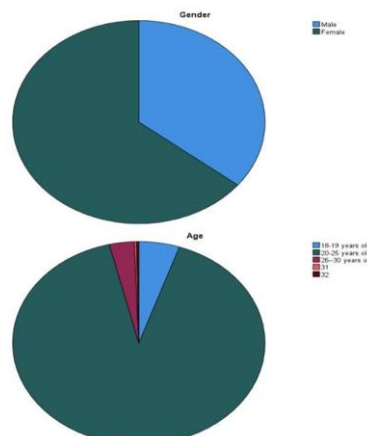


Figure 1.1: Gender and age distribution of medical students at the University of Cyberjaya.

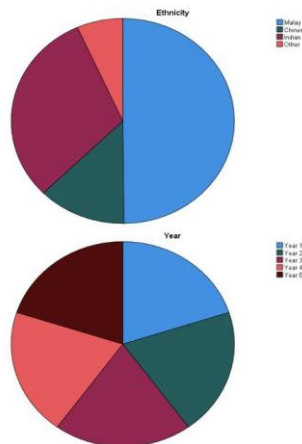


Figure 1.2: Ethnicity and year of study distribution of medical students of the University of Cyberjaya.

Table 2: Knowledge of contraception among medical students of the University of Cyberjaya.

		Frequency (n)	Percentage (%)
Have you ever heard of contraceptives?	Yes	336	97.4
	No	9	2.6
In the natural family planning method, a couple can avoid having sex on days when pregnancy is most likely to occur	Yes	299	86.7
	No	46	13.3
Birth control pills are effective even if a woman misses taking them two or three days in a row	Yes	44	12.8
	No	301	87.2
The maximum acceptable time after sex for women to take an emergency contraceptive pill (ECP) is 72-120 hours.	Yes	189	54.8
	No	156	45.2
Condom protects against sexually transmitted	Yes	311	90.1
	No	34	9.9

diseases/HIV			
Female condoms can only protect the woman against pregnancy but not against HIV	Yes	148	42.9
	No	197	57.1
Women can have an injectable contraception every two or three months.	Yes	242	70.1
	No	103	29.9
Female sterilisation is one of the methods to avoid pregnancy	Yes	286	82.9
	No	59	17.1
If a woman is having side effects of one kind of contraceptive pill, switching to another type might help	Yes	264	76.5
	No	81	23.5
There is no increased risk of breast cancer in women taking oestrogen-containing contraceptives.	Yes	102	29.6
	No	243	70.4

The dataset sheds light on medical students' knowledge about contraception. Notably, 97.4% of respondents are aware of contraception, and 86.7% recognize that natural planning methods involve abstaining from sex on days when pregnancy is most likely. Additionally, 87.2% understand that birth control pills remain effective even if a woman misses taking them for two or three days consecutively. However, only 54.8% know that the maximum time for taking an emergency contraceptive pill after sex is 72-120 hours. Impressively, 90.1% believe that condoms protect against sexually transmitted diseases and HIV. Conversely, 57.1% are unaware that female condoms only protect against pregnancy and not HIV. Furthermore, 70.1% of respondents know that women can receive injectable contraception every two to three months. A notable 82.9% recognize female sterilisation as a method to prevent pregnancy. Encouragingly, 76.5% believe that switching to a different type of contraceptive pill might help if a woman experiences side effects. Lastly, a suboptimal 29.6% are aware that oestrogen-containing contraceptives could pose a risk of breast cancer.

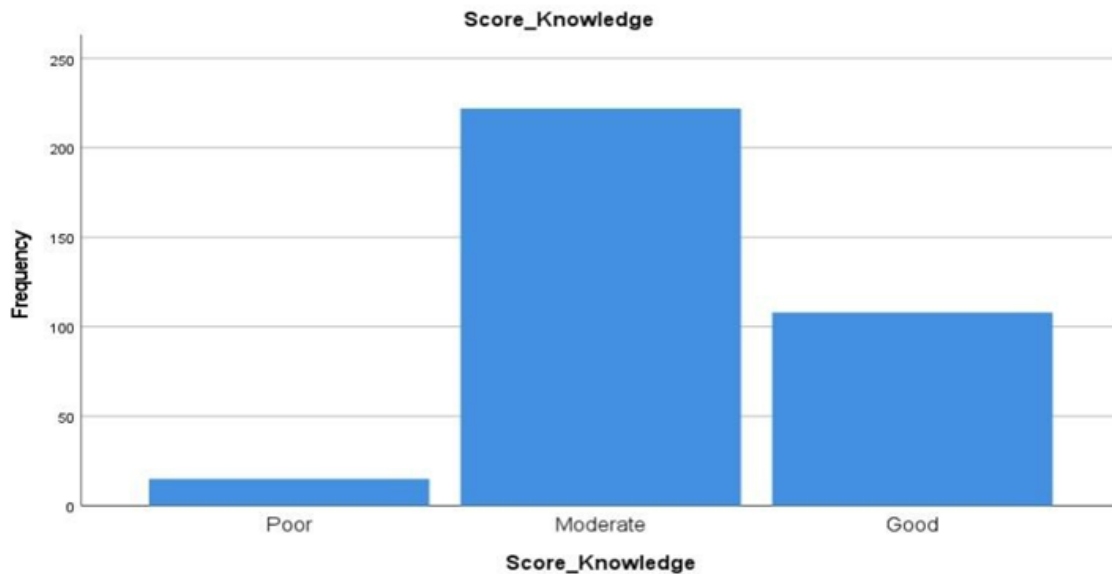


Figure 2: Knowledge of contraception among medical students of the University of Cyberjaya

The above bar chart depicts the percentage of knowledge our respondents have on contraception. A small number of participants (4.3%) have poor knowledge about sexual health and contraception. The largest group (64.3%) falls into the moderate knowledge category, indicating that most participants have a decent understanding, but there is room for improvement. A significant number of participants (31.3%) have good knowledge, reflecting a solid understanding of sexual health and contraception.

Chi-square was also done to assess the association of demographic factors and knowledge of contraception. The p-value obtained for gender and age was 0.669 and 0.455 respectively, which is $p > 0.05$, indicating there is no association between gender and age on knowledge of contraception among medical students of the University of Cyberjaya.

Whereas the p-value for ethnicity and year of study was 0.000, the $p\text{-value} < 0.05$ indicating that there is an association between ethnicity and year of study on the knowledge of contraception among medical students of UoC.

Table 3: Attitude towards contraception among medical students of the University of Cyberjaya

		Frequency (n)	Percentage (%)
Contraceptive should be used to limit the number of children	Agree	294	85.2
	Disagree	51	14.8
Contraceptive should be normalised to increase the time interval between the childbirth	Agree	302	87.5
	Disagree	43	12.4

Contraceptive should be easily available for unmarried youth	Agree	253	73.7
	Disagree	92	26.7
It is better to tell sexually active unmarried adolescents to abstain sex when they ask for contraceptives rather than give them contraceptives when they request them	Agree	166	48.2
	Disagree	179	51.8
Providing contraceptives promote sexual promiscuity and the spread of HIV/AIDS	Agree	152	44.1
	Disagree	193	55.9
Contraception information should only be for married couple	Agree	101	29.3
	Disagree	244	70.8
Cultural beliefs can prevent women from using contraceptives	Agree	235	68.1
	Disagree	110	31.9
Religious beliefs can prevent women from using contraceptives	Agree	232	67.3
	Disagree	113	32.8
Discussion about contraception with spouse or sexual partner is embarrassing	Agree	86	24.9
	Disagree	259	75.1
It would be too embarrassing for	Agree	154	44.6

someone like me to buy or obtain condoms	Disagree	191	55.4
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The table presents the attitudes of medical students at the University of Cyberjaya towards contraceptive use. A significant majority of students (85.2%) agree that contraceptives should be used to limit the number of children, and an even higher percentage (87.5%) believe they should be normalised to increase the interval between childbirths. Additionally, 73.7% support the availability of contraceptives for unmarried youth. However, the students are divided on advising sexually active unmarried adolescents to abstain from sex instead of providing contraceptives, with 48.2% agreeing and 51.8% disagreeing. Concerns about promoting sexual promiscuity and the spread of HIV/AIDS are less prevalent, as 55.9% disagree with this notion. A large majority (70.8%) reject the idea that contraception information should be exclusive to married couples. Cultural and religious beliefs are recognized as potential barriers to contraceptive use by 68.1% and 67.3% of students, respectively. Discussions about contraception with a spouse or sexual partner are not considered embarrassing by 75.1% of respondents. Finally, a slight majority (55.4%) do not find it embarrassing to purchase or obtain condoms.

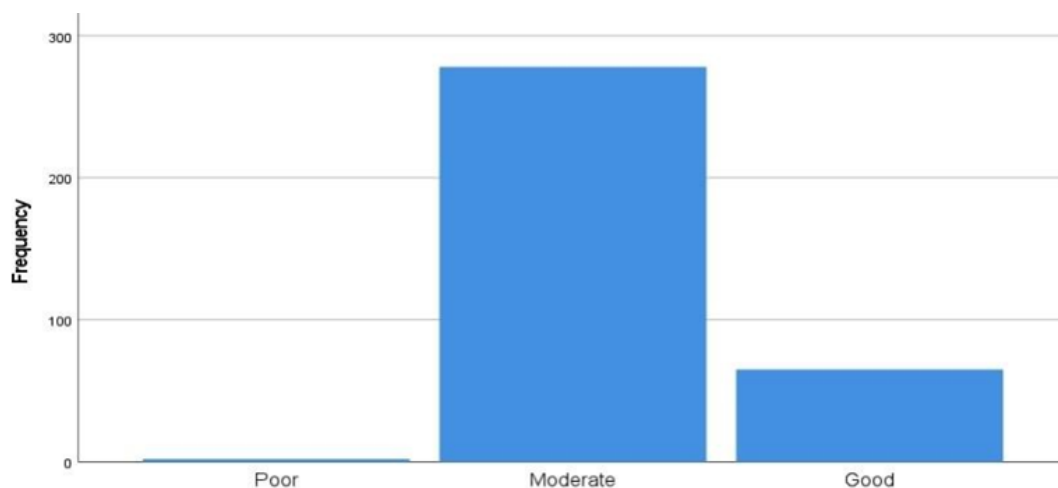


Figure 3: Attitude towards contraception among medical students of the University of Cyberjaya.

The above bar chart depicts the percentage of attitudes our respondents have on contraception. Very few participants (0.6%) have a poor attitude about sexual health and contraception. A majority (80.6%) of participants have a moderate level of awareness. A moderate number of participants (18.8%) have a good attitude, suggesting that a good amount are well-informed about sexual health and contraception.

Chi-square was also done to assess the association of demographic factors on the attitude of medical students toward contraception. The p-values obtained for gender and age were 0.490 and 0.636 respectively, which is more than $p > 0.05$, indicating there is no association between gender and age on the attitude of medical students of UoC towards contraception.

Whereas the p-value for ethnicity and year of study was 0.000, the $p\text{-value} \leq 0.05$ indicating that there is an association between ethnicity and year of study on the attitude towards contraception among medical students of the University of Cyberjaya.

Table 4: Descriptive statistics of the perception towards contraception among medical students of the University of Cyberjaya

		Frequency (n)	Percentage (%)
Have you ever had sex behaviour (sex intercourse)?	Yes	87	25
	No	258	75
How old were you when you first engaged in sexual behaviour?	Yes	29	31.5
	No	63	68.5
Did you use contraception during your first sexual behaviour?	Yes	82	79.6
	No	21	20.4
Which contraceptive method did you use on your first sexual intercourse?	Condom	29	30.5
	Intrauterine device	23	24.2
	Oral contraception	2	2.1
	Rhythm method	36	37.9
	Withdraw	4	5.3
Have you or your sex partner ever had an unintended pregnancy?	Yes	60	36.2
	No	34	63.8
How many times do you or your sex partner have unintended pregnancy?	Yes	51	79.7
	No	13	20.3
Which type of contraception did you use in your last intercourse?	Condom	20	22.5
	Intrauterine device	5	5.6
	Oral contraception	3	3.4

	Rhythm method	2	2.2
	Withdraw	4	4.50
	Vaginal douching	55	61.8
Have you or your sex partner ever had an unintended pregnancy?	Yes	60	36.2
	No	34	63.8
How many times do you or your sex partner have unintended pregnancy?	Yes	51	79.7
	No	13	20.3
How did you deal with your last unintended pregnancy?	Had a hard time	24	37.0
	Kept the baby	3	4.6
	Medical abortion	36	55.0
	Surgical abortion	2	3.0
Frequency of contraceptive use?	Always	16	16.0
	Never	19	19.0
	Occasionally	5	5.0
	Often	17	17.0
	Sometimes	43	43.0
Which contraception method have you ever used?	Condom	25	27.0
	Intrauterine device	43	47.0
	OCP	2	2.1
	Rhythm method	1	1.1

	Vaginal douching	13	14.0
	Withdraw	8	8.7
Why don't you use contraceptives?	Don't know how to use	1	1.3
	Partner doesn't prefer	22	29.3
	Shy to obtain from stores	24	32.0
	Thought they were expensive	12	16.0
	Thought the delight would be affected	6	8.0
	Thought the occasional sex could not lead to pregnancy	3	4.0
	Unplanned	5	6.7
	Worried about side effects	2	2.7

Based on the table of perception above, 25% of the respondents have engaged in sexual intercourse, while 75% have not. Among those who have had sexual intercourse, 31.5% were between the ages of 13-19 and 68.4% were between the ages of 20-30. In terms of contraception use during their first sexual experience, the most commonly used contraceptive method was the rhythm method (37.9%), followed by condoms (30.5%), and intrauterine devices (24.2%). Only a small percentage used the oral contraception (2.1%) and withdrawal method (5.3%).

Regarding unintended pregnancies, 36.2% of respondents or their partners experienced an unintended pregnancy, while 63.8% did not. Among those who faced unintended pregnancies, 79.7% experienced it once and 20.3% twice. The types of contraception used in their last intercourse varied: condoms (22.5%), intrauterine devices (5.6%), oral contraception (3.4%), rhythm method (2.2%), withdrawal (4.5%), and vaginal douching being the highest (61.8%). In dealing with unintended pregnancies, 37% had a hard time, 4.6% kept the baby, 55% opted for a medical abortion and 3% had a surgical abortion.

When it comes to the frequency of contraceptive use, 16% always used contraception, 19% never used it, 5% used it occasionally, 17% often and 43% sometimes. In terms of the types of contraception ever used, 27% used condoms, 47% intrauterine devices, 2.1% oral contraceptives, 0.3% OCP, 1.1% rhythm method, 14% vaginal douching, and 8.7% used withdrawal method. The reasons for not using contraceptives included lack of knowledge on how to use them (1.3%), partner's preference (29.3%), shyness in obtaining them (32%), and concerns about expense (16%) or side effects (2.7%).

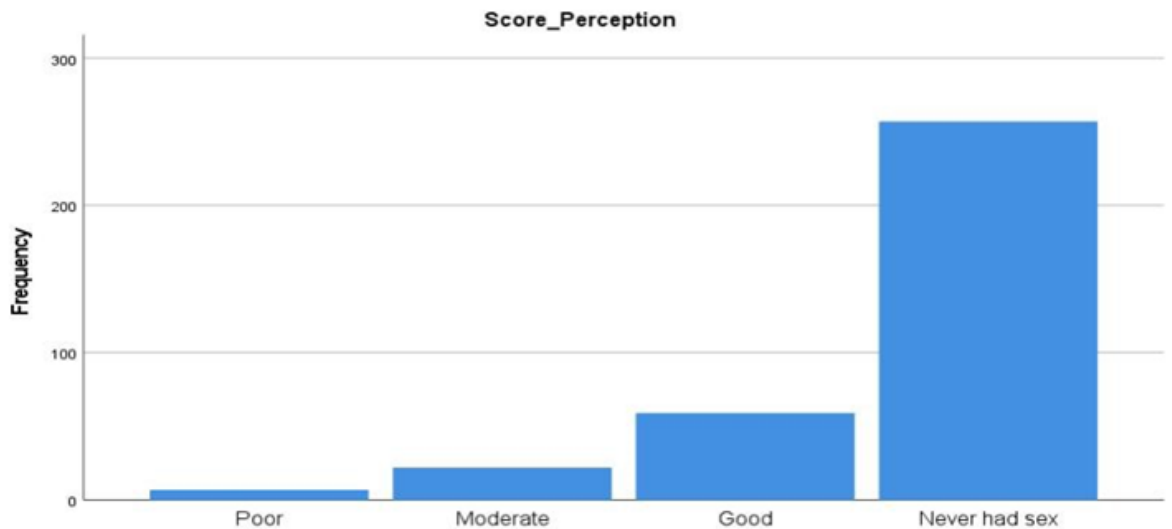


Figure 4: Perception towards contraception among medical students of the University of Cyberjaya.

The above bar chart depicts the perception our respondents have of contraception. Hardly any participants have a poor perception of sexual health and contraception (2.0%). A few participants have a moderate perception (6.4%). A significant number of participants have a good perception, indicating positive attitudes and beliefs about sexual health and contraception (17.1%). The largest group of participants reported that they have never had sex, suggesting that a significant portion of the surveyed population has not yet engaged in sexual activity (74.5%).

Chi-square was also done to assess the association of demographic factors on the perception of contraception among medical students of UoC. The p-values obtained for gender and age were 0.453 and 0.000 respectively. The p-value for gender is more than 0.05 indicating no association between gender and perception of contraception. However, the p-value for age was less than 0.05 indicating there is an association of gender on perception of contraception.

Whereas the p-value for ethnicity and year of study were 0.002 and 0.000 respectively, the $p\text{-value} < 0.05$ indicates that there is an association between ethnicity and year of study on the perception of contraception among medical students of the University of Cyberjaya.

Discussion

This study investigated the knowledge, attitudes, and perceptions regarding contraception among medical students at the University of Cyberjaya (UoC). Our findings offer valuable insights, particularly when compared to a previous study conducted at Universiti Putra Malaysia (UPM) [4].

Our study revealed that UoC students generally possess good knowledge about contraception. Over 97% of respondents were aware of contraception, and a significant majority demonstrated understanding of specific methods. This is encouraging, as medical professionals play a crucial role in providing accurate contraceptive information to patients upon graduation [5]. However, some knowledge gaps were identified. Notably, only half of the students knew the critical time window for taking emergency contraceptive pills, and a substantial portion were unaware that female condoms do not protect against HIV. These findings highlight the need for targeted educational interventions that emphasize the proper use and effectiveness of various contraceptive methods in preventing both pregnancy and sexually transmitted infections (STIs) [6]. There was a significant association between ethnicity with level of

knowledge and awareness. The result for ethnicity was similar to another study which also showed that Chinese had a higher knowledge level on contraception compared to Malay and Indians. The outcome may be closely linked to cultural perceptions about and sensitivities toward sexual matters.

When compared to the UPM study by [4], our findings suggest potentially better knowledge levels among UoC students. This difference could be attributed to variations in curriculum design or clinical training experiences offered at each university. The UoC curriculum might dedicate more emphasis to sexual and reproductive health, leading to a stronger knowledge base among their students. Additionally, the specific contraceptive methods covered in each study's questionnaire could have impacted the reported knowledge levels. Future research directly comparing the curriculum content at both universities would be beneficial to understand this discrepancy more definitively.

Our study also revealed positive attitudes toward contraception among UoC students. The majority agreed that contraceptives should be used for family planning purposes and to increase the interval between childbirths. Additionally, a significant portion supported the availability of contraceptives for unmarried youth. This aligns with the growing recognition of sexual and reproductive health as a universal right, regardless of marital status [7]. However, a division emerged regarding advising sexually active unmarried adolescents to abstain from sex instead of providing contraceptives. This highlights the need for open discussions around sexual health and responsible decision-making for young people. While abstinence is a valid choice, it's crucial to ensure access to contraception for those who choose to be sexually active.

Encouragingly, concerns about promoting promiscuity or the spread of HIV/AIDS were not prevalent among the students. Furthermore, a large majority rejected the notion that contraceptive information should be restricted to married couples.

Our findings on attitudes are generally more positive compared to the UPM study [4]. This could be due to a combination of factors, including potential differences in the student body or the evolving social landscape in Malaysia. A notable finding was that 36.2% of respondents or their partners experienced an unintended pregnancy. This underscores the importance of promoting consistent and effective contraceptive use. The most common reasons for not using contraception included concerns about side effects and lack of knowledge on how to use different methods. This emphasizes the need for educational interventions that address these concerns and empower individuals to make informed choices about contraception [8]. Respondents were asked questions about emergency contraceptives in this study. In our study, only 54.8% of students had good awareness about emergency contraceptives to be taken within 72-120 hours of intercourse, in comparison with [9] who found that 88.3% of medical students knew the proper time to use emergency contraception, 11.3% in [10] and 5.7% in [11] in university students. Additionally, 87.2% understand that birth control pills remain effective even if a woman misses taking them for two or three days consecutively.

Limitation and recommendation

The sample selected for this study were medical students from Faculty of Medicine of University of Cyberjaya. Hence, this study is restricted only to medical students and not other departments. Furthermore, as the study was conducted online, there is no certainty that the respondent may have not used additional materials in aid to answer the questions.

We hope that a study could be conducted for comparison of knowledge, attitude and perception of contraception among students of the different faculties. In addition, It would be ideal if a study could be conducted without the students' use of any reference materials to ascertain their attitude and level of

knowledge at that particular moment.

Conclusion

The study illustrates moderate knowledge and attitude but a positive perception of contraceptives among medical students at the University of Cyberjaya. There was a significant association between knowledge and attitude scores of respondents regarding contraceptives with their ethnicity and year of study. However, the perception of contraceptives was associated with the age and ethnicity of respondents. Enhancing medical students' attitudes and knowledge about contraception through joint public health education reduces unwanted pregnancies, the effects of child dumping, and the abrupt disruption of young adolescents who are single and have access to family planning during their academic careers. Thus, taking into account the future roles of medical students as family planning educators and counselors, this study suggests that information on contraception and family planning be vigorously pushed. In order to improve the quality of future healthcare and potentially further reduce maternal morbidity and mortality while also improving the health of mothers and their children, it is crucial to ascertain their knowledge, attitude, and perception of contraception.

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