

Knowledge and Perception of Sexual Health among Medical Undergraduates: A Cross-Sectional Study

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Abstract

Introduction: Sexual health education is paramount in curbing the rising numbers of sexual transmitted diseases in Malaysia. Medical undergraduates which are the future frontier play an utmost role in educating and quell the social barrier in discussion on this taboo topic. We aimed to determine the knowledge, perception and factors affecting sexual health education among medical students in MMMC and to advocate sexual health education at primary level. **Methods:** A cross-sectional study was conducted among 309 respondents comprises of Year 3, 4 and 5. **Results:** There was significant association between age, gender, religion and ethnicity and sexual health knowledge and perception score. Pearson correlation coefficient shows there was positive correlation ($r = 0.059$) between total sexual health knowledge percentage score and total perception score but was not significant. **Conclusion:** Medical undergraduates should improve their knowledge and perception regarding sexual health education. It is recommended to implement sexual education in high school curriculum and institution of higher learning in Malaysia as it is not implemented yet here due to political and religion sensitivity. It is also important that students develop personalities that are ready to accept exchange and contribute sensitive issues such as sexual health.

Keywords

Sexual Health, Medical Undergraduates, Knowledge, Perception, Cross-Sectional

1. Introduction

Sexual health, is a state of physical, emotional, mental and social well-being in relation to sexuality and it is not merely the absence of disease, dysfunction or infirmity [1]. Sex

education is an age-appropriate, culturally relevant approach to teaching about sex and relationships by providing scientifically accurate information [2], because it teaches the skills and values to enable young people to exercise their sexual and reproductive life and to make decision about their health and sexuality. The idea of sexual education is controversial in Malaysia as providing sex education will eventually result in sexual experimentation [3].

Angus Reid Public Opinion (2011) conducted an online survey among the Canadian, American and British adults on family role play in sexual health and school courses for sexual education. Majority think parents and guardians, sex education in school have been responsible for the teaching of sexual health to the teens. University of Malaya Medical Centre (2000) conducted a survey to access student's sexual knowledge and attitude based on Sex Knowledge and Attitude Test (SKAT-II) among medical and non-medical students in Malaysia. It was found that there was a significant difference among the knowledge percentage among the medical and non-medical students with medical students scoring the highest [4] [5].

In Malaysia, religious beliefs do not warrant any discussion on sexuality, and is viewed as an inappropriate and sensitive topic, which further impeded by lack of professionals. Sexuality does not only focus on sexual behaviour but also covers reproduction health, sexual attitude, sexual health care and relationship which are consistent with cultural, moral and religion value [6]. Parents are unwilling to discuss these taboo topics with their children citing lack of knowledge [7]. Medical students as a future frontier of healthcare play utmost role in downplaying such taboo topics should instead educate at every opportunity on sexual education. Evidence based medicine should be the basis for every discussion and to quell every hearsay, and this is why we conduct this study in Malaysia medical students.

The objectives of our studies are:

- 1) To determine the knowledge and perceptions of sexual health among the medical undergraduates.
- 2) To determine the factors affecting the knowledge and perception of sexual health among medical undergraduates.

2. Methodology

An analytical cross-sectional survey was conducted in order to know the level of knowledge and perception of sexual health among medical students of Melaka Manipal Medical College (MMMC), Malaysia. The study was primarily focused on the medical students of private medical institution in Melaka, Malaysia. There were a total of 603 medical students studying 3rd, 4th, and 5th year. This study time was from August to September 2014. The inclusion criterion was medical students who gave their consent and completed the questionnaire. The exclusion criteria were students who were absent on the day of questionnaire distribution. With a population size of 603 medical students in MMMC, the sample size is calculated using the formula to estimate single population proportion [8]. Universal sampling method was used in this research. All

MBBS students from 3rd, 4th, and 5th year were asked to participate in this study. A set of questionnaire was given to each of them in the classroom. The students were informed that their participation was voluntary and their identity and response would be kept anonymous and would not be disclosed or misused. The completed questionnaires were then collected on the same day.

The questionnaire was developed based on previous study [9] and it had 5 main components: sociodemographic data, sources of sexual health information, knowledge of sexual health which includes sex, sexually transmitted diseases (STD) and contraception, and lastly perceptions about sexual health. Sources of sexual health information given are friends, lecturers in college, family members, health personals in clinics/hospitals, social media (TV, film, internet, books and leaflets) and others. Ratings are given for the choices of sources like not at all useful, not very useful, neutral, useful or very useful. Six true or false questions about sex, six questions about STD and five questions about contraception are asked. For perceptions, questions about how much they feel they know about each topic of sexual health and also statements about sexual health are asked.

The data obtained from questionnaires were recorded and tabulated into a spreadsheet using Microsoft Excel. Regarding knowledge about sexual health, correct response was given 1 mark and wrong answer was given score 0 mark. Total score was computed and calculated in percentage. For knowledge, $\geq 80\%$ is Good, between 60% - 79.9% is Moderate, $< 60\%$ is Need to improve. For perception about sexual health, participants were given a series of situation, if they feel strongly agree 1 score will be given, 2 for agree, 3 for not sure, 4 for disagree, 5 for strongly disagree. The possible maximum score of perception is 60. If the score is $\geq 80\%$ which is $\geq 48/60$, Good is awarded. If the score is $< 80\%$ or $< 48/60$, Need to improve is given. Epi Info Version 7 [10] and Microsoft Excel were used for all data analyses. Normality test was done on the variables and appropriate tests were selected and applied based on it. Multiple linear regression analysis was used, and regression coefficients with 95% confidence interval were provided. Furthermore, the correlation coefficient was applied to determine the correlation between total knowledge percentage score and total perception score. All tests were 2-sided and p-values less than 0.05 were considered statistically significant.

Approval from the Institutional Ethical Committee is obtained before starting our research. The nature of the study was explained to the students where their participation was voluntary and written consent was taken from them. The information collected would be kept confidential and was only for research purposes.

3. Results

400 sets of questionnaires were prepared and distributed to all the MBBS students. 350 questionnaires were being returned and 41 of them were found to be incomplete and unable to be analyzed. The remaining 309 responses with their questionnaires completed.

Table 1 shows the sociodemographic characteristics among the participants. Mean

Table 1. Socio-demographic characteristics among participants (n = 309).

Variables	Number (%)
Age (Mean ± SD)	23.0 ± 0.9
Gender:	
Male	123 (39.8%)
Female	186 (60.2%)
Ethnicity:	
Malay	123 (39.8%)
Chinese	101 (32.7%)
Indian	75 (24.3%)
Others	10 (3.2%)
Religion:	
Islam	127 (41.1%)
Buddhist	74 (24%)
Hindu	61 (19.7%)
Christian	36 (11.7%)
Others	7 (2.3%)
No religion	4 (1.3%)
Accommodation:	
Hostel	138 (44.7%)
Non-Hostel	171 (55.4%)
Relationship Status:	
Single	205 (66.3%)
In a relationship (Married and Non-married)	104 (33.7%)

age is 23 years old, with female comprises of 2/3 compared to male among the participants. The study involves all the races with Malay as the highest number of participants, the same with religion where Islam as the dominant. Accommodation was divided in hostellers and non-hostellers where the latter is the dominant at 55.4%. For relationship status, 66.3% of our participants are single compared to 33.7% which are in a relationship.

Table 2 depicts the perceptions and responds among participants. 79.9% of the participants had heard about sexual health. Most of them obtained sexual health knowledge via social media (81.1%), followed by friends (65.5%), lecturers in college, health personals, family members and others. 27.83% of the participants has need to improve their sexual health knowledge. 78% felt that sexual education should be aimed equally at boys and girls, while 60.52% of the participants should improve their perception.

Table 3 shows multiple linear regression analysis of relationship between sociodemographic characteristics and sexual health knowledge percentage score among participants. Age is significant with p value of <0.001 with regression coefficient 3.239, 95% confidence interval at 3.017. For gender, male scored better compared to female in terms of knowledge, but it is not significant. For batch category, year 5 students scored the highest acts as dominant compared to year 4 and year 3, but it is not significant. For ethnicity, Chinese acts as control when compared to Indian, Malay and others with no significant value. For religion, Buddhist acts as control. When comparing Christians and Buddhist, p value was 0.022 with a coefficient -6.639, 95% of CI at -12.298. Other religions are not significant. For residence, non-hostellers scored lower compared to

Table 2. Perceptions and responds among participants.

Variables	Number (%)
Have you heard about sexual health?	
Yes	247 (79.9%)
No	62 (20.1%)
Sources of sexual health knowledge:	
Friends	163 (65.5%)
Lecturers in college	137 (55.0%)
Family members	57 (22.9%)
Health personals in clinics/hospitals	89 (35.7%)
Pharmacist	6 (2.4%)
Social media (TV, films, internet, booklets, leaflets)	202 (81.1%)
Others (secondary school)	7 (2.8%)
Sexual health knowledge	
Good	44 (14.24%)
Moderate	179 (57.93%)
Need to improve	86 (27.83%)
Sex education is aimed	
More at boys than girls	16 (5.2%)
Equally at boys and girls	241 (78.0%)
More at girls than boys	27 (8.7%)
Don't know	25 (8.1%)
Perception	
Good	122 (39.48%)
Need to improve	187 (60.52%)

Table 3. Multiple Linear Regression analysis of relationship between sociodemographic characteristics and sexual health knowledge percentage score among participants.

Independent variables	Regression coefficient (95% CI)	P value
Age	3.239 (3.017, 3.462)	<0.001*
Gender		
Male/Female	2.149 (-0.927, 5.225)	0.170
Batch		
Year 4/5	-2.682 (-7.135, 1.771)	0.237
Year 3/5	-2.984 (-7.306, -1.339)	0.175
Ethnics		
Indian/Chinese	1.258 (-6.920, 9.436)	0.762
Malay/Chinese	6.588 (-8.221, 21.397)	0.382
Others/Chinese	6.851 (-2.563, 16.264)	0.153
Religion		
Christian/Buddhist	-6.639 (-12.298, -0.979)	0.022*
Hindu/Buddhist	-6.015 (-15.038, 3.008)	0.191
Islam/Buddhist	-10.508 (-25.434, 4.417)	0.167
No religion/Buddhist	-0.773 (-14.038, 12.492)	0.909
Others/Buddhist	-5.648 (-16.911, 5.615)	0.324
Residence		
Non-hosteller/Hosteller	-2.914 (-6.566, 0.738)	0.117
Relationship status		
Single/In a relationship	-0.446 (-3.566, 2.674)	0.779

*Significant.

hostellers, which is not significant. For relationship status, single scored lower when compared to those in a relationship, which is no significant association.

Table 4 shows multiple linear regression analysis of relationship between sociodemographic characteristics and sexual health perception total score among participants. For age, p value is significant with 95% confidence interval at 1.880. For gender, Male has lower perception compared to Female with a 95% CI at $-5.663, -2.369$ with p value of <0.001 which is a significant association. For Batch, both year 3 and 4 have better perception score compared to year 5, which is not significant. For Ethnicity, Indians has better perception with a 95% CI at $0.947, 9.705$ with p value of 0.017 which is a significant association. The other races also recorded a better perception score, which is not significant. Malays have a lesser perception score when compared to Chinese, which is not significant. For religion, most religion or no religion scored lower score except for Islam when compared to Buddhist, which are not significant as well. For Residence category, hosteller has better perception compared to non-hosteller, which is not significant. For relationship status, single scored lower compared to those in a relationship, which is not significant.

Table 5 and **Figure 1** show the correlation between total knowledge percentage score and total perception score about sexual health, with a positive correlation of correlation coefficient of 0.059 (P value 0.572).

Table 4. Multiple Linear Regression analysis of relationship between sociodemographic characteristics and sexual health perception total score among participants.

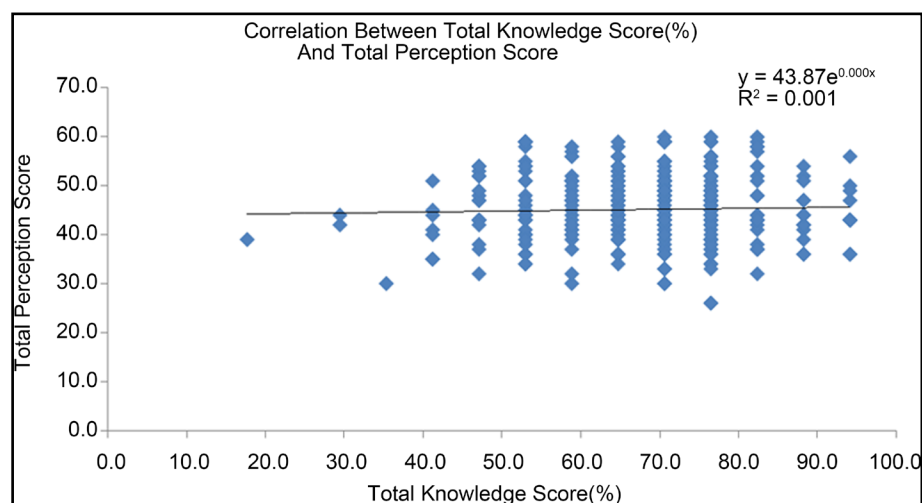
Independent variables	Regression coefficient (95% CI)	P value
Age	2.000 (1.880, 2.119)	$<0.001^*$
Gender		
Male/Female	$-4.016 (-5.663, -2.369)$	$<0.001^*$
Batch		
Year 4/5	$1.572 (-0.812, 3.957)$	0.195
Year 3/5	$1.674 (-0.640, 3.989)$	0.156
Ethnics		
Indian/Chinese	$5.326 (0.947, 9.705)$	0.017^*
Malay/Chinese	$-3.750 (-11.679, 4.180)$	0.362
Others/Chinese	$4.298 (-0.743, 9.338)$	0.094
Religion		
Christian/Buddhist	$-1.247 (-4.277, 1.783)$	0.419
Hindu/Buddhist	$-4.367 (-9.199, 0.464)$	0.076
Islam/Buddhist	$4.038 (-3.954, 12.030)$	0.321
No religion/Buddhist	$-2.560 (-9.663, 4.543)$	0.479
Others/Buddhist	$-2.112 (-8.142, 3.919)$	0.491
Residence		
Non-hosteller/Hosteller	$-0.061 (-2.017, 1.894)$	0.951
Relationship status		
Single/In a relationship	$-0.929 (-2.599, 0.741)$	0.275

*Significant.

Table 5. Pearson correlation coefficient of total knowledge percentage score and total perception score.

Independent Variable	Pearson Correlation Coefficient	P-value
Total knowledge percentage score	0.059	0.572

Level of significance is set at 0.05.

**Figure 1.** Correlation between total knowledge percentage score and total perception score.

4. Discussion

Adequate knowledge and good perception of sexual health among people are very important in order to ensure good state of physical, emotional, mental and social well-being in relation to sexuality and with absence of disease, dysfunction or infirmity. Positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence can be integrated in people with adequate knowledge and good perception as well [1]. To be more precise, rich knowledge and good perception of sexual health among medical undergraduate or medical staffs are more important in order to pass on an appropriate teachings and knowledge to the community. Thus, our study is about knowledge and perception of sexual health among medical undergraduates. Various factors have been underlined to determine the influences of sexual health on adolescences' sexual knowledge and perception such as: years of studying, age, gender, race/ethnic, religion, relationship, personal beliefs and knowledge, attitude toward sex related sources. In our study, 202 of the subjects which is 81.1% claims social media as the source to sexual health knowledge, a similar study done in Southern Nigeria proves most of the respondents who spent 3 - 5 hours a day watching television, and also used the internet often have significant relationship between sexual health knowledge, time spent watching television, and the frequency of internet use. Those who spent more time watching television and those who used the internet more frequently were more likely to have better knowledge [11]. Adolescents' males have better knowledge com-

pared to the boys; this is because girls tend to seek information from sources such as experience from parents on the other hand boys tend to seek out vast information from internet [12].

Results suggest that senior batch (Year 5) have a better knowledge compared to other junior batches (Year 3 and 4). In our study, there is significant difference of sexual health knowledge (sex, STD, contraception practices) among the 3 batches. Year 5 whom completed 4 years of MBBS have highest score, thus better knowledge compared to Year 4 whom completed 3 1/2 years and Year 3 whom completed 3 years of MBBS degree. A study to assess knowledge of HIV/AIDS was done in Israel among preclinical medical students (year 1 - 3), proves that knowledge among pre-clinical medical students was generally high and showed a statistically significant improvement as students progressed through their pre-clinical studies. This shows that students' exposure to HIV/AIDS information increased from first year to third year. This correlates with the notion that as student progress through medical school they are exposed to more medical information, thus as they progress, knowledge about sexual health improves, this information is also depicted as a result in our studies according to **Table 3** [13]. In the study, there is no significant difference in knowledge score between gender although male has higher mean score compared to female. Sources from Faculty of Human Ecology, University Putra Malaysia states that there is no difference in sexual knowledge between females and males [14]. The other non-significant factor is ethnics. Next, most religion is also found to be non-significant except for which is significant when compared to Buddhist (control). This is because most of the teenagers undergo the same stream of education and curriculum in Malaysia, despite their ethnicity and religion. Residency, although hosteller scores better than non hosteller and relationship status, although undergraduates who are in relationship scores better than singles, both are found to non-significant as well.

For perception, age is significant. As the advances with their years, they gain better perception. For gender, males scored a lower perception when compared to female which is significant as depicted in **Table 4**. According to research done on Croatian secondary school students by Department of Reproductive Health and Research, World Health Organization, 51% of the boys and 27% of the girls reported sexual experience from the total sample size, only 47% of boys compared to 80% of girls reported one sexual partner ever. Furthermore, boys and girls reported different motive of having sex, nearly half of the boys (44%) perceived physical pleasure as a priority in sexual relation; in contrast girls stressed the importance of emotional pleasure (32%) or a combination of emotional and physical pleasure (32%). In addition, boys were much more likely to report sex with a casual partner for their first experience [15]. Thus it supports that females have better perception than males about sexual health. Another significant finding for perception is ethnic where Indians have better perception compared to Chinese (control), which is significant. This probably could be explained by, Malaysian Chinese parents are more conservative than Malaysian Indian parents, thus Indian parents are more open minded and willing to discuss sex related topics to their child-

ren. Another explanation for this is Chinese parents emphasize more on academic performance compared to sexual education. Perception of religion teaching shapes personal beliefs that may influence individual comprehension and cognition in working on a set of information. Religion perception might hinder the process of obtaining sexual knowledge which may be deemed as a taboo topic, as shown in **Table 3**, where Christians scored a lower knowledge score when compared to Buddhist (control), which is significant. Evidence from various sources suggested that self-perception will influence motivation in learning [16] [17]. Adolescents who perceive they have more liberal attitude towards sex and may have a more positive personal belief and better motivation to learn about sexuality. There is no significant difference in perceptions between religions, residency and relationship status.

A few limitation of this study is that the respondents were only condensed to medical undergraduates. Therefore the true extent of knowledge and perception in cannot be assessed. Lastly, some of the questions in the questionnaire especially in perception part are too personal, thus some undergraduates chose not to answer those questions otherwise.

Based on the study, it is recommended to implement sexual education in high school curriculum and institution of higher learning in Malaysia as it is not implemented yet here due to political and religion sensitivity. Medical undergraduates should not have stigmatized notion on sexual health education which include sexual transmitted diseases, as this attitude will affect their management in future career, which is against the clinical guidelines and health laws and protocol, as shown in a study conducted among pre-clinical medical students in Israel [18]. Another recommendation is that medical undergraduates should learn more about sexual health and related issues to improve their knowledge about it. It is also important that students develop personalities that are ready to accept exchange and contribute sensitive issues such as sexual health. Lastly, the religion should play an important role to create awareness of importance of sexual knowledge and good perception.

5. Conclusion

The result from this study has revealed that there is a need to improve knowledge and perception towards sexual health among medical undergraduate. Therefore extra measures have to be implemented and medical undergraduates should take their initiatives to improve their knowledge and perceptions in view of their important role to educate the community in near future.

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