



International Journal of Medical and All Body Health Research

Knowledge and Attitudes towards Sexually Transmitted Infections among Medical Groups and Non-Medical Colleges at Baghdad University 2024

Rand Mushtaq Talib ^{1*}, Nadia Aziz Nasir ²

^{1,2} Department of Family & Community Medicine University of Baghdad/ College of Medicine, Iraq

* Corresponding Author: **Rand Mushtaq Talib**

Article Info

ISSN (online): 2582-8940

Volume: 06

Issue: 01

January-February 2025

Received: 12-11-2024

Accepted: 14-12-2024

Page No: 24-28

Abstract

Sexually transmitted infections (STIs) represent a significant global health challenge, particularly among youth, due to their high prevalence and associated complications. Despite global efforts, limited knowledge and stigma continue to hinder prevention and control. This study assesses the knowledge and attitudes of students in medical and non-medical colleges at Baghdad University regarding STIs, highlighting gaps to inform targeted interventions. A descriptive cross-sectional study was conducted between November 2023 and June 2024, involving 510 students from five colleges at Baghdad University. A structured questionnaire assessed sociodemographics, STI knowledge, and attitudes. Knowledge levels were classified as high, moderate, or low, while attitudes were categorized as positive, neutral, or negative. Data were analyzed using SPSS version 26, with chi-square tests applied for statistical significance ($p < 0.05$). Among the participants, 78% demonstrated low knowledge of STIs, with significantly higher deficiencies among non-medical students (87.1%) compared to medical students (68.6%). Negative attitudes were prevalent (84.1%), with positive attitudes recorded in only 0.4%. Males exhibited better knowledge scores but comparable negative attitudes to females. Conclusion: The study highlights critical gaps in STI knowledge and attitudes, especially among non-medical students. Targeted educational interventions are needed to address these issues and improve awareness and prevention strategies.

Keywords: Sexually transmitted infections, Knowledge, Positive Attitudes, Neutral Attitudes

Introduction

Sexually transmitted diseases (STDs) remain a significant global health concern, with approximately one million new infections occurring every day ^[1]. This staggering number contributes to an estimated 499 million new cases of curable infections annually ^[2]. STDs occur when microbes multiply in the genital tract following sexual transmission and can manifest in various ways—from completely asymptomatic cases to severe outcomes like infertility, cancers, and even death. According to the World Health Organization (WHO), over one million sexually transmitted infections (STIs) are acquired daily worldwide ^[3]. In developed nations like the United States, nearly 27 million new STI cases are reported annually, with about half occurring among young people aged 15 to 24 ^[4]. In the United Kingdom, more than 142,000 diagnoses were reported within this age group in 2020. In the Middle East and North Africa, the estimated incidence rate for four treatable STIs—chlamydia, gonorrhea, syphilis, and trichomoniasis—stands at 60.6 per 1,000 individuals. Although the region is considered low-risk, its mortality rate of 10.4 per million exceeds that of regions with higher incidence rates ^[5-8].

In developing countries, the burden of STDs is amplified by the prevalence of incurable viral infections, increased global travel, and changing sexual behaviors ^[9]. Young people, in particular, are at heightened risk due to insufficient awareness and education about STDs. Research consistently highlights a concerning knowledge gap among teenagers, especially girls, who face increased vulnerability to infections like HIV/AIDS. Factors such as gender-based violence, early sexual initiation, lack of negotiation power in sexual relationships, and limited access to reproductive healthcare further compound their risks. Social stigma,

educational barriers, and fear of unintended pregnancy also prevent many young women from seeking help or practicing safe sex [10-12].

Despite numerous studies examining sexual health knowledge across different age groups and social classes, there remains a lack of focused research on young women's understanding of STDs. Many women have limited knowledge about how these diseases are transmitted or prevented. Addressing these gaps through targeted education and awareness campaigns is essential [13-15].

This study aims to assess the knowledge and attitudes of students in medical and non-medical colleges at Baghdad University regarding STIs. By identifying gaps in understanding, the findings will help inform future interventions to improve sexual health education and awareness among young people.

Methodology

Study design and setting

A cross-sectional descriptive study to evaluate the awareness of Baghdad University students about sexually transmitted diseases and their relationship to social and demographic factors, which was conducted in the city of Baghdad. 2.2 Time of study: - The duration of the study was 9 months (from the first of November 2023 to the end of July 2024).

Study population:

The target population in this study was the students in 2nd, 3rd and 4th classes from colleges of Baghdad University that registered before 2022, selected during the study period, and who agreed to participate in the study.

Sampling:

The sample size was considered as a convenient sample, as it includes 510 students selected from the five colleges of the University of Baghdad divided into two groups medical and three non-medical colleges. The non-medical colleges included (Faculty of Education Ibn Rushed, college of Literature and College of Languages) and the medical colleges (Faculty of Dentistry, Faculty of Pharmacy). The sample size divided into 2 parts (255 students were selected from medical college, and 255 selected from non-medical colleges. the sample size was distributed to each college based on the number of students in college stages.

Study Variables

- Dependent Variable. It is the level of students' knowledge, and attitude towards sexually transmitted infections.
- Independent Variable: Sociodemographic Factors. include age, sex, stage and Field of study.

Data collection tools

Data was collected during 3 months by using a structured self-tested questionnaire, modified from the English version of the International AIDS Questionnaire-English Version (IAQ-E) [15] and from other relevant KAP studies on STDs [16]. The questionnaire was developed in English by reviewing literature, and then translated into local language Arabic for the students. The tool comprised of three parts: part one was

a sociodemographic background of students (gender, age, stage level).

Statistical Analysis

Data was translated into a computerized database structure. With SPSS (Statistical Package for Social Sciences), statistical analyses were carried out. Version 26 computer software for windows. Categorical variables were presented as frequency and percentage, Chi-square was used to test the significance of the association between categorical variables, with considered P. Value of < 0.05 was statistically significant.

Results

The study sample included 510 participants, 50% of whom were from medical colleges and the other 50% from non-medical colleges as demonstrated in Figure 1. Females make up 60.6% of the study sample, while males account for 39.4%. The age group of 18 to 20 years represented more than half of the participants (62.2%). The target group was selected from the second, third, and fourth stages (32.2%, 42.4%, and 25.4%, respectively). As shown in the Figure 1.

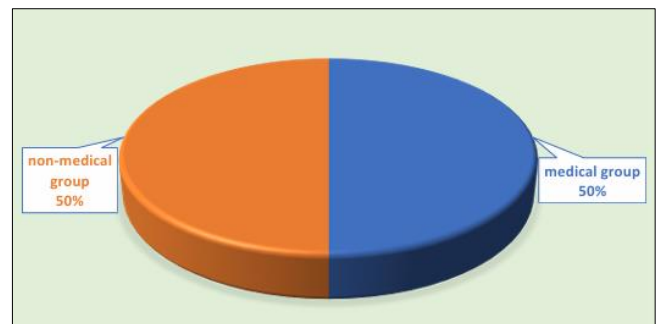


Fig 1: Distribution of study sample according to study field

Figure 2 presents the level of knowledge of participants on sexually transmitted diseases was classified into three groups; 'high knowledge' 5 (1%), 'moderate knowledge' 108 (21%), and 'low knowledge' 397 (78%), as shown in Figure 2. The lowest score was 80%.

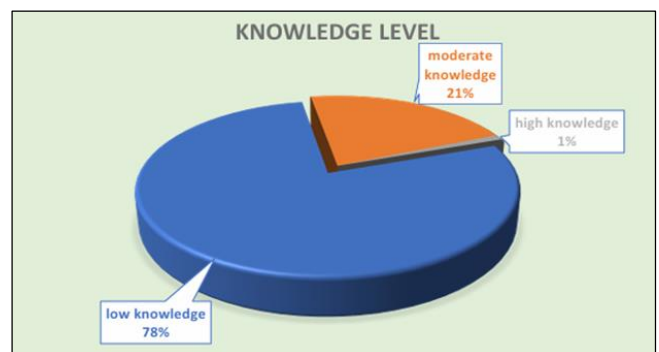


Fig 2: Pie chart of Knowledge level of participants.

The level of attitude of participants on sexually transmitted diseases were classified into three groups; 'high level' (0.4%), 'moderate level' (15.5%) and 'low level' (84.1%) as shown in (figure 3). The lowest score was 80%.

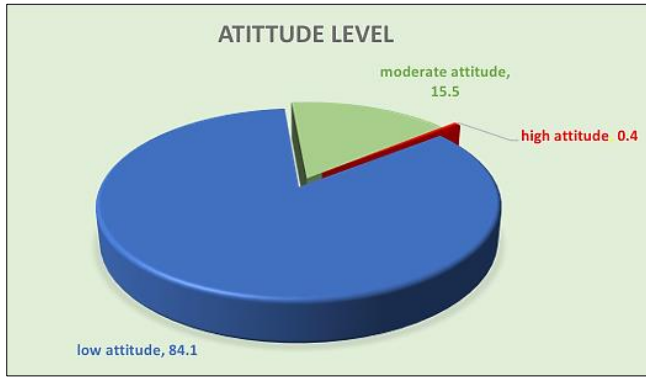


Fig 3: pie chart of attitude level of participants.

The results of the current study showed that the positive attitude of the participants was greater among those with high knowledge, while the negative attitude was more pronounced among those with low knowledge, with a statistically significant correlation. As shown in Table 1.

Table 1: Comparison between knowledge and attitude among study sample.

Level of knowledge	Level of Attitude			Total	P value
	Low Attitude	Moderate Attitude	High Attitude		
Low knowledge	357	40	0	397	0.001*
	89.9%	10.1%	0.0%	100.0%	
Moderate knowledge	71	36	1	108	
	65.7%	33.3%	0.9%	100.0%	
High knowledge	1	3	1	5	
	20.0%	60.0%	20.0%	100.0%	
Total	429	79	2	510	
	84.1%	15.5%	0.4%	100.0%	

P value < 0.05 statically significant*

Discussion

Sexual transmitted diseases are responsible for many health, social and economic problems around the world. In addition, insufficient knowledge and wrong attitudes towards STI transmission routes and prevention measures. Medical students should be knowledgeable enough not to consider themselves at risk of infection while evaluating a patient [18-20]. Knowledge of STI and their complications and attitude of the young generation toward sexual health are important in planning preventive and treatment strategies. Most of the people may be aware about HIV/AIDs because of the awareness created by media and government programs; however, knowledge about STIs other than HIV/AIDs is low in the developing countries [21]. The fact that the highest rates of STIs are being registered in young men and women is raising some concerns, taking into consideration that these infections can seriously deteriorate both male and female reproductive health [22-25].

The data gathered during this research revealed that there are disparities in participants' knowledge on different STIs and the causative agents of these STIs. The results of the knowledge gaps matched those of related studies on Saudi Arabian university students' familiarity with STIs [26-28]. For example, the participants get high scores when asked if HIV, Genital herpes, syphilis, and gonorrhoea were STIs (86.5%,60%, 54.1% and 44.9% respectively) while, only 31% of participants were able to correctly identify hepatitis B virus and 41.6% for HCV these results agree with study

conducted in Iraq [29]. Also have been reported, in Uganda and Nigeria of college and undergraduate students have heard about AIDS, respectively [30, 31]. It has been observed that AIDS is the most well-known sexually transmitted disease compared to other diseases such as viral hepatitis. This can be attributed to the common belief among people that the most prevalent way to transmit HIV is through sexual intercourse, while they believe that hepatitis is transmitted more through blood than through sex. University students in Iran have been reported to have higher levels of knowledge and awareness of sexually transmitted diseases, HIV was the most commonly recognized STI (98.2%) [32]. In Malaysia, a quarter of students revealed that chlamydia, hepatitis B and hepatitis C are STDs [33] the current study showed that tuberculosis was incorrectly identified as a sexually transmitted disease by a percentage of our students (26%), compared to a study in Turkey that reported only 8% [34]. The possible explanation of these differences might be related to variations in study setting and sample constitution. Regarding the causative factors, it has been known that mosquitoes cause sexually transmitted diseases at a rate of approximately 30% in some studies in Malaysia. This differs from the current study, where it constitutes 2.5%, while sexual contact was identified as the most important mode of transmission by the vast majority of students (84.5%), which aligns with other results observed in Nigeria and Canada [35].

Some participants, particularly men and those with prior sexual experience, displayed positive attitudes toward STIs. Our study revealed that individuals with good knowledge about sexually transmitted diseases tended to have positive attitudes, whereas a lack of knowledge contributed to negative or fearful perceptions among others. Similarly, a previous study conducted in northern Iraq found that higher awareness and heightened personal risk perception regarding STIs were linked to improved prevention practices. This suggests that enhancing public knowledge about STIs could foster more positive attitudes and healthier practices [36-39].

Conclusion

This study highlights significant deficiencies in STI knowledge and attitudes among university students in Baghdad, with pronounced gaps among non-medical students and females. These findings underscore the urgent need for targeted interventions to improve awareness and foster positive attitudes toward STI prevention and management. There are still many gaps in knowledge, as well as negative attitudes towards condoms and methods of preventing sexually transmitted infections, with some differences between genders.

Ethical consideration

The official agreement will be obtained from the Scientific Committee at the Department of Community Medicine. College of Medicine the University of Baghdad, and the Iraqi Board for medical specialties / Scientific Council for Community Medicine.

Acknowledgment

To all individuals who assisted us.

References

1. World Health Organization. Baseline Report on Global Sexually Transmitted Infection Surveillance 2012. Available from: [accessed on 8 January 2016].

2. World Health Organization. Sexually Transmitted Infections (STIs). World Health Organization. 2021. Available from: [https://www.who.int/news_room/factsheets/detail/sexually-transmitted-infections-\(STIs\)](https://www.who.int/news_room/factsheets/detail/sexually-transmitted-infections-(STIs)) [accessed January 29, 2023].
3. Weinstock HS, Kreisel KM, Spicknall IH, Chesson HW, Miller WC. STI prevalence, incidence, and costs in the United States: new estimates, new approach. *Sex Transm Dis.* 2021;48(3):207–207. doi: 10.1097/OLQ.0000000000001368.
4. UK Health Security Agency. Sexually transmitted infections (STIs): Annual Data Updated March 1, 2022. Available from: <https://www.gov.uk/government/statistics/sexually-transmitted-infections-stis-annual-data-tables> [accessed July 23, 2022].
5. Kenyon C, Buyze J, Colebunders R. Classification of incidence and prevalence of certain sexually transmitted infections by world regions. *Int J Infect Dis.* 2014;18:73–80. doi: 10.1016/j.ijid.2013.09.014.
6. Ministry of Health. Country Progress Report. UNAIDS. 2012. p. 4–6. Available from: [accessed January 29, 2023].
7. Al Jumaily H. Prevalence of sexually transmitted Diseases (STDs) in Iraq for the years (1999–2001) based on syndromic approach. *Iraqi J Community Med.* 2022.
8. World Health Organization. Sexually Transmitted Infections (STIs). 2016.
9. Krishna R, Gupta SM, Khunger N, Puri P, Muralidhar S. Changing trends in sexually transmitted infections at a Regional STD Centre in north India. *Indian J Med Res.* 2006;124:559–568.
10. Low W. Malaysian youth sexuality: Issues and challenges. *J Health Transl Med.* 2008;24(5):105–108.
11. Duong L, Debpuur C, Kahn K. Sexually transmitted disease prevention: knowledge, attitudes, and practices among school pupils in rural Ghana. *Int J Infect Dis.* 2008;12:e179–e180.
12. Folasayo A, Oluwasegun A, Samsudin S. Assessing the knowledge level, attitudes, risky behaviors and preventive practices on sexually transmitted diseases among university students as future healthcare providers in the central zone of Malaysia: a cross-sectional study. *Int J Environ Res Public Health.* 2017;14(2):159.
13. Trajman A, Belo M, Teixeira E, Dantas V. Knowledge about STD/AIDS and sexual behavior among high school students in Rio de Janeiro, Brazil. *Cad Saude Publica.* 2003;19(1):533–527.
14. Azim T, Islam MN, Bogaerts J, Mian MA, Sarker MS, Fattah KR, Simmonds P, Jenkins C. Prevalence of HIV and syphilis among high-risk groups in Bangladesh. *AIDS.* 2007;14(2):10.
15. World Health Organization. Integrated Regional Action Plan for viral hepatitis, HIV and sexually transmitted infections in South-East Asia, 2022–2026.
16. Annual Iraqi report of Ministry of Health 2022.
17. Hummed RY. Description of surveillance system of sexually transmitted diseases, human immunodeficiency virus, and acquired immunodeficiency syndrome in Iraq. *Iraqi Natl J Nurs Specialties.* 2005;18(1).
18. World Health Organization. Sexually transmitted infections (STIs): the importance of a renewed commitment to STI prevention and control in achieving global sexual and reproductive health. World Health Organization; 2013.
19. Da Ros CT, da Silva Schmitt C. Global epidemiology of sexually transmitted diseases. *Asian J Androl.* 2008 Jan;10(1):110–114.
20. Jamison CD, Coleman JS, Mmeje O. Improving women’s health and combating sexually transmitted infections through expedited partner therapy. *Obstet Gynecol.* 2019 Mar;133(3):416.
21. Craig P. Sexually Transmitted Diseases: A Webliography. *J Consum Health Internet.* 2016 Apr 2;20(1-2):71–78.
22. Vilela Á, Bach P, Godoy P. Cumplimiento del estudio de contactos de personas diagnosticadas de VIH/ITS en las comarcas de Lleida. *Rev Esp Salud Publica.* 2020 Oct 12;93:e201912096.37.
23. CDC. Sexually Transmitted Diseases (STDs) Division of STD Prevention’s Strategic Plan 2017–2022; 2017.
24. Safeldin ME. HIV Risk-Reduction in Nonmarital Sexual Behavior Among Young Maldivian Males [dissertation]. Walden University.
25. Palfreeman A, Sullivan A, Rayment M, Waters L, Buckley A, Burns F, Clutterbuck D, Cormack I, Croxford S, Dean G, Delpech V. British HIV Association/British Association for Sexual Health and HIV/British Infection Association Adult HIV Testing Guidelines 2020. *HIV Med.* 2020;21(S6).
26. Al-Karawi AS, Kadhim AS. Exploring the role of autoantibodies in Iraqi females with polycystic ovary syndrome. 2024.
27. Al-Karawi AS, Rasool KH, Atoom AM, Kadhim AS. Correlation between *H. pylori* infection and serum levels of inflammatory markers: A retrospective study. *Al-Salam J Med Sci.* 2023;2(2):20–24.
28. Kadhim AS, Abdullah YJ, Hasan NF. Asymptomatic individuals with coronavirus disease-19 as infectious cases and encouragement immunity hypothesis. *J Prev Diagn Treat Strats Med.* 2023;2(2):74–79.
29. Serum levels of interleukin–6, ferritin, C-reactive protein, lactate dehydrogenase, D-dimer and count of lymphocytes and neutrophils in COVID-19 patients. Its correlation to disease severity.
30. Escolà-Vergé L, Arando M, Vall M, Rovira R, Espasa M, Sulleiro E, *et al.* Outbreak of intestinal amoebiasis among men who have sex with men, Barcelona (Spain), October 2016 and January 2017. *Euro Surveill.* 2017;22:30581.
31. Abdullah YJ, Kadhim AS, Khallaf SA, Alsaedi RZJ. Serum levels of interleukin–6, ferritin, C-reactive protein, lactate dehydrogenase, D-dimer and count of lymphocytes and neutrophils in COVID-19 patients. Its correlation to the disease severity. *Ann Rom Soc Cell Biol.* 2021;2220–2228.
32. Whitlock GG, Gibbons DC, Longford N, Harvey MJ, McOwan A, Adams EJ. Rapid testing and treatment for sexually transmitted infections improve patient care and yield public health benefits. *Int J STD AIDS.* 2017;29:474–482.
33. Vilela Á, Bach P, Godoy P. Cumplimiento del estudio de contactos de personas diagnosticadas de VIH/ITS enlist comarcas de Lleida. *Rev Esp Salud Publica.* 2020 Oct 12;93:e201912096.37.
34. CDC. Sexually Transmitted Diseases (STDs) Division of STD Prevention’s Strategic Plan 2017–2022; 2017.
35. Safeldin ME. HIV Risk-Reduction in Nonmarital

- Sexual Behavior Among Young Maldivian Males [dissertation]. Walden University.
36. Palfreeman A, Sullivan A, Rayment M, Waters L, Buckley A, Burns F, Clutterbuck D, Cormack I, Croxford S, Dean G, Delpech V. British HIV Association/British Association for Sexual Health and HIV/British Infection Association Adult HIV Testing Guidelines 2020. *HIV Med.* 2020;21(S6).
 37. Al-Safi MH, Hussain LI, Alsudani AA. Evaluation of sound pollution near several government and private hospitals in Najaf City. 2024.
 38. Mehrdel B, Yehya AHS, Dheyab MA, Jameel MS, Aziz AA, Nikbakht A, *et al.* The antibacterial and toxicological studies of mycosynthesis silver nanoparticles by isolated phenols from *Agaricus bisporus*. *Physica Scripta.* 2023;98(12):125007.
 39. Muslim TM, Mohammed KI, Al-Safi MH. Active contribution of soil fungi to sustainable development: A review. *J Biosci Appl Res.* 2024;10(4):891–902.