



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF  
**PHARMACEUTICAL SCIENCES**

<http://doi.org/10.5281/zenodo.2528795>

Available online at: <http://www.iajps.com>

*Research Article*

**SURVEY OF THE KNOWLEDGE, ATTITUDE AND PRACTICE  
OF SURGERY TRAINEES TO HIV-INFECTED PERSONS AND  
AIDS PATIENTS IN RIYADH, SAUDI ARABIA**

<sup>1</sup>Rehab Mohammed Hassan Alhamoud, <sup>2</sup>Nouf Jabril Abu-alqasim Sharwani, <sup>3</sup>Sara Ali Ahmad Halawi, <sup>4</sup>Rafah Ghazi Ali Jarad, <sup>5</sup>Khalil Ibrahim Ali Kariri, <sup>6</sup>Fatimah Ali Ahmad Swead

<sup>1</sup>Medical intern Alrawdah, Neighborhood, Faculties of Medicine, Mobile no. : 0556114294  
dr.rehab93 @outlook.sa. P.O. Box : 45142

<sup>2</sup>Medical Student, Alkhalidiah Neighborhood, Faculties of Medicine - Jazan. Mobile no. :  
0544990211, Email : nouf.j.shrwani@hotmail.com P.O. Box : 45911

<sup>3</sup>Medical intern, Alyasmin Neighborhood - Riyadh, Faculties of Medicine - Jazan. Mobile no. :  
0538208954, Email: saraalih10@gmail.com P.O. Box : 11461.

<sup>4</sup>Medical Student, Suways Neighborhood - Jazan. Faculties of medicine - Jazan.  
Mobile no. : 0537020026, Email : r.jarad33@gmail.com, P.O. Box : 451425

<sup>5</sup>Medical Student, Ahad Almasarhah- Jazan, Faculties of medicine - Jazan. Mobile no. :  
0552587789, Email: khalil87789@gmail.com, P.O. Box : 459526

<sup>6</sup>Medical Student, Alworood district - Tabuk Region  
Tabuk University - Faculty of Medicine. Mobile no. : 0502104163 Email :  
fatimahswead@gmail.com, P.O. Box : 47914

**Abstract:**

**Background:** In our Islamic societies in contrast to most regions of the world the epidemiology of human immunodeficiency virus (HIV) is low. Data from the Middle East and North Africa (MENA) region suggests increasing incidence among key populations (people who inject drugs, men who have sex with men, transgender persons, sex workers and prisoners) in the region. Accurate data collection has long been limited by social, cultural, and religious taboos. Understanding knowledge levels and attitudes toward HIV/AIDS is an important component to design adequate and culturally appropriate awareness and prevention programs.

**Objectives:** This study set out to determine the knowledge, attitude and risk perception of Saudi surgery trainees to HIV infection and AIDS.

**Methods:** cross-sectional survey was conducted among 500 surgery trainees in Riyadh hospitals. Data was collected using a pretested, Online-administrated 30-item questionnaire and was statistically analyzed using SPSS software version 20.

**Design:** cross sectional design

**Setting:** online survey

**Main Outcome Measures:** Knowledge gaps and negative attitudes of the surgeon trainees toward people living with HIV/AIDS

**Results:** Most of participants (60%) were males with mean age of 35 years. Also 60% were married. Almost all of our participants (90%) aren't concerned with estimation the HIV prevalence in their area. More than three quarters (82%) of them said that needle stick injuries (NSI) could occur from 5 to 6 times per year. The majority of participants (84%) occasionally exposed to HIV positive blood. 80% of them occasionally operated on AIDS patients unknowingly. The majority (81%) had an idea of the CDC guidelines for universal precautions against blood borne pathogens.

**Conclusion:** Knowledge gaps and negative attitudes of the surgeon trainees toward people living with HIV/AIDS have been identified and can be improved by medical training and social media awareness campaigns.

**Limitation:** sample size and limited areas of Saudi arabia

**Keywords:** Attitudes, knowledge, practice, surgery trainees, HIV, AIDS.

**Corresponding author:**

**Rehab Mohammed Hassan Alhamoud,**

Medical intern Alrawdah ,

Neighborhood, Faculties of Medicine, Mobile no. : 0556114294

dr.rehab93 @outlook.sa. P.O. Box : 45142

QR code



Please cite this article in press Rehab Mohammed Hassan Alhamoud et al., *Survey of the Knowledge, Attitude and Practice of Surgery Trainees to HIV-Infected Persons and Aids Patients in Riyadh, Saudi Arabia., Indo Am. J. P. Sci, 2018; 05(12).*

**INTRODUCTION:**

Human immunodeficiency virus infection / acquired immunodeficiency syndrome (HIV/AIDS) is a disease of the human immune system caused by the human immunodeficiency virus [1]. The human immunodeficiency virus is a retrovirus that infects cells of the immune system by destroying or impairing their function leading to increased susceptibility to infections. The most advanced stage of HIV infection is acquired immunodeficiency syndrome (AIDS). It can take 10-15 years for an HIV-infected person to develop AIDS [2]. A person with HIV infection has AIDS when person's immune system is too weak to fight against common infections / opportunistic infections, or the number of immune system cells (CD4) in the blood of an HIV positive person drops below a certain level [3].

According to the latest Saudi Ministry of Health report there has been a 0.5–2.5% increase in the

incidence of HIV infection between 1984 and 2009 [4]. Interestingly, HIV infections are more prevalent

in Jeddah than in any other city within the Kingdom, This might at least partially be attributed to the fact that Jeddah is the main sea- and airport of the country and population movement is therefore higher [5]. Whilst a large percentage of the overall HIV cases in Saudi Arabia is among the immigrant population, there was a significant increase in the proportion of cases among the Saudi population [6].

The risk of occupational transmission of the virus from a patient to a health-care provider has been estimated at 0.3% after a single percutaneous exposure to HIV infected blood [7]. We can improve the medication tolerance/effectiveness, treatment success rate, and quality of life by providing good oral care to HIV-positive individuals [8, 9]. Previous reports have shown that approximately 90% of the HIV infections among health-care workers occur in

developing countries where occupational safety is a neglected issue [10-12]. The studies done till date in Saudi Arabia to assess the knowledge and attitude of health care workers towards HIV are rare. The purpose of the present study was to assess the knowledge, attitude, and practice towards HIV patients among the surgery trainees, Saudi Arabia.

### PATIENTS AND METHODS:

A cross-sectional survey was conducted among the surgery trainees in Riyadh hospitals, Saudi Arabia using a pretested 30-item questionnaire. Out of the 30 questions, 3 questions were based on socio-demographic factors and the rest were knowledge, attitude, and practice questions. A pilot study was conducted to determine the sample size. The sample size was estimated to be 500. The sample size was calculated by using the formula  $Z_{\alpha/2} p q / e^2$ .

The data collection was done by mailing. A written informed consent was obtained from all the study participants. Ethical clearance was obtained from ..... Ethics committee prior to beginning the study. A convenient sampling method was undertaken for data collection. Participants who were legally registered surgery trainees in Riyadh, Saudi Arabia were included in the study. Participants who were unwilling to participate in the study were excluded. The study was conducted for a period of 6 months from April to October 2018. The reliability and validity of the questionnaire was checked by two professionals.

### Statistical analysis:

The statistical analysis was done using the IBM Statistical Package for the Social Sciences software version 20, and the statistical test used here was the chisquare test.

### RESULTS:

A total of 500 subjects participated in the survey. Baseline characteristics such as gender, age group, and marital status of the respondents are listed in Table 1. Most of participants (60%) were males with mean age of 35 years. Also 60% were married.

Table 2 showed some of participants practice toward HIV patients. Almost all of our participants (90%) aren't concerned with estimation the HIV prevalence in their area. More than three quarters (82%) of them said that needle stick injuries (NSI) could occur from 5 to 6 times per year. The majority of participants (84%) occasionally exposed to HIV positive blood. 80% of them occasionally operated on AIDS patients unknowingly. The majority (81%) had an idea of the

CDC guidelines for universal precautions against blood borne pathogens.

Table 3 showed the frequency of use of protective measures and the categories of patients. Approximately one third (30%) of our population used protective goggles when they treated with HIV positive patients and 40% used it by treating with AIDS patients. Regarding to wearing plastic aprons 31% didn't care by wearing it, 30% wore it by treating with any patient, 27% with high risk patients, only 7% with AIDS patients and 5% with HIV positive patients. About half of them (48%) used double gloving when they treated with high risk patients, only 7% and 8% used it with HIV positive patients and AIDS patients respectively. More than half of them (55%) were indirectly handled the sharps when they treated with all patients however only 5% and 4% used it with HIV positive patients and AIDS patients respectively. 57% don't care about cautery over sharps, 8% and 12% of them preferred cautery over sharps with HIV positive patients and AIDS patients respectively. Almost all of participants (94%) didn't prefer using of staplers. Half of participants didn't care about deliberate slowness; the quarter of them (25%) deliberated slowness when they treated with high risk patients, only 9% and 6% deliberated slowness when they treated with HIV positive patients and AIDS patients respectively. About half of them (47%) didn't compliance with CDC guidelines, only 4% and 10% of them committed with CDC guidelines when they treated with HIV positive patients and AIDS patients respectively. 67% didn't care about precautions.

Table 4 showed factors that impede HIV testing of patients. Regarding to cost, 45% agreed that the expensive cost impeded HIV testing of patients, 40% don't agreed and 15% strongly agreed. Regarding non-availability of testing kit about two (63%) thirds disagreed, 30% agreed and 7% strongly agreed. Regarding the preference for non-testing (81%) didn't agreed, 15% agreed and 4% strongly agreed. Regarding legal hindrances and barriers; two thirds (84%) disagreed, 11% agreed and 5% strongly agreed. About half (51%) agreed that absence of hospital guidelines is impeded HIV testing of patients, 31% didn't agreed and 18% strongly agreed. About three thirds disagreed that absence of country guidelines was factor impeded HIV testing of patients, 14% disagreed and 9% strongly agreed. 67% disagreed that patient population has low risk for HIV impeded HIV testing of patients, 28% agreed and 5% strongly agreed. Patients refusal disagreed by 77% of our population to be a factor that impeded

HIV testing of patients, 17% agreed and 6% disagreed. 68% disagreed that cumbersome of the test was the factor that impeded HIV testing of patients, 30% agreed and 2% strongly agreed. 79% disagreed that undue delay in obtaining result was the factor that impeded HIV testing of patients, 14% agreed and 7% strongly agreed. 69% disagreed that all patients treated as if they were HIV positive was the factor that impeded HIV testing of patients, 19% agreed and 12% strongly agreed. About half of participants (51%) disagreed that the difficulty of obtaining informed consent was factor that impeded HIV testing of patients, 37% agreed and 12% strongly disagreed. Half of our participants (50%) agreed that embarrassing for both doctor and patient was factor that impeded HIV testing of patients, 41% disagreed and 9% strongly agreed.

### DISCUSSION:

This is the first study to investigate the knowledge, attitude and practice of surgery trainees to HIV-infected persons and AIDS patients in Riyadh.

There is no single, defined questionnaire for the investigation of surgeon attitudes toward HIV infection. In addition, individuals' attitudes have generally been investigated in specific populations. Among these studies, hardly any evaluation has been performed in developed countries. These factors make it difficult to compare our findings with those of other researchers. Most studies have been performed among health providers, including surgeons [13], nurses [14], dentists [15], anesthetists [16] and students at health institutes [17-19], and have generally focused on individuals' confidence with respect to providing treatment and their willingness to care for HIV/AIDS patients [19, 20].

In this KAP study of Saudi surgery trainees in 2018, the majority of the respondents showed a lack of awareness of the sero-prevalence of HIV in their area of practice and poor perception of risk posed by exposure to patients with HIV. This lack of awareness has been reported in many other countries at the early stages of the HIV epidemic and among other categories of HCW in Saudi Arabia [21-23].

Many of the respondents in this study would not operate on HIV positive patients. This aversion may be related to the perception of risk of infection, inadequate training, and their level of awareness this results matched with a similar study which conducted in Nigeria [13].

These findings reveal a consistent presence of provider HIV/AIDS-related fear as a result of their work. Perceived infection risk during casual contact was associated with lack of HIV training and provider stigma, suggesting that education and stigma-reduction strategies may play an important role in alleviating provider concerns.

Also, the need for additional mechanisms other than training to overcome provider fears raises the issue of infection prevention measures, particularly regarding availability and use of universal precautions. In this study, plastic aprons, protective goggles, and double gloving—essential in treating with all patients. Even gloves, the most commonly available protective wear, were not universally available. Other studies have found such shortages in the face of provider concerns of infection [24, 25]. For example, 65% of health workers in a public tertiary care facility in Nigeria cited lack of materials as the main reason for non-practice of universal precautions; among them, 81% reported concerns of becoming infected through their work with HIV/AIDS patients [24]. Though use of materials, such as gloves, does not prevent needle stick injuries, it does guard against exposure of cuts or skin abrasions to potentially HIV-infected materials. Universal precautions are recommended to protect against transmission not only of HIV, but other infections as well.

### CONCLUSION:

In conclusion there a gap in knowledge about HIV/AIDS among the surgeon trainees, Riyadh, Saudi Arabia and a general rather negative attitude toward people living with HIV/AIDS. It is expected that medical training and social media medical training and social media awareness campaigns may help reaching the targeted audience. There is an urgent need to address those gaps and attitudes in the Saudi surgeon trainees and also recommended for other specialists.

**Disclosure Statement:** The authors have nothing to disclose

**Conflict of interest:** No

### REFERENCES:

1. Sepkowitz, K. A. AIDS—the first 20 years. *N Engl J Med* June 2010; Vol 344: 1764-1772.
2. World Health Organization (WHO), (2012a). HIV/AIDS. [http://www.who.int/topics/hiv\\_aids/en/](http://www.who.int/topics/hiv_aids/en/) (Accessed 10/7/2012)
3. Health Protection Surveillance Centre (HPSC),

- (2011a). HIV and AIDS-Some Facts. <http://hpsc.ie/hpsc/AZ/HIVSTIs/HIVandAIDS/Factsheet/> (Accessed 9/07/2012).
4. Madani TA, Al-Mazrou YY, Al-Jeffri MH, Al Huzaim NS. Epidemiology of the human immunodeficiency virus in Saudi Arabia; 18-year surveillance results and prevention from an Islamic perspective. *BMC Infect Dis* 2004;4:25.
  5. Mazroa MA, Kabbash IA, Felemban SM, Stephens GM, Al-Hakeem RF, Zumla AI, et al. HIV case notification rates in the Kingdom of Saudi Arabia over the past decade (2000–2009). *PLoS One* 2012;7:e45919
  6. Prasanth PB, Sreenivasan V, Goel A. Knowledge of HIV/AIDS and attitude of dental students towards HIV/AIDS patients: A cross-sectional survey. *J Educ Ethics Dent* 2011;1:59-63.
  7. Swaminathan S, Narendran G. HIV and tuberculosis in India. *J Biosci* 2008;33:527-37.
  8. Rohn EJ, Sankar A, Hoelscher DC, Luborsky M, Parise MH. How do social-psychological concerns impede the delivery of care to people with HIV? Issues for dental education. *J Dent Educ* 2006;70:1038-42.
  9. Azodo CC, Ehigiator O, Oboro HO, Ehizele AO, Umoh A, Ezeja EB, et al. Nigerian dental students' willingness to treat HIV-positive patients. *J Dent Educ* 2010;74:446-52.
  10. Kermode M, Jolley D, Langkham B, Thomas MS, Crofts N. Occupational exposure to blood and risk of bloodborne virus infection among health care workers in rural north Indian health care settings. *Am J Infect Control* 2005;33:34-41.
  11. Ansa VO, Udoma EJ, Umoh MS, Anah MU. Occupational risk of infection by human immunodeficiency and hepatitis B viruses among health workers in south-eastern Nigeria. *East Afr Med J* 2002;79:254-6.
  12. Gumodoka B, Favot I, Berege ZA, Dolmans WM. Occupational exposure to the risk of HIV infection among health care workers in Mwanza Region, United Republic of Tanzania. *Bull World Health Organ* 1997;75:133-40.
  13. Adebamowo CA, Ezeome ER, Ajuwon JA, Ogundiran TO. Survey of the knowledge, attitude and practice of Nigerian surgery trainees to HIV-infected persons and AIDS patients. *BMC surgery*. 2002 Dec;2(1):7.
  14. Askarian M, Hashemi Z, Jaafari P, Assadian O. Knowledge about HIV infection and attitude of nursing staff toward patients with AIDS in Iran. *Infection Control & Hospital Epidemiology*. 2006 Jan;27(1):48-53.
  15. Arigbede AO, Ogunrinde TJ, Okoje VN, Adeyemi BF. HIV/AIDS and clinical dentistry: assessment of knowledge and attitude of patients attending a university dental centre. *Nigerian journal of medicine: journal of the National Association of Resident Doctors of Nigeria*. 2011;20(1):90-5.
  16. Kushimo OT, Akpan SG, Desalu I, Merah NA, Ilori IU. Knowledge, attitude and practices of Nigerian anaesthetists in HIV infected surgical patients-a survey. *The Nigerian postgraduate medical journal*. 2007 Sep;14(3):261-5.
  17. Qu B, Zhang Y, Guo H, Sun G. Relationship between HIV/AIDS knowledge and attitude among student nurses: a structural equation model. *AIDS patient care and STDs*. 2010 Jan 1;24(1):59-63.
  18. Ryalat ST, Sawair FA, Shayyab MH, Amin WM. The knowledge and attitude about HIV/AIDS among Jordanian dental students:(Clinical versus pre clinical students) at the University of Jordan. *BMC research notes*. 2011 Dec;4(1):191.
  19. Al-Rabeei NA, Dallak AM, Al-Awadi FG. Knowledge, attitude and beliefs towards HIV/AIDS among students of health institutes in Sana'a city. *Eastern Mediterranean Health Journal*. 2012 Mar 1;18(3).
  20. Ahmed SI, Hassali MA, Aziz NA. An assessment of the knowledge, attitudes, and risk perceptions of pharmacy students regarding HIV/AIDS. *American Journal of Pharmaceutical Education*. 2009 Sep;73(1):15.
  21. Alwafi HA, Meer AM, Shabkah A, Mehdawi FS, El-haddad H, Bahabri N, Almoallim H. Knowledge and attitudes toward HIV/AIDS among the general population of Jeddah, Saudi Arabia. *Journal of infection and public health*. 2018 Jan 1;11(1):80-4.
  22. Kumar S, Tadakamadla J, Areeshi AY, Tobaigy HA. Knowledge and attitudes towards HIV/AIDS among dental students of Jazan University, Kingdom Saudi Arabia. *The Saudi Dental Journal*. 2018 Jan 1;30(1):47-52.
  23. Memish ZA, Filemban SM, Bamgboye A, Al Hakeem RF, Elrashied SM, Al-Tawfiq JA. Knowledge and attitudes of doctors toward people living with HIV/AIDS in Saudi Arabia. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. 2015 May 1;69(1):61-7.
  24. Reis C, Heisler M, Amowitz LL, Moreland RS, Mafeni JO, Anyamele C, Iacopino V. Discriminatory attitudes and practices by health workers toward patients with HIV/AIDS in Nigeria. *PLoS medicine*. 2005 Jul 19;2(8):e246.
  25. Chelenyane M, Endacott R. Self-reported infection control practices and perceptions of

HIV/AIDS risk amongst emergency department nurses in Botswana. Accident and Emergency

Nursing. 2006 Jul 1;14(3):148-54.

**Table 1: Socio-demographic data of respondents:**

Characteristics	N(%)
Sex	
Male	300(60%)
Female	200(40%)
Age	
Mean±SD	35±2.1
Marital status	
Single	20(4%)
Married	300(60%)
Widow	100(20%)
Divorced	80(16%)

**Table 2: Some of participants practice toward HIV patients:**

Questions and answers	N(%)
Are you attempted to estimate the HIV prevalence in their area?	
Yes	450(90%)
No	50(10%)
How many times needle stick injuries (NSI) can occur per year	
1-2	40(8%)
3-4	50(10%)
5-6	410(82%)
Describe your Exposure to HIV positive blood	
fruequently	30(6%)
often	50(10%)
occasionally	420(84%)
Describe your operating on AIDS patients unknowingly	
fruequently	40(8%)
often	60(12%)
occasionally	400(80%)
Do you have an idea of the CDC guidelines for universal precautions against blood borne pathogens	
Yes	405(81%)
No	45(9%)
I do not know	50(10%)

**Table 3: The frequency of use of protective measures and the categories of patients:**

Measures	Category of patients in which it is used in percentages				
	All patients	High risk patients	HIV <sup>+</sup> patients	AIDS patients	Not at all
Protective goggles	5%	10%	35%	40%	10%
Plastic aprons	30%	27%	5%	7%	31%
Double gloving	20%	48%	7%	8%	17%
Indirect handling of sharps	55%	18%	5%	4%	18%
Preference for cautery over sharps	12%	11%	8%	12%	57%
Preference for staplers	0%	2%	1%	3%	94%
Deliberate slowness	9%	25%	9%	6%	51%
Compliance with CDC guidelines	19%	20%	4%	10%	47%
No precaution	20%	8%	3%	2%	67%

**Table 4: Factors that impede HIV testing of patients:**

Factor	Response rate in percentages		
	Agree	Strongly agree	Do not agree
Expensive	45%	15%	40%
Non-availability of testing kit	30%	7%	63%
Preference for non-testing	15%	4%	81%
Legal hindrances and barriers	11%	5%	84%
Absence of hospital guidelines	51%	18%	31%
Absence of country guidelines	14%	9%	77%
Patient population has low risk for HIV	28%	5%	67%
Patients refusal	17%	6%	77%
Testing is cumbersome	30%	2%	68%
Undue delay in obtaining result	14%	7%	79%
All patients treated as if they are HIV+	19%	12%	69%
Obtaining informed consent is difficult	37%	12%	51%
Procedure is embarrassing for both doctor and patient	50%	9%	41%