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ABSTRACT

Background: Health-care professionals are at a high risk of AIDS infection, among hospitalized HIV infected patients. Proper training and knowledge accompanied by necessary preventive measures are by all means, the most significant factors which ensure low accident rates and furthermore lower contamination rates of the health-care personnel.

Objective: Screening and assessment of knowledge and attitudes of newly-qualified doctors towards AIDS infection.

Methodology: We conducted a cohort study with a screening questionnaire, which included demographic data and 16 questions associated with AIDS infection. 51 forms were filled in by specializing and rural doctors. The statistical analysis was conducted using the statistical program SPSS 13.

Results: 25,5% (n=13) of the participants in this research have treated at least one patient for HIV infection, 19% (n=10), of them would willingly specialize in intense care of HIV patients and lastly 90.2%(n=46) believe that we should preserve the medical confidential for HIV patients. 96.1% (n=49) of the participants doctors knew that AIDS disease is caused by Human Immunodeficiency Virus (HIV), 88.2%(n=45) is aware that HIV virus damages the immune system and finally 92% (n=47) recognize HIV symptomatology. The vast majority of the doctors (98%,n=50) is aware that HIV infection is spread through sexual intercourse, blood contact and by sharing needles or syringes. Nevertheless, a percentage of 13.7% (n=7) believe that HIV transmission is feasible through kissing and 7.8% (n=15) through insects' bites. At last 85-98% of the personnel refer that it's familiar with the general preventive measures, which are usually applied to all HIV positive inpatients.

Conclusions: Knowledge and attitude of new doctors towards AIDS infection is, in general terms satisfactory. Nevertheless, it's imperative that we constantly inform and update newly-qualified doctors about AIDS infection, in order to minimize their inhibitions and compensate for the lack of knowledge, which is commonly observed in new doctors.

Key words: AIDS, health-care personnel, HIV infection

Introduction

Health-care professionals are at a high risk of HIV infection, among hospitalized HIV infected patients (Bartlett,1996; Flaherty, 2000) . Proper training and knowledge accompanied by necessary preventive measures (CDC,2004; Kalichman, 1995) are by all means, the most significant factors which ensure low accident rates and furthermore lower contamination rates of the health-care personnel.

Doctors' education in our country and more widely in every part of the world (Uwakwe, 2000; WHO, 2007; Currey,1990; Essien, 2000), is not only obtained at University level. Definitely, academic knowledge is the starting point, but continuing education accompanied by clinical experience are most certainly the principal elements for newly-qualified doctors. As far as HIV patients are concerned, health-care professionals are obligated to adopt both continuing education and clinical experience in order to treat this particular group of patients and simultaneously decrease the infection rate level (Searle, 1987; Dement, 2004; U.S. Public Health Service, 2001).

In Greece, at the end of October 2007 the total number of serum positive HIV patients was 8.584, of which 2.829 had manifestations of the disease, while 1.552 died H.C.D.C., 2008) Triennial studies conducted from 2005-2007(Roumeliotou,1992; Žakula, 2004), demonstrated an increased rate of HIV infections of approximately 23%.

The alarming rate of increase of HIV patients should not intimidate health-care professionals, but on the contrary motivate them to acquire further knowledge and experience (UNAIDS/WHO, 2003).

Aim

The objective of the present study is to screen and assess the knowledge and attitudes of newly-qualified doctors towards HIV infection.

Methods

Research Design

We conducted a descriptive, non invasive cohort study of correlation.

Ethical Issues

In order to conduct the present study we filled the Research Protocol and introduced it before the Scientific Institution and the Medical Service of the General Hospital of Korinthos. The filling out of the data protocol (anonymous questionnaire) from the participants was based on the principles of anonymity and confidentiality of our study. There are no potential risks for the participants. Moreover, written consent was asked from the participants, so as to confirm their approval to the current study.

Questionnaire-Epidemiological Record

The questionnaire is formed of 22 questions. 6 questions refer to sex and age record of the participants (demographic data) and 16 questions are concerned with HIV infection. Of the aforementioned 16 questions, 10 were multiple choices, 5 were dichotomous and 1 was an open-ended question. Every additional question-of the 16- was based on a questionnaire published by the World Health Organization (WHO, 2007).This was in the form of questions and answers.

The questionnaire was given for two(2) pilot testing , 10 participants each, in health care professionals of another hospital.

The internal consistency reliability of our study was examined with coefficient alfa (Cronbach's a), which was equal to 0, 70.

Sample

Sample is a convenient sample. The collection of the sample procedure was with personal reviewing. The current study took place in the interval between 2/1/2007 and 3/2/2007 , in morning hours (9.00- 14.00). The participants of the study were 51 doctors (specializing and rural doctors).

Statistical Analysis

The statistical analysis was conducted using the statistical program SPSS 13. In order to report sample characteristics we applied the frequency distribution, the percentage rate and the mean values.

Results

Demographic Data

51 records were filled in, 24(47%) from rural doctors and 27(53%) from specializing doctors, of which there were 30 men(58%) and 21 women(42%) (figure 1,2). The mean age of the participants in the study was 28.6 years old, with a standard deviation of 4.6 years (SD±4.6).

Treating patients with HIV infection

Approximately 25, 5% (n=13) of the participants stated that he/she has treated a patient with AIDS infection. Only 19% (n=10) of them would be willing to specialize in HIV patients care. Nearly 90.2% (n=46) were of the opinion that the medical confidential should be applied to all HIV patients.

Figure 1. Medical Screening

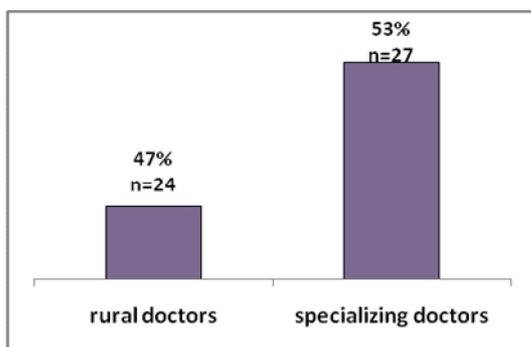
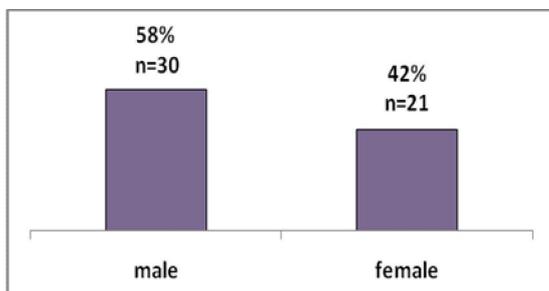


Figure 2. Sex Screening

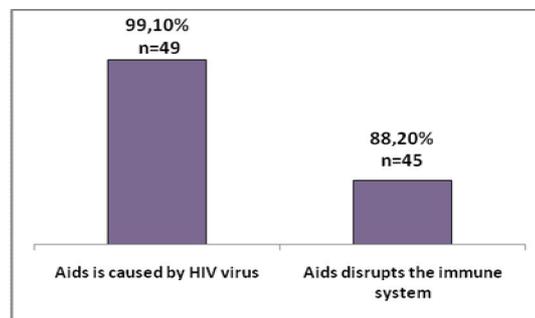


Knowledge

Almost 96.1% (n=49) of the participants are aware that AIDS is caused by HIV virus, while 88.2% (n=45) acknowledge that the virus disrupts the immune system and 92.2%

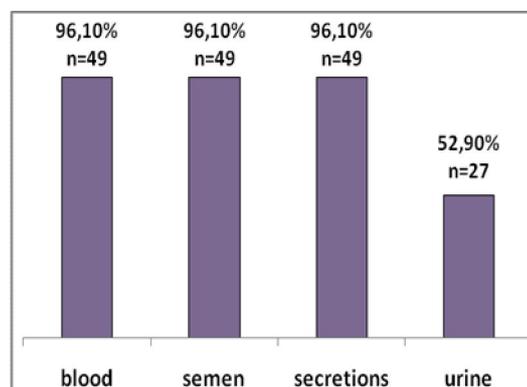
(n=47) recognize the symptoms of the disease (figure 3).

Figure 3. Knowledge of the causes and consequences of HIV infection



A percentage of 96.1% (n=49) of the inquired are aware that HIV virus is detected in blood, semen and secretions, which is a rather encouraging result, but 52.9% (n=27) believe that the virus is transmitted through urine, a fact that should most certainly cause worries, given that the particular question referred to non macroscopic mixture of blood and urine(figure 4).

Figure 4. Knowledge of Aids Detection



Concerning the knowledge of newly qualified doctors about the ways of AIDS transmission, the vast majority of them (98%, n=50) considers that AIDS can be spread through sexual intercourse, blood transfusion and needle-stick injuries. It's worth mentioning that a percentage of 13.7% (n=7) of doctors consider that AIDS can be transmitted through social kiss and moreover that 7.8% (n=15) of them through insects' bites (table 1).

Table 1. Knowledge of HIV transmission

Knowledge about the ways of AIDS transmission	
Blood transfusion	98% n=50
Sexual intercourse	98% n=50
Needle-stick injury	98% n=50
Social kiss	13,7% n=29
Insects' bites	7,8% n=15

90% (n=46) of the participants mention that high risk groups for HIV infection are prostitutes, homosexuals, people with multiple sex partners and transfused patients. Only a percentage of 62.75% (n=32) enrolls health-care professionals in the high risk group for HIV infection(table 2).

As far as the necessary preventive measures for in patients with HIV infection is concerned, the vast majority of the participants (85-98%) acknowledge that gloves, masks, proper hand-washing and special care so as to avoid needle-stick injuries should be acquired. Only a percentage of 55% (n=28) is of the opinion that HIV patients should be treated in separate wards (figure 5).

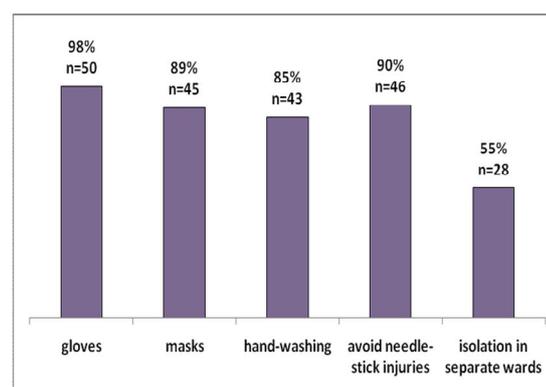
Discussion

Clinical experience of the inquired doctors, as far as treatment of HIV patients is concerned is not detected in high percentages in our study. Only a percentage of 25.5% mention that they have treated a patient with HIV infection, mainly because of the low grade of clinical experience (specializing and rural doctors). The mean age of the participants in our study is 28.6 years old. Over 90% of doctors are aware of HIV symptomatology and of the disease transmission ways. On the contrary, extremely low knowledge rates, as far as AIDS infection is concerned, are detected in a similar study in India (Kuriem, 2007), in which 2200 doctors and other health-care professionals from 10 different hospitals of the country have participated and the results revealed that only 49.7% of them had satisfactory knowledge of AIDS infection. A similar study in Morocco (Hossini, 2000) reports that only 50% of newly-qualified doctors know intimately of AIDS infection.

In Mexico(Fusilier,1998) the knowledge percentage rate is approximately 82%, while in Nigeria(Adelekan,1995; Umeh,2008; Reis, 2005) is almost 90%.

Table 2. Knowledge of high risk groups

Knowledge about the high risk groups	
Prostitutes	90% n=46
Homosexuals	90% n=46
People with multiple sex partners	90% n=46
Transfused patients	90% n=46
Health-care professionals	62,7% n=32

Figure 5. Knowledge of the necessary preventive measures for inpatients with HIV infection

Extremely high knowledge rates of AIDS infection (96%) are met in Denmark(Sandbaek,1995) a fact which is in accordance with the evidence of our study. Nearly 98% of newly-qualified doctors are conscious of the main transmitting ways of HIV virus in the general population, while quite a few believe that the virus can be transmitted through social kiss (13.7%) or through insects' bites (7.8%). Extremely high knowledge rates of AIDS infection, similar to our study, are met in health-care professionals in USA (Davidson,1993; Wallack,1989; Stanford,1988) and Australia (Smith,2005). Much decreased knowledge rates of AIDS transmission (76%) is seen in newly-qualified doctors in Spain (Almeda, 2003). A comparative study (Najem, 1998) between sophomore students of the

Universities of USA and Nigeria, revealed that while students from USA seem to be aware of the main transmitting ways of AIDS infection in a percentage of 89%, students from Nigeria believe that AIDS can be transmitted through kissing in a percentage of 12%, through sharing toilet seats in a percentage of 11% and through insects' bites in a percentage of 16%.

A very small percentage of participants of our study would willingly specialize in intense care of HIV patients, a fact that indicates their anxiety and discomfort. A study in Morocco (Hossini,2000) revealed that 56% of doctors are quite anxious when they treat a patient with AIDS infection, while in a similar study in Mexico(Fusilier,1998) 87% of doctors state that they are very anxious treating an inpatient with AIDS infection. On the contrary, a study in Nigeria (Adelekan,1995) showed that only 24% of doctors share the same anxiety. In the same study, it's worth noting that 35% of doctors were not willing to take part in any surgical operation concerning HIV patients.

In our study, knowledge of the necessary preventive measures while treating an inpatient with HIV infection reaches a substantial increased rate (85-98%). The only measure, which is reported by newly-qualified doctors at a considerable lower rate (55%), is isolation of HIV patients in separate wards.

According to findings of similar studies(Van Servellen,1988; Pallikadavath,2005), doctors seem to be aware of the necessary preventive measures, but at a significant lower rate. In particular, the study from Morocco(Hossini,2000) reported that only 75% of doctors are aware of the preventive measures for inpatients with HIV infection, while the study from Mexico(Fusilier,1998) reported a comparative rate of 78%. On the contrary, according to the study from Denmark(Sandbaek,1995) newly-qualified doctors seem to be better educated / updated, since approximately 75% of them recognize that HIV patients should be isolated in separate wards (a finding which is widely different from the results of our study).

Lastly, increased knowledge rates of high risk groups for AIDS infection (approximately 90%) is met among new

doctors, but it's noteworthy that only 62.7% of them recognize that health-care professionals are a part of this risk group, something we see in other studies too (Singh,2001; Lieber,2006).

Conclusion

The present study revealed gaps in the knowledge of health care workers about HIV infection. We found that medical personnel in our hospital had deficient knowledge about the modes of HIV transmission. The knowledge and attitudes of newly-qualified doctors as far as HIV infection is concerned is in general terms satisfactory. The fact that we enrolled newly-qualified doctors justifies the lack of clinical experience, which is most certainly the cause of insecurity and lack of knowledge, which is detected in our study. Nevertheless, it's imperative that we constantly inform and update newly-qualified doctors about AIDS infection, in order to minimize their inhibitions and compensate for the lack of knowledge, which is commonly observed in new doctors.

In conclusion, the results indicated a need for educational initiatives of HIV and AIDS for medical staff. This study revealed that well-coordinated continuing education of HIV/AIDS for all categories of health care workers is recommended as a vital strategy in the crusade against HIV. Training on risk management and individual responsibilities regarding safety can improve the present situation of infection control. Employers should provide written protocols of post exposure prophylaxis

Future large-scale studies should most certainly give more information and trustworthy data about the knowledge rate and attitudes of newly-qualified doctors towards AIDS infection.

References

- Adelekan ML, Jolayemi SO, Ndom RJE, Adegboye J, Babatunde S,(1995). "Caring for people with AIDS in a Nigerian teaching hospital: staff attitudes and knowledge". *AIDS Care*, 7(1):63-72
- Almeda J, Allepuz A, Simon BG, Blasco JA, Esteve A, Casabona I, Barbara J, (2003). "Non-occupational post-exposure HIV prophylaxis. Knowledge and practices among physicians and groups with risk behaviour". *Med Clin (Barc)*. 121(9):321-6

- Bartlett John G, M.D. "The Hopkins HIV Report, Occupational Exposure to HIV: Revised"(1996). Hopkins Policy, 8(2): 10-122
- Centers for Disease Control (CDC), (2004). "Overview of HIV in Healthcare Settings. National Center for Preparedness, Detection, and Control of Infectious Diseases (NCPDCID)". Available at <http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2004report>
- Currey J, Johnson M, Ogden B,(1990). "Willingness of health-professions students to treat patients with AIDS". *Academic Medicine*, 65(7):45-78
- Davidson G, Gillies P,(1993). "Safe working practices and HIV infection: knowledge, attitudes, perception of risk, and policy in hospital". *Quality of Health Care*, 2(1):21-6
- Dement JM, Epling C, Ostbye T, Pompeii LA, Hunt DL,(2004). "Blood and body fluid exposure risks among health care workers: results from the Duke Health and Safety Surveillance System". *American Journal of Industrial Medicine*, 46(6):637-48
- Essien EJ, Ross MW, Ezedinachi ENU, Meremikwu M, (2000). "Measuring AIDS fears in health workers: structure of the FAIDSS across countries". *International Journal of Intercultural Relations*. 24(1):125-129
- Flaherty John, (2000). "The Evolution of HIV (review)". *Perspectives in Biology and Medicine*, 43(4): 624-625
- Fusilier M, Manning MR, Santini Villar AJ, Torres Rodriguez D,(1998). "AIDS knowledge and attitudes of health-care workers in Mexico". *J Soc Psychol*. 138(2):203-10
- HCDC, (2008). "Annual Edition of the Hellenic Center of Disease Control and Prevention". *HIV/AIDS Surveillance Report in Greece*, 23:5-44
- Hossini CH, Tripodi D, Rahhali AE, Bichra M, Betito D, Curtes JP, Verger C, (2000). "Knowledge and attitudes of health care professionals with respect to AIDS and the risk of occupational transmission of HIV in 2 Moroccan hospitals". *Sante*. 10(5):315-21
- Kalichman, Seth C, (1995)."Understanding AIDS: A guide for mental health professionals". *American Psychological Association*, 420-421
- Kurien M, Thomas K, Ahuja RC, Patel A, Shyla PR, Wig N, Mangalani M, Sathyanathan M, Kasthuri A, Vyas B, Brogen A, Sudarsanam TD, Chaturvedi A, Abraham OC, Tharyan P, Selvaraj KG, Mathew J, (2007). "India CLEN HIV Screening Study Group. Screening for HIV infection by health professionals in India. ,20(2):59-66
- Lieber E, Li L, Wu Z, Rotheram-Borus MJ, Guan J ,(2006). "National Institute of Mental Health (NIMH) Collaborative HIV Prevention Trial Group. HIV/STD stigmatization fears as health-seeking barriers in China". *AIDS Behaviour*, 10(5):463-71
- Najem GR, Okuzu EI, (1998). "International comparison of medical students' perceptions of HIV infection and AIDS". *Journal of the National Medical Association*. 90(12):765-74
- Pallikadavath S, Sanneh A, McWhirter JM, Stones RW,(2005). "Rural women's knowledge of AIDS in the higher prevalence states of India: reproductive health and sociocultural correlates". *Health Promotion International*, 20(3):249-59.
- Reis C, Heisler M, Amowitz LL, Moreland RS, Mafeni JO, Anyamele C, Iacopino V,(2005). "Discriminatory attitudes and practices by health workers toward patients with HIV/AIDS in Nigeria". *PLoS Medicine*. 2(8):246.
- Roumeliotou A, Kornarou E, Papaevangelou V, Spiropoulou P, Ktenas E, Stergiou G, Papaevangelou G,(1992). "Knowledge, attitudes and practices of Greek health professionals, in relation to AIDS". *European Journal of Epidemiology* 8:812-815
- Sandbaek A, Kragstrup J,(1995). "Role of Danish general practitioners in AIDS prevention". *Scandinavian Journal of Primary Health Care*, 13(4):307-15
- Searle Stephen,(1987) . "Knowledge, attitudes and behavior of health professionals in relation to AIDS". *The Lancet*, 329(8523):26-28
- Smith DR, Leggat PA, Takahashi K,(2005). "Percutaneous exposure incidents among Australian hospital staff". *The International Journal of Occupational Safety and Ergonomics*, 11(3):323- 30
- Singh D, (2001). "Health care workers with AIDS: the patient's right to know". *Medical Law*. 20(1):49-62
- Stanford J, (1988). "Knowledge and attitudes to AIDS". *Nursing Times*, 8:47-50(14)
- Umeh CN, Essien EJ, Ezedinachi EN, Ross MW,(2003). "Knowledge, beliefs and attitudes about HIV/AIDS-related issues, and the sources of knowledge among health care professionals in southern Nigeria". *Journal of the Royal Society for the Promotion of Health* , 128(5):233-9
- UNAIDS/WHO, (2003). "Joint United Nations Programme on HIV/AIDS. *Epidemiological fact sheet :Middle East and North Africa*".
- U.S. Public Health Service,(2001). "Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV and HIV and Recommendations for Postexposure Prophylaxis". *MMWR Recommendations and Reports* 29;50(11):1-52
- Uwakwe C,(2000). "Systematized HIV/AIDS education for student nurses at the University of Ibadan, Nigeria: impact on knowledge, attitudes and compliance with universal precautions". *Journal of Advanced Nursing*, 32(2):416-424
- Van Servellen GM, Lewis CE, Leake B,(1988). "Nurses' responses to the AIDS crises: implications for continuing education programs". *Journal of Continuing Education for Nurses*, 19:4-8
- Wallack JJ,(1989). "AIDS anxiety among health care professionals". *Hospital Community Psychiatry*, 40:507-510
- World Health Organization(WHO)(2007). "HIV/AIDS Knowledge Case Improved treatment starts with improved knowledge".
- Žakula N, Radivojević J,(2008). "Healthcare personnel and HIV prevention. In: Proceedings of the Scientific Meeting "Medical and social aspects of HIV infection and AIDS", *Central European Journal of Public Health*, 16 (3): 134-137