

# Greek Healthcare Students' Knowledge and Perceptions on the AIDS epidemic

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## PROFESSIONAL PAPER

### SUMMARY

**Introduction:** The HIV infection is regarded as one of the most serious threats for public health worldwide and the role of healthcare professionals in tackling the epidemic is of uttermost importance. According to the literature there is a profound lack of knowledge, either in the population at large or also among students and healthcare personnel. **Scope:** the current study investigates the level of knowledge, beliefs and perceptions of healthcare students regarding AIDS and their views regarding the role of the health authorities and their preventive strategies against AIDS. **Methods:** 200 healthcare students, randomly assigned according to the study design were reached and completed a questionnaire with questions on demographic data, on knowledge acquisition and their personal beliefs, practices and attitudes on the AIDS disease. **Results:** the data analysis indicated that the level of knowledge, attitudes and beliefs of the healthcare students is sufficient regarding the methods of the virus transmission, the natural history and the social consequences of the disease. Insufficient knowledge was indicated regarding the clinical and laboratory findings and the therapeutic treatment of the disease. Almost most participants admitted to have personally adopted a healthy sexual behavior, due to the risk of contracting the disease in an adverse case and the majority responded positively regarding the use of condoms. A high percentage of the sample would be willing to have an HIV carrier/patient in their home or in their friendly social environment. On the contrary they would be rather reluctant to treat an AIDS patient in their ward. **Conclusions:** preventive measures for combating the AIDS epidemic should be introduced in parallel with ongoing targeted education addressing healthcare students and employees in order to sensitize them towards the nature of the AIDS disease and its social stigma. The above is of paramount importance for safeguarding the expansion of the disease.

**Keywords:** AIDS; HIV; knowledge; attitudes; perceptions; healthcare students.

## 1. INTRODUCTION

The HIV infection is regarded as the number one thread for public health worldwide. There has been 39.5 million HIV positive carriers, from which 37.2 million were over 21 years old, and 2.5 million were under 15 years old (1). Since the onset of the AIDS epidemic until recent years, the disease prevalence was found to be increasing (2). In the midst of the nineties the heterosexual transmission prevalence increased in the general Greek population (3), (4). Immigrants coming from the sub-Saharan area, Central and East Europe are the most common cases included in this high risk group (5). Researchers report that the increase in the numbers of HIV carriers and patients in Greece is due to a change in sexual behavior, focusing on multiple sexual partners as well as on the fact of not taking any precautions during the sexual act. This problem is furthermore complicated by the fact of the increasing number of immigrants coming from third countries. In a worldwide scale the number of HIV positive carriers from the year 2008 amount to 39.5 million people. The majority of the HIV positive diagnosed cases are young adults in the age of 35 and older.

There are quite a few research studies regarding the investigation of knowledge and perceptions regarding

AIDS. A research study to investigate students' knowledge and attitudes towards the disease was undertaken by from Grigoriadou et al (6) addressing 720 young students registered at the official Greek Unemployment Organization. The results of the study indicated racism towards HIV carriers and patients. Precisely a percentage of 27.1% mentioned that HIV carriers and patients should be socially isolated to avoid spreading the disease, while the 15.1% reported to be indifferent towards AIDS victims. The vast majority stated that specific policies should be established to protect HIV carriers and patients; meanwhile, a similarly high percentage feels sympathy for these people. In another study (7) among students of Athens Educational and Technological Institutions, there was found a percentage of nearly 90% who believes that HIV carriers and patients pose a threat for the society, meanwhile the 31.75% would feel absolutely embarrassed if notified to be an HIV carrier. On the contrary, a very high percentage reported that it would still socialize with HIV positive carriers and patients. According to another study addressing Public Health students in Greece (8), an unwillingness to provide care to HIV patients was indicated. Less than half students, mostly males, accepted to provide care to HIV patients. Regarding the attitudes of healthcare students towards HIV carriers or patients,

a percentage of 21% suggested that HIV victims should continue their studies. More than half participants would discontinue any sexual relationships if notified that their sexual partner is an HIV carrier.

Regarding the attitudes of immigrants against AIDS, in an epidemiological study of 100 Albanian women and 100 women of Bulgarian origin at the age group of 17-48 years old, it was found that the 59.5% did not sympathize with HIV carriers and patients and 27% mentioned that in case they would find out that their sexual partner was an HIV carrier, they would stop the relationship (9). In the year 2006 (11) in a Greek survey addressing the general population there have been found variations between attitudes towards the AIDS victims. In specific, a percentage of 80% reported that the AIDS patients should be living within the society, while only 10% mentioned that if an HIV child carrier/patient was in the same class with their own children, they would move them to another school.

It is evident that the attitudes towards the AIDS disease are influenced by the level of relative knowledge. Healthcare students in Greece answered general knowledge questions about AIDS correctly in a percentage of 72%, even though only the 43.2% were self reported to have acquired sufficient knowledge on AIDS (7). Regarding the sexual behavior, only the 30% reported to be worried about HIV virus infection due to unsafe sexual behavior. Use of condoms has been mentioned to be common among male students. Factors related to the level of knowledge were found to be the age group, gender, school grades and the religiosity. Regarding the sexual behavior of immigrant women living in Greece (9), it has been reported to be intense, monogamous, with the use of condoms only to prevent undesirable pregnancy. A similar study focusing in the general population has been undertaken fairly recently (10) with a selected sample from visitors of a health exhibition held in 2006. 171 questionnaires were given to 16-41 year old participants of the exhibition and there were found that a significant percentage of 19.23% very rarely using a condom during the sexual intercourse. In many cases this was justified by the existence of a monogamous relationship. Proper use of a condom has been reported by a percentage of 63.6% of secondary education students. The 71.4% of youngsters under the age of 18 also reported, to be using condoms. The level of knowledge regarding the sexually transmitted diseases is inadequate for participants under the age of 18; meanwhile the age group of 26-35 years old has the highest level of relevant knowledge. Similar results have been found among general population regarding the methods of HIV transmission (11). Precisely, a percentage of 15% is not aware that the virus can be transmitted vertically from an infected mother to the child and is unaware that the virus can be transmitted by a common toothbrush; meanwhile the 30% believes that the virus can be transmitted via insect bites.

A research study addressing a control group of 300 participants of general population and 300 Higher Technological Educational Institute students (12), indicated that students rather than the general population are more knowledgeable about the disease. Students also reported to use condoms in a higher percentage (58.8%) than the general population (48.8%) during their sexual intercourse.

Both categories were reported to be little interested about the methods of HIV virus transmission and protection (general population 89%, students 72%). Meanwhile a higher percentage of students (45.2%) rather than the general population (35.1%) reported to be willing to learn more about the Elisa and Western blot test for the HIV virus detection. Students feel a higher risk of contacting the virus if they don't use precaution measures. A 72.5% reported to have been informed through printed material and the percentage of the general population amounts to 64.1%. Both students and the general population reported that health education strategies adopted by the state are insufficient and should focus on the needs of high risk groups and their families. The fact that a high percentage is not keen on learning more about AIDS indicates a lack of systematic efforts from health authorities to impart knowledge regarding AIDS.

A similar study has also been conducted in 2006 (13) addressing 376 individuals calling a hotline about sexually transmitted diseases. 189 people called the hotline to ask simple information and 187 called to report a possible contamination by a sexually transmitted disease. The second group mentioned that they would have possibly contacted the sexually transmitted disease through a sexual intercourse. A 37% mentioned that it did not use a condom during the sexual act, while the survey indicated high percentages of contamination by the HIV virus especially for people over 29 years old. It is striking though that a percentage of 8% who called the hotline and had a sexual intercourse with an HIV carrier didn't use a condom. Finally, in a research study on AIDS (14) there was found an inadequate level of knowledge regarding AIDS in certain categories of health personnel. Especially, there is a lack of knowledge regarding the prevalence of AIDS and the methods of transmission of the disease. A high percentage (two out of three participants) is confused about the virus contamination and the lethal outcomes of the disease, believing that the HIV virus is more contagious than the HBV (61%). Meanwhile a percentage of 94% answered correctly questions asking about the virus detection within biological excretions (blood, urine etc).

## 2. SCOPE AND METHODS

Based on all the above mentioned research studies, there is in some cases a profound lack of knowledge, either in the population at large, in high risk groups, or even in students and healthcare personnel. This is due to insufficient health education campaigns and health prevention strategies regarding AIDS, adopted by the health authorities. The present study aims to further investigate the level of knowledge, attitudes and beliefs of the healthcare students studying at the faculty of Nursing, University of Athens in Greece. This study is keen to analyse the parameters that have an impact on the disease and the role of the health authorities in preventing the spread of the disease. A representative sample of healthcare students has been used, and this is of particular interest, because this group of individuals is expected to be more sensitized regarding the disease due to their knowledge and experience based on their clinical practice.

The study has been conducted with the use of a questionnaire which includes five sections. The first section focuses on demographic data while the second section aims to evaluate the participants' level of knowledge regarding the disease. The third section includes questions regarding the sexual behavior of the participants. The fourth section aims to capture the attitudes towards HIV positive carriers and patients, specifically investigating the role of the family and friends in accepting HIV positive carriers and patients. Finally, the fifth section refers to the attitudes regarding the role of the health authorities to prevent the spread of the epidemic. The questionnaire was completed by 200 undergraduate and post-graduate students of a University Nursing department in the Athens area.

### 3. RESULTS

The sample average age is 22 years (18-42 years, SD=4). A percentage of 79% (N=158) are female and the 21% (N=42) are males. Regarding the place of origin, 27.1% grew up in the wider Athens area (N=52), a percentage of 10.4% (N=20) came from large cities, the 34.4% (N=66) came smaller cities, while the 17.7% (N=34) grew up in provincial non urban regions. Finally the 10.4% (N=20) come from outside Greece. With regard to the father's educational level, only 11.2% (N=22) have completed the tertiary education while 32.7% (N=64) are University graduates. Regarding the mother's educational level, the 13.1% (N=26) have completed the tertiary education and 21.2% (N=42) are university graduates.

As far as the self-evaluation of the knowledge on AIDS is concerned, the results of the study indicate that 5.1% (N=20) are poorly informed as far as the methods of transmission are concerned, the 52% (N=104) mentioned to be sufficiently informed on AIDS and the 42.9% (N=76) mentioned to be very well informed. Meanwhile none of the students reported ignorance on the methods of transmission of the disease.

Regarding the knowledge of the clinical symptoms of the disease, a relatively high percentage (30.3%, N=60) reported to be poorly informed, meanwhile the 49.5% (N=98) and the 20.2 (N=40) reported sufficiently and very well informed respectively. Similarly, for the laboratory findings it has been found that more than half of the sample is poorly or never informed. Precisely, 11.1% reported to be totally ignorant (46.5%, N=22), poorly informed (46.5%, N=92), and sufficiently informed (37.4%, N=74), meanwhile only 5.1% (N=10) self evaluated their knowledge as very good.

As far as the therapeutic treatment of the disease is concerned, the 5% (N=10) of the sample reported to be never informed, the 34% (N=68) reported to be poorly informed, while a percentage of 52% (N=104) reported to be sufficiently informed. Finally the 9% (N=18) of the participants were reported to be very well informed. The last question of this section is concerning with the self-evaluation of the students on the level of knowledge about the outcomes of the disease. A percentage of 22% of the students reported to be poorly informed (N=126), the 15% (N=30)

reported to be very well informed, meanwhile none of the students self evaluated themselves to be totally ignorant on this issue. Finally as far as the level of knowledge on the social consequences of the disease are concerned, the 27% reported thoroughly informed (N=54), the 55% (N=36) reported poorly informed.

Regarding the use of a condom during the sexual act, the 74.2% (N=144) reported to be using condoms all the time, 21.6% (N=42) reported to sometimes use condoms meanwhile a percentage of 4.2% (N=8) reported to use a condom rarely or none of the times during the sexual intercourse. Only 10 participants mentioned to use other measures of protection, especially contraceptives (N=6), as well as interrupted sexual intercourse (n=4). Regarding the number of sexual partners during the previous year, the 19.2% reported not to have any sexual partner at all, the 66.7% to have one or two sexual partners, while a percentage of 14.1% (N=28) had more than three sexual partners.

Regarding the acceptance of an HIV carrier but not yet AIDS patient, in the family, the 41% (N=82) reported that they would definitely accept an HIV positive person at home, the 49% (N=98) reported that they would rather try to accept such a person in the family, the 8% (N=16) reported that they would only in some cases accept such an individual in their home environment, and only four participants reported that they would never accept such a person in the family. Regarding the acceptance of an already AIDS patient in the family, the 39.4% (N=78) reported that they would definitely accept them in their home environment, the 41.4% (N=82), would rather accept them, while the 14.1% (N=28) reported that they would probably accept such a person in the family environment. Only 5.1% (N=10) of the participants reported negatively.

As far as it concerns the acceptance of an HIV positive carrier in a friendly social environment, the 34% (N=68) reported that they would definitely accept such a person, the 55% (N=110) mentioned that they would rather accept such an individual and the 10% (N=20) reported rather not. Finally, only two participants in the study reported negatively. Regarding the acceptance of an AIDS patient in a friendly social environment, the 29.9% (N=58) reported that they would definitely accept an AIDS patient. The 48.5% (N=94) reported that they would rather accept such a person, the 18.6% (N=36) reported rather not and finally the 3.1% (N=6) reported negatively.

Interesting, proved also to be the results to the question of the provision of care to an AIDS patient. The 33% (N=66) reported that they would definitely provide care to an AIDS patient, the 47% (N=94) reported rather positively,

Knowledge Area (self evaluation)	Very well informed	Sufficiently informed	Poorly informed	Totally Ignorant
Methods of transmission	42,9% (N=76)	52% (N=104)	5,1% (N=20)	-
Clinical symptoms	20,2% (N=40)	49,5% (N=98)	30,3% (N=60)	1% (N=2)
Laboratory findings	5,1% (N=10)	37,4% (N=74)	46,5% (N=92)	11,1% (N=22)
Social Consequences	27% (N=54)	55% (N=110)	18% (N=36)	-
Therapeutic Treatment	9% (N=18)	52% (N=104)	34% (N=68)	5% (N=10)
Outcomes of the disease	15% (N=30)	63% (N=126)	22% (N=44)	-

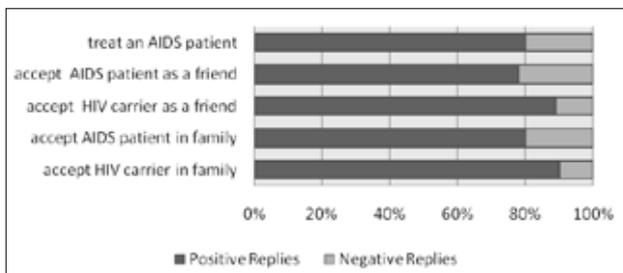
Table 1: Self-evaluation on the level of knowledge of AIDS

	Definitely Yes	Probably Yes	Probably Not	Definitely Not
Would accept an HIV carrier in family	41% (N=82)	49% (N=98)	8% (N=16)	2% (N=4)
Would accept an AIDS patient in family	39.4% (N=78)	41.4% (N=82)	14.1% (N=28)	5.1% (N=10)
Would accept an HIV carrier as a friend	34% (N=68)	55% (N=110)	10% (N=20)	1% (N=2)
Would accept an AIDS patient as a friend	29.9% (N=58)	48.5% (N=94)	18.6% (N=36)	3.1% (N=6)
Would provide treat an AIDS patient	33% (N=66)	47% (N=94)	16% (N=32)	4% (N=8)

Table 2: attitudes towards HIV carriers and patients

the 16% (N=32) reported rather negatively. Meanwhile, 4% (N=8) of the participants reported absolutely negatively.

Fascinating are also the results to the question regarding the students beliefs on the policies adopted by the state to prevent the spread of the disease are concerned. More than 80% reported that the strategies implemented so far for the AIDS prevention proved to be insufficient. Precisely, 20,4% reported that the strategies adopted by the state proved to be inadequate, the 18,3% reported that the policies implemented by the health authorities isolate outside the society the HIV positive carriers and patients, the 16,1% mentioned that the role adopted by the state to combat the AIDS epidemic is rather insufficient, meanwhile the 19,4% reported that the overall strategies implemented so far by the state had a rather negative impact regarding the adoption of protective measures against the AIDS disease.



Graph 1: attitudes of healthcare students towards HIV carriers and patients

#### 4. DISCUSSION

The healthcare students, who participated in this study have been found to be adequately informed on the methods of transmission of the AIDS virus, meanwhile, a rather small number was reported to be poorly informed on the subject matter. In contrast, regarding the knowledge on the clinical symptoms of the disease, only one to five participants were found to be very well informed, while the majority of the sample was sufficiently informed. Meanwhile, one out of three participants reported to be poorly informed. Even higher is the percentage of those poorly informed about the laboratory findings of the disease, with almost half of the sample to report totally uninformed on the subject matter.

Regarding the social consequences of AIDS, four out of five participants report to be sufficiently or even very well informed on the multiple social consequences of the disease, meanwhile, regarding the therapeutic treatment of the disease, two out of five participants self evaluate their level of knowledge as quite low on the subject matter. To the question on the level of knowledge on the outcome of the disease, one out of five participants reports to be either poorly informed or totally uninformed.

As far as it concerns the sexual preferences, the vast majority of healthcare students reported to use a condom in a common base during the sexual intercourse. This finding is actually quite high when compared with past research studies conducted in Greece. Precisely, in a similar study (12), the partici-

pants used a condom in a percentage of 58.8% only. As far as it concerns the attitudes of the participants in the study towards the HIV carriers indicated that the vast majority of the study participants would accept them within their home environment. Lower is the acceptance rate of an AIDS patient in a home environment (80.8%). Almost identical are the results regarding the acceptance of an HIV carrier and patient in a friendly social environment. Similar proved to be also the results found in other research studies conducted in Greece addressing young participants, not pertaining in a special group, such as health students.

The finding that only one out of three participants would definitely provide care to an AIDS patient in a hospital in the case they are given the choice to accept or reject the provision of care indicates that there is an self underestimation of the nurses' significant role in care provision and lack of adequate knowledge regarding safety precautions and transmission of HIV. Unfortunately, this fact may also indicate the existence of racism towards AIDS carriers and patients. Presumably, this low percentage may be linked to the fear of transmission of the HIV virus through needle piercing, but it would be rather useful to further investigate these aberrant behaviors of healthcare students.

Regarding the attitudes of the students towards the role of the health authorities to the provision of HIV carriers and patients, more that 80% reported insufficient strategies adopted by the state. Overall, the role of the health authorities is mentioned to be inadequate and insufficient, leading to a further isolation of the HIV positive carriers and patients. The same results on the subject matter have been found in a study of both the general population and students of the Technological Educational Institution of Patras (12).

Finally, summarizing the knowledge, attitudes, and beliefs of the health students in Greece, it has been proved that the majority of the sample is quite sufficiently informed regarding the methods of transmission of the virus, the outcome and the social consequences of the disease, but is rather insufficient regarding the therapeutic treatment, the clinical symptoms and the laboratory findings of the disease. Almost all the participants reported a health sexual life and a common use of condoms. In conclusion, the majority of the participants would accept HIV carriers and patients in their family and friendly social environment, meanwhile a very high percentage of the sample would unwillingly provide care to HIV positive carriers and patients if they had the choice to do so.

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