

Knowledge, attitudes and practices towards patients with HIV/AIDS in staff nurses in one university hospital in Sicily

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ABSTRACT

BACKGROUND: nurses' knowledge, attitudes and practices towards patients with HIV/AIDS are of ongoing interest, especially in developing countries. Nothing or very little is known about Italian nurses.

METHODS: HIV/AIDS knowledge, attitudes and behaviours of the nurses (n=107) from one university hospital in Catania, Sicily, were documented. Comparisons among nurses belonging to different Operative Units (O.U.) were conducted by the chi-square test ($P < 0.05$).

RESULTS: although HIV was nurses' main concern in regard to contracting infections in the workplace (54%), the vast majority of them (98%) had never refused an HIV/AIDS patient care assignment. Moreover, despite their concern of being more at risk of contracting HIV than the general population (41%), a not negligible percentage of nurses did not use gloves routinely (21%) and only a few treated all patients as potentially HIV-positive (9%). The vast majority of the respondents knew the meaning of AIDS (87%) and of a positive serological test (78%). On the contrary, a relatively low percentage of them knew what is the 'window period' (62%) and were acquainted with HIV pathophysiology (65%). No statistically significant differences in terms of risk perception were found between nurses who had previously attended an HIV/AIDS workshop, lecture or specific course (43%) and nurses who did not (57%). Level of knowledge was positively associated to age ($P = 0.000$) and to education ($P = 0.016$), and it was found higher in nurses working in a O.U. of Infectious Diseases.

CONCLUSIONS: data from our study show that also in developed countries, such as Italy, nurses could have some misconceptions and concerns about HIV/AIDS. The importance of examining the impact of continuing education on nurses' preparedness to care for patients with HIV/AIDS and to prevent the risks of occupational HIV transmission is discussed.

Key words: HIV/AIDS; Nurses, Practices; Attitudes; Knowledge

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INTRODUCTION

Taking care of patients with HIV or AIDS requires special nursing knowledge and skills.

Nurses, in particular, are the largest paramedical professional group caring for patients with AIDS. Nevertheless, as far as we know, in the last decade their knowledge, attitudes and practices towards

patients with HIV/AIDS have been investigated mainly in developing countries, with some studies indicating negative and discriminatory behaviours, and others showing more empathic and positive attitudes. Studies exploring HIV/AIDS knowledge and practices of nurses have also pointed in the lack of knowledge about HIV transmission and risk prevention, coupled with fear of contagion [1-9]. There is evidence that there are still nurses who have misconceptions about HIV detection from human biological specimens, such as oral secretion, urine, tears and sweat [7-9]. In particular, there are gaps in HIV transmission and risk prevention knowledge, so that there are still nurses who do not treat all biological specimens as potentially HIV-positive [10], who believe the greatest risk of exposure to HIV/AIDS caring comes from incontinent patients with HIV/AIDS [5] or who affirm that HIV-positive patients should not be put in rooms with other patients when admitted to hospital [11]. Thus, at the moment, in developed countries, such as Italy, there is lack of information on nurses' knowledge about identification of HIV high risk groups, HIV/AIDS symptoms, diagnostic tests and universal precautions. For this reason, the present survey aimed to investigate knowledge level of HIV/AIDS together with attitudes and behaviours towards patients with HIV/AIDS in a sample of Italian nurses.

METHODS

Aim

The purposes of this study were: *(i)* to ascertain nurses' attitudes, perceptions and workplace practices in dealing with HIV-positive patients; *(ii)* to investigate nurses' HIV/AIDS related knowledge.

Study population

The study was reviewed and approved by the Hospital Administration of the 'Azienda Ospedaliero-Universitaria Policlinico-Vittorio Emanuele'. The study, conducted between October and December 2011, included all medical Operative Units (O.U.) employing nurses in the 'Azienda Ospedaliero-Universitaria Policlinico-Vittorio Emanuele' in Catania (Sicily), a general university hospital of 1 000 beds approximately.

All the nurses (n=107) working in the Hospital considered for the survey were recruited. In particular, the nurses were recruited in the following O.U.: Operative Room (n=13), Gynaecology (n=18), Infectious Diseases (n=17), Internal Medicine (n=17), Respiratory Diseases (n=13) and Laboratory (n=29).

Survey questionnaire

The questionnaire was based on a questionnaire previously employed by the authors to ascertain knowledge, beliefs and attitudes of undergraduate medical students towards HIV infection [12].

The questionnaire included thirty-six questions divided into four sections. The first section asked for demographic data regarding age, sex, civil status, religion and education. The second section asked for professional training, years of work experience, previous medical area of work, and whether the nurses had recently attended an HIV/AIDS workshop or lecture. The third section ascertained whether the nurses refused an HIV/AIDS patient care assignment and whether they wore gloves when handling biological specimens or during routine patient care through a categorical 'yes', 'no' or 'sometimes' answer. One statement measured nurses' perception of their risk of contracting HIV. The final section tested the nurses' knowledge of HIV through questions concerning HIV transmission, methods of destroying HIV outside the human body, laboratory diagnosis of HIV infection.

Assessment of knowledge was made according to whether the answer was correct or incorrect. Non-response and 'do not know' were categorized as incorrect.

The team leader and manager in each ward explained the purpose of the study and the questionnaire was answered by self-administration. Participation in the study was voluntary and no information regarding the nurses' identity was solicited. Participants were given 20 minutes to complete the questionnaires, which were returned directly to the team leader in a prepared envelope to protect anonymity.

Statistical analysis

Data from the returned and completed questionnaires were entered onto a database. Statistical analysis were performed using the

software SPSS 12.1. The demographic variables were analysed by descriptive statistic. Distinct response rates to questions were presented as proportions and analysed by Chi-square test. A P-value of <0.05 was deemed statistically significant. Finally, a cross-tabulation was performed in order to verify which variables could influence knowledge about HIV. To this aim, a score of more than 75% of true answers was considered to assess the level of knowledge.

RESULTS

All the recruited nurses answered and returned the questionnaire completed in full (response rate = 100%).

As reported in Table 1, the vast majority of the recruited nurses had more than 11 years of work experience. Respondents were predominantly female (60%) with a mean age range of 47.42 years. Almost all the nurses were catholic (93%) and married (72%). Overall, 70% attended college, 16% had a postgraduate degree and 14% had a Bachelor's degree. Of the recruited nurses, 43% had attended an HIV/AIDS workshop or lecture (67% in the preceding five years and 33% from more than 5 years).

Nurses' attitudes and behaviours towards HIV/AIDS are reported in Table 2. The nurses were asked whether they had ever refused an HIV/AIDS patient care assignment. Although HIV was nurses' main concern in regard to contracting infections in the workplace (54%), data show that the vast majority of them (98%) had never refused an HIV/AIDS patient care assignment. The nurses

were also asked whether they wear gloves as recommended when handling biological specimens or for patient care. The majority of respondents (79%) used gloves routinely, whereas few respondents (21%) did not. Moreover, despite their concern of being more at risk of contracting HIV than the general population (41%), only few nurses (9%) treated all patients as potentially HIV-positive. The vast majority of nurses (82%) gave a negative answer when asked whether they had friends or family members HIV-positive.

As shown in Table 3 the nurses were also tested on their knowledge about various etiopathological aspects of HIV/AIDS. The vast majority of the respondents showed to know the meaning of the acronym AIDS (87%) and to understand the meaning of having a positive serological test (78%). On the contrary, a relatively low percentage of them knew what is the 'window period' (62%) and that the infection can be transmitted by infected individuals even when symptoms of AIDS are not present (65%). Moreover, nurses were well acquainted with how to diagnose HIV infection (94%) and when tested on their knowledge on how to manage spots or drops of blood by wiping the contaminated area (floor, worktable, etc.), the vast majority of them gave the correct response (79%).

No statistically significant differences in terms of risk perception (fear of contagion, $p=0.105$, and thinking of being more at risk of contracting HIV than the general population due to the profession, $p=0.127$) were found between nurses who had previously attended an HIV/AIDS workshop, lecture or specific course (43%) and nurses who did not (57%). No association between level of knowledge and civil status ($p=0.669$), years of work experience ($p=0.103$) or attendance an HIV/AIDS course or lecture ($p=0.137$) was found. On the contrary, knowledge was positively associated to age ($p=0.000$) and to education ($p=0.016$) (Table 4).

Finally, as shown in Table 5, level of knowledge was found higher in nurses working in a O.U. of Infectious Diseases (94.0% of true answers among nurses working in that O.U.). No other association with the level of knowledge was found.

TABLE 1

NURSES' YEARS OF WORK EXPERIENCE IN EACH MEDICAL WORK AREA				
MEDICAL WORK AREA	1-5 YEARS	6-10 YEARS	> 11 YEARS	TOTAL
GYNAECOLOGY	10	2	6	18
INFECTIOUS DISEASES	2	7	8	17
INTERNAL MEDICINE	3	8	6	17
LABORATORY	7	3	19	29
RESPIRATORY DISEASES	6	4	3	13
SURGERY	3	8	2	13
TOTAL	31	32	44	107

TABLE 2

NURSES' ATTITUDES AND BEHAVIOURS TOWARDS HIV/AIDS		
QUESTION	YES	NO
HAVE YOU EVER REFUSED AN HIV/AIDS PATIENT CARE ASSIGNMENT?	2%	98%
DO YOU THINK TO BE AT RISK TO CONTRACT INFECTIONS IN THE WORKPLACE?	54%	46%
DO YOU THINK TO BE MORE AT RISK THAN THE GENERAL POPULATION?	41%	59%
DO YOU USE GLOVES ROUTINELY WHEN HANDLING BIOLOGICAL SPECIMENS OR FOR PATIENT CARE?	79%	21%
DO YOU TREAT ALL PATIENTS AS POTENTIALLY HIV-POSITIVE?	9%	91%
DO YOU HAVE FRIENDS OR FAMILY MEMBERS HIV-POSITIVE?	18%	82%

TABLE 3

NURSES' KNOWLEDGE ABOUT VARIOUS ETIOPATHOLOGICAL ASPECTS OF HIV/AIDS		
QUESTION	CORRECT RESPONSE	INCORRECT RESPONSE
MEANING OF THE ACRONYM AIDS	87%	13%
MEANING OF HAVING A POSITIVE SEROLOGICAL TEST	78%	22%
MEANING OF 'WINDOW PERIOD'	62%	38%
HIV MODES OF TRANSMISSION	65%	35%
HOW TO DIAGNOSE HIV INFECTION	94%	6%
HOW TO DESTROY HIV OUTSIDE THE BODY	79%	21%

TABLE 4

NURSES' KNOWLEDGE ABOUT VARIOUS ETIOPATHOLOGICAL ASPECTS OF HIV/AIDS		
	DEGREES OF FREEDOM	SIGNIFICANCE
AGE	3	0.000
CIVIL STATUS	4	0.669
ACADEMIC EXPERIENCE	3	0.016
YEARS OF WORK EXPERIENCE	3	0.103
ATTENDANCE OF HIV/AIDS WORKSHOPS, COURSES OR LECTURES	1	0.137
N OF VALID CASES: 107		

DISCUSSION

In the nursing profession, the knowledge that nurses and other healthcare professionals have about HIV/AIDS and their attitudes towards people living with HIV are of ongoing interest, especially in developing countries. Data from our study show that also in developed countries, such as Italy, nurses could have misconceptions and concerns about HIV/AIDS. Obviously, caution should be exercised in generalizing these findings to all the Italian nurses, mainly because the study results were from only one hospital, therefore they might not reflect nurses' attitudes and concerns in other hospitals in Italy. Nonetheless, the variety of O.U. and years of experience suggest that the sample in this study could be representative of the majority of the nurses in the field. Anyway, as far as we know, there are no current or past similar studies in Italy for comparisons.

There is evidence that in developing countries nurses' knowledge of HIV and AIDS shows wide variation from country to country. In particular, the average answers related to HIV and AIDS knowledge generally range from 55% to 75% of the correct answers. Moreover, there is evidence that the strongest area of knowledge seems to be modes of HIV transmission and the weakest HIV pathophysiology [3, 7, 8, 10, 13, 14]. Our results study seem to confirm this evidence because only 62% of the respondents demonstrated to understand the meaning of 'window period', and only 65% of them showed to know that the infection can be transmitted by infected individuals even when symptoms of AIDS are not present.

International literature shows that there are continuing concerns about the reluctance of health-care providers in general, and nurses in particular, to care for patients with HIV [15, 16]. The impact of education on HIV/AIDS knowledge, attitudes and practices has also been reported previously. Anyway, evidence on the relationship between attitudes and knowledge is conflicting,

TABLE 5

CROSS-TABULATION BETWEEN KNOWLEDGE AND MEDICAL AREA OF WORK							
		SURGERY	GYNAECOLOGY	LABORATORY	INFECTIOUS DISEASES	INTERNAL MEDICINE	RESPIRATORY DISEASES
INCORRECT KNOWLEDGE	n.	2	2	5	1	7	4
	%	15.4	11.1	17.2	6.0	41.2	30.8
CORRECT KNOWLEDGE	n.	11	16	24	16	10	9
	%	84.6	88.9	82.8	94.0	58.8	69.2
TOTAL	n.	13	18	29	17	17	13

with some studies reporting a significant positive relationship between levels of knowledge and attitudes towards people living with HIV [5, 17], and others finding a negative correlation [18]. Results from our study show no statistically significant differences in terms of behaviours (98% of the sample stated they had never refused an HIV/AIDS patient care assignment) or risk perception (e.g. fear of contagion and thinking of being more at risk of contracting HIV than the general population due to the profession) between nurses who had previously attended an HIV/AIDS workshop, lecture or a specific course (43%) and nurses who did not (57%). In fact, level of knowledge about HIV was found only related to age and education, as well as to medical area of work, being higher for older nurses, for nurses showing a higher level of education and working in Infectious Diseases (94.0% of true answers). While, no association between level of knowledge and attendance to HIV lectures, courses or workshops was found.

Studies have also pointed to the lack of universal precautions adherence in developing countries, putting healthcare workers at risk of occupational HIV infection. Results from our study show that a not negligible percentage of the enrolled nurses could be considered at risk for occupational infection for at least two main reasons: they did not use gloves routinely when handling biological specimens or for patient care (21%), and they did not use to treat all the human biological specimens as potentially HIV-positive (91%). Data from international literature seem to show that when nurses undergo HIV/AIDS-specific training are more aware of universal precautions for preventing the risks of occupational HIV transmission [11]. Anyway, results from our study show no statistically significant difference in terms of precautions adopted for patient care between nurses who

had previously attended an HIV/AIDS course and nurses who had never undergone it. Thus, our results probably underline the importance of examining the impact of continuing education on nurses' preparedness to care for patients with HIV/AIDS and to prevent the risks of occupational HIV transmission.

Finally, results from our survey might arise one main question: 'Have got all the Italian nurses' accessible guidelines to refer to when caring for HIV/AIDS-positive patients?'. There is evidence that by implementing guidelines for safer injection practices, for example, healthcare workers not only feel protected from occupational HIV infection but are also less likely to discriminate against patients with HIV/AIDS [19]. Thus, it might be interesting to verify whether Italian nurses are generally dissatisfied with the lack of accessible guidelines or not. Anyway, implementing safer practices and guidelines could have a beneficial effect on nurses and, in turn, on patients. At the same time, because of progress in AIDS-related epidemiology, nursing managers should provide opportunities for registered nurses to attend HIV/AIDS education courses on a regular basis. Current studies conducted in developing countries have shown that careful and controlled evaluations of the effectiveness of different models of education are useful in alleviating many of nurses' concerns and in modifying attitudes for the better. Our study suggests that such programmes could be of benefit also in Italy. In fact, although there are numerous HIV/AIDS educational curricula for nurses, to data published, evaluations of the effectiveness of these have been limited primarily to studies conducted in the early years of the epidemic in North America and Europe. Moreover, it is important to examine not only the effectiveness of the programme in changing knowledge, attitudes and behaviours, but also the durability of its impact [20]. Follow-up programmes

could be held 6 months to 1 year after initial workshops. To this aim, a structured in-service education could make a substantial contribution to the sustainability and effectiveness of the initial programmes. In fact, offering continuing education could be useful to prevent loss of skills, could ensure a core of expertise in dedicated HIV inpatient units and, in turn, could encourage nurses to participate in specialty nursing groups in order to promote the individual and collective professional development of nurses involved in

health care to HIV-infected persons.

Anyway, in our opinion the issue remains complex, mainly because of the lack of research focusing on the effectiveness of nurses' HIV-related education in Italy. Thus, similar studies should be conducted at other hospitals in the country to ascertain whether the findings can be replicated. The greater understanding gained by such studies could inform social policies and programmes dealing with HIV/AIDS-related care in Italy.

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