Journal of InterDisciplinary Research Applied to Medicine
JDREAM. Journal of interDisciplinary REsearch Applied to Medicine
JDREAM (2020), v. 4 i. 1, 7-14
ISSN 2532-7518
DOI 10.1285/i25327518v4i1p7
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Attitudes, knowledge and Practices of Nurses towards HIV/AIDS Patients. An Observational, Cross Sectional, Multicenter study

Maria Chiara Carriero[1]; Fabiana Stella[2]; Roberto Lupo[3]; Antonino Calabrò[4]; Cosimo Petrelli[5]; Ilenia Pareo[6]; Marco Rizzo[7]; Maicol Carvello[8]; Valeria Archetta[9]; Luana Conte[10,11]

[1]Psychologist Institute Santa Chiara, Rome, Italy
[2]Nurse at the "RSA Buon Pastore" Lecce, Italy
[3]Nurse at the hospital "San Giuseppe da Copertino", ASL (Local Health Authority) Lecce, Italy
[4]Nurse at the Hospital "Nuovo Ospedale degli Infermi" ASL (Local Health Authority) Biella, Italy
[5]Doctor at the Hospital "San Giuseppe da Copertino", ASL (Local Health Authority) Lecce, Italy
[6]Doctor at the Hospital "San Giuseppe da Copertino", ASL (Local Health Authority) Lecce, Italy
[7]Nurse at the Hospital "Santa Caterina Novella", ASL (Local Health Authority) Lecce, Italy
[8]Didactic tutor of Bachelor of Science (BSc) in Nursing, University of Bologna, Faenza (RA), Italy
[9]Nurse at the Hospital Immacolata Concezione, Piove di Sacco (PD), Italy
[10]Laboratory of Interdisciplinary Research Applied to Medicine (DReAM), University of Salento and ASL (Local Health Authority), Lecce, Italy
[11] Laboratory of Advanced Data Analysis for Medicine (ADAM), Department of Mathematics and Physics "E. De Giorgi", University of Salento, Lecce, Italy

Corresponding author: Luana Conte
luana.conte@unisalento.it

Background. Attitudes, knowledge and practices of nurses towards HIV/AIDS patients are of continuous interest, especially in developing countries. However, in Italy, this topic is still scarcely debated.
Materials and methods. An observational, cross sectional, multicentre study was conducted on a sample of 144 nurses in two Italian Hospitals of the Puglia Region ("Vito Fazzi" Hospital in Lecce and "San Giuseppe da Copertino" Hospital in Copertino (Le)).
Results. A large part of the sample (97.2%, n=140) stated that they never refused to take care of a patient with AIDS. Only 22.9%, (n=33), of the sample had attended a training course and almost half (63.2%, n=91) used the gloves regularly when performing blood samples or when administering therapy to patients. With regard to the assessment of HIV knowledge, the percentage of nurses who know the meaning of the terms " seropositive" (83.3%, n=120), "HIV-positive person" (91.7%, n=132) and "window period" (47.9%, n=69) decreased.
Conclusions. The results of the study show that a non-negligible percentage of nurses could be considered at risk of infection due to non-routine use of gloves, incorrect handling of the patient's biological samples and not knowing how to decontaminate a surface with potentially infected blood.

Keywords: AIDS, HIV, knowledge, Attitudes, practise, HIV patients, nurses.

1. Introduction

The number of cases of HIV infection (Human Immunodeficiency Virus) has been steadily increasing in recent years. According to data provided by UNAIDS (2018) (https://www.epicentro.iss.it/aids/epidemiologia-mondo) there are 37.9 million HIV patients worldwide. In Italy alone 2,847 new infections have been reported, representing an incidence of 4.7 cases per 100,000 residents (Istituto Superiore di Sanità Istituto Superiore della Sanità 2019).
HIV is a retrovirus that attacks T lymphocytes, causing the death of these cells and a severe immunodeficiency of the individual who acquired the infection, called AIDS (Acquired Immuno Deficiency Syndrome), a chronic disabling disease (Waymack, Sundareshan, 2019) (Simon et al. 2006).

To prevent the disease from evolving, it is important to diagnose it early by detecting specific antibodies, antigens or both, using different commercial kits. On the other hand, the serological tests are generally used for screening. An important advance in this area has been the availability of rapid antibody tests for HIV-1, which are important tools for surveillance, screening and diagnosis. These can be reliably performed on plasma, serum, whole blood or saliva by healthcare professionals with limited laboratory expertise. Since 1981, when the virus was discovered, medicine has moved forward performing early identification of the virus in the body, so that treatment can be carried out immediately with combined antiretroviral therapy (CART) (Simon et al. 2006). This has greatly improved the quality of life of individuals affected by HIV, reducing the viral load and therefore the transmissibility of the virus, thus limiting the outbreak (SIMIT & Ministry of Health, 2017). However, current drugs do not eliminate HIV infection and permanent treatment may be necessary.

Despite the protection of the rights of people affected by HIV, the taboos that have been created since the discovery of the virus have influenced the thinking of society, causing difficulties in the lives of patients even in the simple daily actions and the quality of care that is provided to them. Studies conducted in the literature to analyse the behaviour and attitudes of nurses towards HIV + patients have shown that there is a very common tendency to be reluctant to provide services to them (Anderson et al. 2003) due to fear and anxiety of infection (Juan et al. 2004). By contrast, other studies have revealed a reduction in the discriminatory attitude of nurses especially when they are equipped with adequate material and essential protective equipment (Farotimi et al. 2015)

Studies conducted in Italy have shown that the majority of nurses (98%) would not refuse to take care of an HIV+ patient (Marranzano et al. 2013), although, at the same time, the respondents who contribute to producing the "stigma" are those working in the social and health sector. In this sense, in the Italian literature, there are few studies that have examined how the lack of knowledge is an obstacle to the effective provision of nursing services, so it is necessary to understand what factors favour stigmatizing attitudes in this context.

2. Aim of the study

Understand the level of knowledge, practices and attitudes of nurses towards people with HIV/AIDS.

3. Methods and Design

An observational, cross sectional and multicentre study was carried out between April and October 2019 at two Italian hospitals in the region of Puglia, in the province of Lecce. The study involved 144 nurses (n=144), with at least one year of work experience. The recruited nurses worked in different areas, in particular in the Medical Area (n=56, 38.9%), in the Critical Area (n=41, 28.5%), in the Surgical Area (n=27, 18.8%), in the Maternal-Infant Area (n=14, 9.7%) and in the Oncological Area (n=5, 3.5%). Those who were interested in participating were given an informed consent form, which reminded them about the voluntary nature of participation, as well as the confidentiality and anonymous nature of the information. A specially trained researcher explained the aims of the study to the facility managers. Each participant had 20 minutes to answer the questionnaire items. Subsequently, the completed questionnaires were placed in a sealed envelope to guarantee confidentiality and anonymity. In addition, to ensure that the questionnaires were anonymous and thus to allow identification of the participants, a sequential identification code (ID) was attributed to each participant. Each questionnaire, therefore, had an ID number which corresponded to the SPSS database ID.

3.1. Ethical considerations

The ethical characteristics of the study were set out in the questionnaire presentation. Participation in the study, being free and voluntary, was considered as an expression of consensus. It was specified that participation was voluntary and that the participant could refuse to participate in the protocol whenever he or she wished.

3.2. Tools

A questionnaire entitled "Knowledge, attitudes and practices towards patients with

HIV/AIDS" (Coniglio M.A. et al., 2013), previously used to assess the knowledge and attitudes of medical students towards HIV infection (Marranzano et al. 2013), was used for this study. The questionnaire consists of 26 items, divided into 3 sections.

The first section is used to collect social-demographic data and information on current and past work activity (items 1-6). The second section is composed of items on vocational training and years of work (items 7-12). The third section explores whether nurses have ever rejected an HIV patient, as well as practices and behaviours towards these patients, such as whether or not to use protective gloves during the handling of biological samples or during treatment. It also asked about the perception of the risk of contracting HIV (items 11-13.1). The last section tested the knowledge of HIV, in particular the meaning of "seropositive", "window period" (items 14- 24). The assessment of knowledge was made according to whether the answer was correct or incorrect. The non-response and "don't know" were classified as incorrect.

The questionnaire was administered on paper and anonymously to all nurses who gave their consent and had more than one year's work experience. Each professional had the freedom to fill in the questionnaire with respect for privacy, expressing their opinions and considerations on the subject.

3.3 Statistical analysis

Descriptive analyses were conducted for all qualitative and quantitative variables using the Software Statistical Package for Social Science (SPSS) version 17. The continuous variables were synthesized using mean and standard deviation (DS) and the categorical variables using frequencies and percentages.

4. Results

4.1. Socio-demographic characteristics of the sample

In the recruited group, the female gender (n=93; 64.6%) prevails over the male gender (n=51; 35.4%), with an average age of 42.28 years and a DS of 9.59.

As shown in Table 1, most of the sample has work experience between 21 and 25 years (n=31, 21.5%) and work in critical area (n=41, 28.5%) and medical area (n=56, 38.9%). The highest level of training achieved by most nurses is the Bachelor's Degree (45.8%), followed by those who have achieved the Regional Course (27.8%), the University Diploma (19.4%) and 4.2% and 2.8% have a Master's Degree and a 1st Level Master's Degree respectively (Tab.1).

Tab. 1 Social-demographic data	**N (%)**
1) Hospital	**144 (100%)**
"S. Giuseppe da Copertino" (Copertino)	18 (12.5%)
"Vito Fazzi" (Lecce)	126 (87.5%)
2) Age	
Media	42.28
Mode	47
Median	44.00
Standard deviation	9.59
Minimum	25
Maximum	62
3) Gender	**144 (100%)**
Female	93 (64.6%)
Male	51 (35.4%)
4) Civil status	**140 (97.2%)**
Cohabitant	21 (14.6%)
Divorced	6 (4.2%)
Single	32 (22.2%)
Married	78 (54.2%)
Widow	3 (2.1%)
5) Children	**144 (100%)**
No	59 (41.0%)
Yes	85 (59.0%)
6) Religious beliefs	**111 (77.1%)**
Agnostic	4 (2.8%)
Atheist	6 (4.2%)
Catholic	101 (70.1%)
7) Years of working experience	**144 (100%)**
1 - 5	21 (14.6%)
11 - 15	23 (16.0%)
16 - 20	21 (14.6%)
21 - 25	31 (21.5%)
26 - 30	10 (6.9%)
6 - 10	24 (16.7%)
Over 30	14 (9.7%)
8) Current working area	**143 (97.3%)**
Surgical area	27 (18.8%)
Critical area	41 (28.5%)
Maternal-children's area	14 (9.7%)
Medical area	56 (38.9%)
Oncological area	(3.5%)
9) Have you ever worked in other areas?	**144 (100%)**
No	25 (17.4%)
Yes	2.6%)
10) Higher level of education	**144 (100%)**

Regional course	40 (27.8%)
University Diploma	28 (19.4%)
Master's Degree	6 (4.2%)
Bachelor's degree	66 (45.8%)
Master 1st Level	4 (2.8%)

4.2. Practices, perception and knowledge towards HIV+ patients

With regard to the practices and behaviour of nurses towards HIV+ patients, an important fact is that 97.2% (n=140) stated that they have never refused to care for a patient with HIV. During clinical practice, 28.5% (n=41) of them only "a few times" use gloves to collect blood samples from HIV+ patients or to give them medication, and the reasons for this were: comfort or haste. On the other hand, 8.3% (n=12) do not use gloves "ever" (Tab 2).
Concerning the decontamination of a surface with potentially infected blood, half of the sample (53.5%, n=77) showed to be able to manage the situation correctly, using bleach (sodium hypochlorite) for 10 minutes, as recommended by the Guidelines for Biosafety in HIV diagnosis and research laboratories (WHO Global Programme 1991), against 19. 4% who could not answer the question and 27.1% (n=39) who answered incorrectly, indicating that 11.1% would use alcohol and 16% iodine.
On the other hand, with respect to the evaluation of knowledge related to HIV, the analysis showed that 77.1% (n=111) of the sample never attended a training course on this subject and 89.6% (n=129) would be interested in participating. Moreover, most of the sample (98.6%, n=142) are aware of the meaning of the acronym AIDS (Acquired Immunodeficiency Syndrome) and 96.5% (n=139) recognize the Immune System as the main target of the pathology. The percentage of nurses who are aware of the meaning of the term "seropositive" (83.3%, n=120), i.e. a person who has been infected with HIV and is therefore positive for laboratory tests, and of the meaning of "seropositive person" (91.7%, n=132), i.e. a person who is not ill and feels well for a long period of time after infection, is decreasing.
On the other hand, only 47.9% (n=69) know the meaning of the "window period", i.e. the time between potential exposure to HIV infection and the point at which the test will give an accurate result, compared to 8.3%, n=12, who did not answer the question, and 43.7%, n=63, who answered incorrectly. With regard to the opinion on who could contract AIDS, 29.2% (n=42) state that all people with risk behaviour can contract the virus, a category which also includes people with potential occupational risk, homosexuals and drug addicts. To the question "Is it possible for me to contract the infection from a person with AIDS?", the majority of the sample (86.1%, n=124) answered in the positive direction (Tab. 2).
Finally, when asked to describe the feelings and emotions felt towards a patient with HIV, the majority of the sample (20.8%, n=32) reported to adopt the same treatment between the HIV patient and the other patients, followed by 7.1%, (n=11), who replied to feel sorry towards these patients and 3.9%, (n=6), who reported to pay more attention when caring for them. Among the emotions most experienced, however, were anger (3.2%, n=5), fear and sadness (2.6%, n=4).

6. Discussion

The main objective of this study was to observe the level of knowledge, practices and attitudes of nurses towards people with HIV/AIDS.
With regard to the knowledge of the meaning of the acronym AIDS and being HIV-positive, our study showed better results than another study carried out in Israel, which in comparing the knowledge among Jewish and Arab nurses, only 72% of the former and 51% of the latter were aware of the meaning of the term "HIV-positive" (Azaiza et al. 2002, 331-339). The most solid knowledge with respect to HIV infection, therefore, concerns: the mode of transmission, the meaning of the acronym AIDS and being seropositive. The most lacking, instead, concern the "window period" (Azaiza et al. 2002) (Juanet al. 2004), (Marranzano et al. 2013).
Our data are in line with those present in a study carried out in Taiwan (Azaiza et al. 2002), in which nurses were tested on the basis of their knowledge and the score of correct answers was 71.6%, and another study carried out in Italy (Sicily), which showed a percentage of correct answers of 65% (Marranzano et al. 2013). With reference to training, it was found

that participation in AIDS Update Courses is very low (22.9%), but at the same time 89.6% of the sample would be interested in participating. This result differs from the national literature, which indicates 43% participation in AIDS seminars or updating courses (Marranzano et al. 2013).

With regard to the use of gloves in nursing practice, although the Ministerial Decree (1990) recommends the use of gloves in taking samples that are difficult to perform, due to the condition of the patient or the particularity of the sampling site (Ministerial Decree of 28 September 1990), in our study the percentage of nurses who use them regularly is lower than the standards found in (Marranzano et al. 2013), and different from the data obtained in a study carried out in Nigeria, where 95% would not use gloves in routine practices, except in the presence of HIV-positive patients (Farotimi et al. 2015). In addition, knowledge about methods of decontamination of a surface contaminated with infected blood was investigated. It was found that half of our sample (53.5%) would correctly use bleach (sodium hypochlorite 0.1%) to reduce the potential risk of infection, as recommended by the "Guidelines for Biosafety in HIV Diagnostic and Research Laboratories" (WHO Global Programme 1991), the other half, however, does not have adequate knowledge of how to decontaminate an infected surface. These results differ from those obtained in the study in Nigeria, where 65% of student nurses would decontaminate blood or body fluids with a 0.5% NaCl solution. (Farotimi et al. 2015). Theoretically, therefore, a non-negligible percentage of nurses in this study could be considered at risk for infection due to non-use of routine gloves, incorrect handling of the patient's biological samples, and lack of knowledge of how to decontaminate a surface with potentially infected blood.

7. Conclusions and Perspective

For a better care of the HIV patient we must have full control of the disease. Although the data from this study cannot be generalised to the general population, it may be the basis for future research, where we could also work on the experiences of HIV patients to better understand their care needs and avoid any stigma attitudes of health professionals. Factors such as misinformation, misguided care procedures or popular beliefs that could affect the quality of care provided to each patient have been analysed in the literature. In addition, as the National Plan of Action against HIV and AIDS 2016 (PNAIDS) makes clear, the full involvement of people with HIV in the development of the stigma reduction strategy should be encouraged. (National Plan of Action against HIV and AIDS 2016). In the fight against AIDS and all stigmatising attitudes related to it, the first "precaution" is the information and training of all health workers who interface with HIV+ patients on a daily basis, and who must ensure their safety, adequate care and respect for their human rights.

Tab. 2 Practice, perception and knowledge towards HIV+ patients	**N (%)**
11) Would you refuse to take care of a patient with HIV or AIDS?	**144 (100%)**
Absolutely, yes.	2 (1.4%)
No	141 (97.9%)
Probably yes	1 (0.7%)
12) Have you ever refused to take care of a patient with HIV or AIDS?	**144 (100%)**
No, never	140 (97.2%)
Yes, sometimes	3 (2.1%)
Yes, always	1 (0.7%)
13) Do you usually wear gloves to draw blood samples or to give medication to your patients?	**144 (100%)**
No, never	12 (8.3%)
Yes, sometimes	41 (28.5%)
Yes, always	91 (63.2%)
13.1) 13.1) If "yes, sometimes", why?	**27 (17.5%)**
It depends on the pathology	5 (3.2%)
Out of habit	1 (0.6%)
For convenience	9 (5.8%)
For distraction	2 (1.3%)
For haste	8 (5.2%)
For lack of the presidium	1 (0.6%)
For fear of infection	1 (0.6%)
14) Have you ever attended an updating course on HIV/AIDS?	**144 (100%)**
No	111 (77.1%)
Yes	33 (22.9%)
15) Would you like to attend a specific training course on HIV infection?	**141 (97.9%)**
No	12 (8.3%)
Yes	129 (89.6%)
16) Indicates the meaning of the acronym AIDS:	**144 (100%)**
Acquired immune deficiency syndrome	142 (98.6%)
Acquired Infectious Disease Syndrome	1 (0.7%)
I don't know	1 (0.7%)
17) AIDS is a viral disease responsi-	**144 (100%)**

ble for:	
Neuronal degeneration	1 (0.7%)
Destruction of the immune system	139 (96.5%)
Lung Diseases	3 (2.1%)
I don't know	1 (0.7%)
18) The term "HIV-positive" indicates that a person:	**144 (100%)**
He or she has been infected with the virus responsible for AIDS, so he or she is positive for laboratory testing.	120 (83.3%)
It has antibodies against the virus responsible for AIDS, so it is positive in laboratory tests and is protected against the disease.	17 (11.8%)
He has AIDS so he's positive for lab tests.	6 (4.2%)
I don't know	1 (0.7%)
19) An "HIV-positive" person:	**144 (100%)**
Since the beginning of the infection, he or she hasn't felt well.	4 (2.8%)
He looks like a sick person	4 (2.8%)
I don't know	4 (2.8%)
For a long period of time after the infection he is not sick and feels well	132 (91.7%)
20) The "window period" is:	**144 (100%)**
I don't know	12 (8.3%)
Time between potential exposure to HIV infection and the initial symptoms of the disease (AIDS)	50 (34.7%)
Time between potential exposure to HIV infection and the point where the test will give an accurate result	69 (47.9%)
Time between potential exposure to HIV infection and the point at which it can transmit the infection to another person	13 (9.0%)
21) When a surface is contaminated with potentially infected blood, it is necessary:	**144 (100%)**
Cover the surface with alcohol, dry and repeat the operation several times for at least 15 minutes.	16 (11.1%)
Cover the surface with bleach, dry and repeat the operation several times for at least 10 minutes.	77 (53.5%)
Cover the surface with iodine, dry and repeat the operation several times for at least 20 minutes.	23 (16.0%)
I don't know	28 (19.4%)
22) AIDS can be of interest:	**144 (100%)**
I don't know	2 (1.4%)
Homosexuals and drug addicts	14 (9.7%)
People with at-risk behaviour	42 (29.2%)
all the previous ones (homosexuals and drug addicts, people with risk behaviour, people with potential occupational exposure)	86 (59.7%)
23) Is it possible for me to contract the infection from a person with AIDS?	**144 (100%)**
No	12 (8.3%)
Yes	124 (86.1%)
I don't know	8 (5.6%)
24) Who wants to know if he is positive for HIV infection must:	**144 (100%)**
Carry out generic blood tests for infectious diseases	2 (1.4%)
Perform a specific test for HIV/AIDS	140 (97.2%)
I don't know	2 (1.4%)
25) Is there anyone among your relatives/friends who is HIV positive or has AIDS?	**144 (100%)**
No	115 (79.9%)
Yes	7 (4.9%)
I don't know	22 (15.3%)
25.1) Do you agree with:	**142 (98.6%)**
I don't know if I'm at risk of getting AIDS.	3 (2.1%)
I'm not at risk of getting AIDS.	4 (2.8%)
I'm at risk of getting AIDS like everyone else.	58 (40.3%)
I'm more at risk of getting AIDS than other people.	77 (53.5%)
26) Describe your sensations/emotions when thinking about an AIDS patient:	**92 (59.7%)**
Anguish	3 (1.9%)
Anxiety	2 (1.3%)
Compassion	3 (1.9%)
Understanding	4 (2.6%)
Sorry	11 (7.1%)
Contempt	2 (1.3%)
It is a person who has contracted AIDS by wrong behaviour or sometimes by his partner who, even though he knows he has it, has kept it hidden (and this is even more serious).	1 (0.6%)
Marginalisation	4 (2.6%)
More attention	6 (3.9%)
Fear	4 (2.6%)
Unlucky patient	1 (0.6%)
I think that it is not easy for the patient to lead a "normal" life because of the prejudices, behaviors and thoughts of some people in our society, so I still think of a person who is strong in his fragility.	1 (0.6%)
Little information	2 (1.3%)
Anger	5 (3.2%)
Feelings of attention and involvement, thinking about how he contracted the virus, which is often not caused by bad habits. The emotions the patient may have are very negative and often feel isolated. Patients should be considered as real patients and not as plagued.	1 (0.6%)
Solidarity	3 (1.9%)
Loneliness	1 (0.6%)
Hope for better treatment	2 (1.3%)
Same treatment between HIV+ patient and other patients	32 (20.8%)
Sadness	4 (2.6%)

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