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Attitudes to HIV and AIDS among students and faculty in a School of Nursing in Barcelona (Spain): a cross-sectional survey

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ABSTRACT

Objective: To determine attitudes to the care of People Living with Human Immunodeficiency Virus (PLHIV) among students and faculty members in a school of nursing in Barcelona.
Material and methods: An observational, descriptive, cross-sectional study was conducted in faculty and students in a school of nursing in Barcelona (Spain). Data were collected between January and March 2014, through a validated, self-administered online questionnaire (EASE scale). All participants provided their informed consent.
Results: Of 392 questionnaires sent responses were obtained from 204 participants. Incomplete responses were eliminated leaving 186 completed questionnaires (139 students and 47 faculty members). The overall response rate was 47.4% (45.7% students; 53.4% faculty). A high percentage of positive attitudes was found throughout the sample, particularly in fourth-year students and faculty members (80% and 79.8%, respectively). The lowest percentage of positive attitudes was found in second-year students (70.9%). The highest percentage of positive attitudes was significantly associated ($p = 0.045$) with a lack of religious beliefs.
Conclusions: Attitudes to the care of PLHIV among nursing students and faculty members were mainly positive. Some fears and misconceptions mainly concerning fear of infection and beliefs about transmission routes were found in both collectives.

1. Introduction

HIV/AIDS infection is one of the most important health problems worldwide and the number of infected individuals is increasing; currently there are more than 35 million HIV carriers, 4.7 million more than in 2001 (Joint United Nations Programme on HIV/AIDS, 2013). In Spain an estimated 130,000 persons live with HIV (PLHIV) and approximately one-third of them are unaware of their HIV-positive status (Carnicer Pont, Vives Martín, & Casabona Barbarà, 2011). Due to the development of effective new treatments the life expectancy of PLHIV has increased posing new challenges to nursing staff. One of the factors causing most distress in PLHIV is the phenomenon termed "social AIDS" (Bayés, Comellas, Lorente, & Viladrich, 1998) which refers to marginalization or discrimination of HIV carriers by society. One of the causes of this phenomenon is fear of hypothetical HIV transmission through routine activities of daily life.

Attitudes to the care of PLHIV have evolved favorably over time along with improvements in the diagnosis, treatment and prognosis of HIV/AIDS. Data from a literature review indicate that both nurses and nursing students perceive both positive and negative aspects in the care of PLHIV, both personally and professionally (Conejeros Vallejos, Emig Sánchez, Ferrer Lagunas, & Cianelli Acosta, 2010). Even so, it is important to observe how certain discriminatory behaviors persist to a greater or lesser extent among nurses and nursing students. The main cause of negative attitudes to PLHIV is fear of infection which is influenced by the route of transmission; attitudes are more negative to homosexual PLHIV and intravenous drug users (Bektaş & Kulakaç, 2007; Bliwise, Grade,

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Irish, & Ficarrotto, 1991; Cole, 1996; Earl & Penney, 2003; Ficarrotto, Grade, Bliwise, & Irish, 1990; Madumo & Peu, 2006; Röndahl, Innala, & Carlsson, 2003; Valois, Turgeon, Godin, Blondeau, & Cote, 2001). Chinese nursing students have been reported to feel more empathetic to patients infected through blood transfusions, even though they refused to provide PLHIV with basic care, such as shaving or bed washing or washing patients after urination/defecation (Li, Scott, & Li, 2008). Similarly, Thai nursing students had no confidence in the use of universal precautions to prevent transmission (Earl, 2010); similar attitudes have been identified in nurses working in rural areas of the United States (Earl & Penney, 2003). The most cautious attitudes have been associated with older age, homophobia, female sex and having children (Peate, Suominen, Välimäki, Lohrmann, & Muinonen, 2002). A similar situation has been found among nursing students in Russia who showed little willingness of care for PLHIV although willingness increased with activities involving no risk, such as bed-making or bathing patients (Suominen, Laakkonen, & Lioznov, 2015). In contrast, positive attitudes among nursing students in Germany encouraged willingness to care for PLHIV/AIDS, an association that was also found among persons with previous contact with PLHIV (Lohrmann et al., 2000).

The situation is no different in Spain. More positive attitudes have been found among nurses than among nurses' aides (80% vs. 62.6%) while age and occupation have been identified as having an independent effect on attitudes to PLHIV (Pita-Fernández, Rodríguez-Vazquez, & Pertega-Diaz, 2004). More positive attitudes have also been found in primary care than in the hospital care setting (66.7% vs 44%), and these differences were associated with length of service and knowledge (Molina Cabrillana, Fernández Nebreda, Hernández Pérez-Lanzac, & Sánchez-Cantalejo, 1997). One study reported that attitudes to the care of PLHIV/AIDS were less positive among health professionals older than 35 years, men, auxiliary staff and physicians and were more positive among staff with prior contact with PLHIV (Fortes González, 1998). That study found that 81% of the 282 participants believed that strategies to identify drug-addicted persons with AIDS should be enhanced alleging that their personal safety when performing clinical work takes priority over individual patient rights. An important consideration is the confidentiality of laboratory data; a study conducted among nurses in the province of Tarragona (Spain) reported that more than 72% of participants (n = 242) would prefer patients' serostatus to be disclosed, with most (56.9%) alleging that such disclosure would help to avoid the risk of infection (Rovira Veciana, Uriz Solá, Rodríguez Suárez, & Vila Córcoles, 2004). That study also reported that more than 70% of the participants surveyed would prefer not to have contact with PLHIV in their work.

While the attitudes of health professionals have been previously studied, little is known about the attitudes of nursing students and faculty all around the world. This gap is also present in the Spanish context. At the beginning of the 21st century research with nursing students was done by Tomas-Sabado (1999), Tomas-Sabado and Aradilla (2003) and Leyva, Mestres, Lluva, and De Dios (2003). The last author performed a qualitative study to describe these attitudes in a group of nursing students based on photographic and conceptual representation. Participants viewed HIV infection as a negative life event due to social stigma. No research has been performed with nursing faculty. The aim of this study was to identify the attitudes of nursing students and faculty staff to the care of PLHIV and their beliefs about the disease.

2. Methods

This observational, descriptive, cross sectional study was conducted in 392 students and faculty members of a school of nursing in Barcelona (Spain). The name of the school is not stated due to ethical reasons. The school follows the standard nursing degree program in Spain (240 European Credit Transfer System in 4 years) focusing in social service, clinical support, research promotion, as well as innovation and creativity. This pedagogical approach is present at both undergraduate and postgraduate levels.

The study population was composed of students enrolled in the 4-year undergraduate nursing degree (n = 304) and faculty staff (n = 88). Data were collected between January and March 2014 through the EASE scale (Spanish acronym for Nursing Attitudes to AIDS) designed and validated by Tomás-Sábado in 1999 (Tomás-Sábado, 1999) obtaining a Cronbach's alpha coefficient of 0.7789. This is a 21-item Likert-like scale with five response options (from complete agreement to complete disagreement) that explore nursing students' beliefs and attitudes to the care of PLHIV in relation to daily life, healthcare and the social dimension of AIDS. In this study the scale was used for both faculty and students.

The EASE scale, the only validated instrument for Spanish nursing students, was administered through a virtual platform. In addition to the nursing students, nursing faculty were included in the distribution of the instrument due to their influential role in shaping student knowledge, skills, and attitudes. Resulting with contemporary clinical and cultural changes, we acknowledge there might be outdated items within the instrument. However, the potential bias is minimized as the aim is to explore general versus specific attitudes. Although addressing specific changes to the scale are outside the scope of this study, some limitations were found (discussed further below).

The study was presented to participants in person and a message was then sent by electronic mail with a link to the online questionnaire and instructions on its completion. Participation was voluntary and anonymous and data were confidential. Before completing the questionnaire, the participants signed an online informed consent form. This study was approved by the Clinical Research Ethics Committee of Parc de Salut Mar. Sociodemographic variables consisted of age, sex, religion and information source on HIV in both groups. Educational level and the courses taught were registered among faculty staff.

Although there are five response options to measure differences in the positive and negative attitudes, the scale was shifted into three categories to provide a more limited and specific response to positive attitude, negative attitude, and neutral attitude. Also, a do not know/no response option was included [DK/NR]. Having a positive or negative attitude referred to the degree of agreement or disagreement with the statements in the EASE scale. A neutral (ambivalent) attitude reflected participants' lack of stance on a particular question because they had not made up their mind, had insufficient knowledge or had not yet encountered a situation where they needed to adopt a particular attitude. For ease of reading, the results show only positive and neutral attitudes with the remainder corresponding to negative attitudes. Attitudes to HIV/AIDS according to religious beliefs were analyzed as positive or negative. In further analysis the number of positive individual attitudes was calculated. A bubble chart was done where the horizontal axis represents the academic year and the ordinate the number of positive attitudes over all items. The larger size of the bubble indicates the higher number of individuals who have that number of items with positive attitudes. Furthermore, the three emergent but not validated dimensions seek to understand the implications on social wellness, health status, and activities of daily living. These dimensions emerged from the content analysis and the researcher discussion (JL and MF) and research team agreement.The social dimension included questions 1, 2, 4, 13, 14, 18 and 21. The healthcare dimension included questions 6, 7, 9, 10, 12, 16 and 20. Finally, the dimension related to daily life activities, included questions 3, 5, 8, 11, 15, 17 and 19. These dimensions were compared with

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Table 1
Characteristics of students completing the survey; n (%).

	1 st year (N = 41)	2nd year (N = 26)	3rd year (N = 33)	4th year (N = 39)
Sex (female)	36 (87.8)	20 (76.9)	31 (93.9)	33 (84.6)
Age (years)				
<25	33 (80.5)	19 (73.1)	25 (75.8)	24 (61.5)
25–29	7 (17.1)	2 (7.7)	2 (6.1)	7 (17.9)
>29	1 (2.4)	5 (19.2)	6 (18.2)	8 (20.5)
Religion				
With no religious beliefs	19 (46.3)	16 (61.5)	19 (57.6)	21 (53.8)
With religious beliefs	17 (41.5)	8 (30.8)	12 (30.8)	14 (35.9)
DK/NR	5 (12.2)	2 (7.7)	2 (6.1)	4 (10.3)
Prior education				
Secondary school	39 (95.1)	22 (84.6)	32 (97.0)	37 (94.9)
University	2 (4.9)	3 (11.5)	1 (3.0)	2 (5.1)
DK/NR	1 (3.8)	1 (3.8)	0 (0.0)	0 (0.0)
Information source				
Internet	21 (51.2)	14 (53.8)	20 (60.6)	19 (48.7)
University	3 (3.98)	2 (7.7)	5 (15.2)	10 (25.6)
Scientific journals	3 (7.3)	5 (19.2)	7 (21.2)	5 (12.8)
Media	8 (19.5)	3 (11.5)	1 (3.0)	3 (7.7)
Health authorities	2 (4.9)	1 (3.8)	0 (0.0)	0 (0.0)
Conferences	0 (0.0)	1 (3.8)	0 (0.0)	1 (2.6)
DK/NR	3 (7.3)	0 (0.0)	0 (0.0)	1 (2.6)

the religious beliefs and the source of information in students and faculty.

Descriptive statistics with univariate and bivariate analyses were conducted with the SPSS statistical program 21.0. The chi-square test was used to analyze associations among comparisons according to religious beliefs and source of information.

3. Results

Of 392 questionnaires sent, 204 were completed. After elimination of incomplete questionnaires 186 were included (139 students and 47 faculty members). The overall response rate was 47.4% (45.7% students; 53.4% faculty members). The main characteristics of the sample are shown in Tables 1 and 2. There was a high percentage of women in both groups (faculty 82.9%; students 86.3%). The median age was 45 years among faculty members and was less than 25 years in students. Notably, the main information source on HIV and AIDS was the Internet in both groups. Scientific journals occupied second place among faculty members and fourth place among students.

Positive attitudes among nursing students and faculty staff are described in Table 3. A high percentage of positive attitudes was found in the five groups (first-, second-, third- and fourth-year students and faculty staff) with the highest percentages being found in fourth-year students and faculty (80.0% and 84.0%, respectively). The lowest percentage of positive attitudes was found in first-year students (55.9%). A notable finding was that only 10 second-year students (38.5%) agreed that there are no possibilities of contracting HIV through daily activities (item 8). The remainder disagreed (38.4%) or did not agreed or disagreed (23.1%) [Table 3]. In contrast, faculty members and fourth-year students showed the strongest agreement (78.7% and 53.8%, respectively) in this item. Another remarkable finding was that only 12 third-year students (36.4%) were not in favor of mandatory disclosure of PLHIV (item 10), 24.2% did not respond and 39.4% were in favor of mandatory disclosure of PLHIV.

Only six second-year students (23.1%) agreed with the need to create specific hospitals for PLHIV/AIDS (item 12) with the remaining responses being against this proposition. In contrast, the participants least in agreement with this item were faculty members and third-year students (85.1% and 75.8%, respectively).

Just nine faculty members (19.1%) and 10 students (38.5%) had a neutral attitude to the belief that AIDS was the major plague of our time (item 13). Equally, 21.2% of third-year students and 38.5% of fourth-year students had a neutral attitude to the need to consider AIDS patients as victims of the social system. Importantly, nine second-year students (34.6%) and six faculty members (12.8%) had a neutral attitude to the statement that HIV-infected foetuses should be aborted. High rates of neutrality were also found to the

Table 2
Characteristics of faculty members completing the survey; n(%).

	Teachers
	n (47)
Sex (female)	39 (82.9)
Age (median, range)	45 (28–64)
Religion	
Agnostic/atheist	22 (46.8)
Catholic	18 (38.3)
DK/NR	7 (14.9)
Educational level	
Diploma	20 (42.6)
Masters	12 (25.5)
Doctorate	8 (17)
University graduate	7 (14.9)
Profession	
Nursing	38 (80.9)
Medicine	5 (10.6)
Other	4 (8.5)
Course	
Clinical placement	25 (53.2)
Optional	7 (14.9)
Medical-surgical	6 (12.8)
Basic principles of nursing/History of nursing...	3 (6.4)
Research/Epidemiology/Biostatistics...	3 (6.4)
DK/NR	3 (6.4)
Information source	
Internet	14 (29.8)
Scientific journals	12 (25.5)
Health authorities	7 (14.9)
Conferences	4 (8.5)
Newspapers and/or magazines	4 (8.5)
University	3 (6.4)
Specialized books	1 (2.1)
DK/NR	2 (4.3)

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Table 3
Frequency and percentage of positive and neutral attitudes to HIV and AIDS, n (%).

	STUDENTS								FACULTY	
	1 st year (n = 41)		2nd year (n = 26)		3rd year (n = 33)		4th year (n = 39)		(n = 47)	
	Attitude+	DK/NR	Attitude+	DK/NR	Attitude+	DK/NR	Attitude+	DK/NR	Attitude+	DK/NR
1. AIDS does not affect heterosexual couples	39 (95.1)	1 (2.4)	26 (100)	0 (0.0)	32 (97.0)	0 (0.0)	36 (92.3)	0 (0.0)	45 (95.7)	0 (0.0)
2. AIDS-infected fetuses should be aborted	27 (65.9)	12 (29.3)	16 (61.5)	9 (34.6)	21 (63.6)	9 (27.3)	30 (76.9)	7 (17.9)	39 (83.0)	6 (12.8)
3. There is no danger in AIDS carriers using public bars and restaurants	3 (7.3)	3 (7.3)	19 (73.1)	2 (7.7)	28 (84.8)	3 (9.1)	37 (94.9)	0 (0.0)	44 (93.6)	0 (0.0)
4. Seropositive women should not be allowed to become pregnant	28 (68.3)	10 (24.4)	20 (76.9)	5 (19.2)	24 (72.7)	8 (24.2)	32 (82.1)	5 (12.8)	37 (78.7)	5 (10.6)
5. AIDS is a problem that affects everyone	6 (14.6)	10 (24.4)	18 (69.2)	5 (19.2)	26 (78.8)	3 (9.1)	28 (71.8)	8 (20.5)	41 (87.2)	3 (6.4)
6. Continnous care of AIDS patients may lead to infection	37 (90.2)	3 (7.3)	22 (84.6)	2 (7.7)	30 (90.9)	1 (3.0)	37 (94.9)	2 (5.19)	44 (93.6)	0 (0.0)
7. HIV carriers have a right to medical confidentiality	5 (12.2)	4 (9.8)	21 (80.8)	4 (15.4)	23 (69.7)	4 (12.1)	32 (82.1)	2 (5.19)	39 (83.0)	4 (8.5)
8. There is no risk of AIDS transmission in daily activities	15 (36.6)	5 (12.2)	10 (38.5)	6 (23.1)	16 (48.5)	5 (15.2)	21 (53.8)	9 (23.1)	37 (78.7)	5 (10.6)
9. AIDS patients should be isolated from other patients	34 (82.9)	5 (12.2)	20 (76.9)	3 (11.5)	31 (93.9)	0 (0.0)	37 (94.9)	2 (5.19)	44 (93.6)	2 (4.3)
10. HIV-positive status should disclosed	21 (51.2)	10 (24.4)	10 (38.5)	7 (26.9)	12 (36.4)	8 (24.2)	19 (48.7)	9 (23.1)	23 (48.9)	10 (21.3)
11. Being an HIV carrier should not be an obstacle to education or employment	3 (7.3)	0 (0.0)	25 (96.2)	0 (0.0)	32 (97.0)	0 (0.0)	38 (97.4)	1 (2.6)	44 (93.6)	1 (2.1)
12. Specific hospitals should be created for AIDS patients and carriers	29 (70.7)	8 (19.5)	6 (23.1)	0 (0.0)	25 (75.8)	6 (18.2)	28 (71.8)	10 (25.6)	40 (85.1)	7 (14.9)
13. AIDS is the major plague of our time	26 (63.4)	10 (24.4)	13 (50.0)	10 (38.5)	21 (63.6)	9 (27.3)	25 (64.1)	9 (23.1)	31 (66.0)	9 (19.1)
14. AIDS patients should be considered victims of the social system	25 (61.0)	11 (26.8)	16 (61.5)	6 (23.1)	20 (60.6)	7 (21.2)	20 (51.3)	15 (38.5)	31 (66.0)	10 (21.3)
15. Being an HIV carrier should not be an impediment to adoptin a child	4 (9.8)	4 (9.8)	23 (88.5)	1 (38.8)	30 (90.9)	0 (0.0)	35 (89.7)	2 (5.19)	35 (74.5)	8 (17.0)
16. In hospitals, HIV carriers should not share a room with an uninfected person	34 (82.9)	3 (7.3)	19 (73.1)	5 (19.2)	27 (81.8)	2 (6.1)	37 (94.9)	2 (5.19)	43 (91.5)	4 (8.5)
17. I wouldnít like to work with an HIV-infected coworker	35 (85.4)	6 (14.6)	24 (92.3)	0 (0.0)	30 (90.9)	1 (3.0)	33 (84.6)	6 (15.4)	44 (93.6)	1 (2.1)
18. HIV-infected children should attend special classes	36 (87.8)	4 (9.8)	24 (92.3)	2 (7.7)	33 (100)	0 (0.0)	37 (94.9)	2 (5.19)	45 (95.7)	0 (0.0)
19. As a precautionary measure, we should avoid contact with AIDS patients and HIV carriers	37 (90.2)	2 (4.9)	22 (84.6)	2 (7.7)	30 (90.9)	2 (6.1)	38 (97.4)	1 (2.6)	46 (97.99	0 (0.0)
20. We must use gloves whenever we touch an AIDS patient	34 (82.9)	3 (7.3)	19 (73.1)	3 (11.5)	23 (69.7)	5 (15.2)	34 (87.2)	2 (5.19)	39 (83.0)	3 (6.4)
21. The AIDS test should be voluntary and anonymous	3 (7.3)	13 (31.7)	14 (53.8)	7 (26.9)	23 (69.7)	5 (15.2)	21 (53.8)	10 (25.6)	38 (80.9)	4 (8.5)
Total attitudes	481 (55.9)	127 (14.8)	387 (70.9)	79 (14.5)	537 (77.5)	78 (11.3)	655 (80.0)	104 (12.7)	829 (84.0)	82 (8.3)

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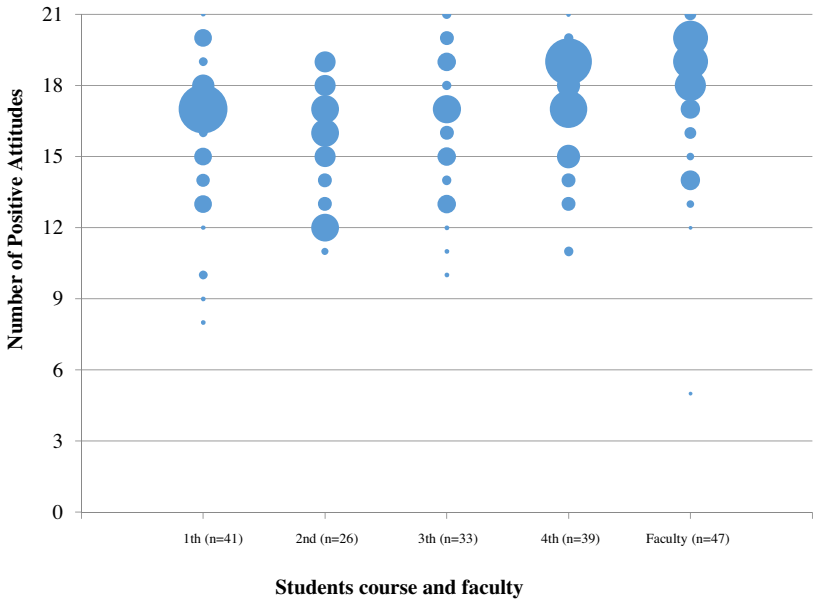

Fig. 1. Positive attitudes distribution per person and group.

statement that HIV testing should be voluntary and anonymous, reaching 31.7% among first-year students.

The analysis of the group positioning in relation to positive attitudes, shows that most first year students had 17 and 18 (out of 21) positive attitudes and that only one person had 100% positive attitudes. Second and third year students present more dispersion. Among fourth year students and faculty, 17 and 19 positive attitudes, respectively, are more frequent [Fig. 1].

Analysis of participants' attitudes according to their religious beliefs (Table 4) showed a greater tendency to positive attitudes among faculty members without religious beliefs. Statistically significant differences were found in responses to the statement on the need for HIV-testing to be voluntary and anonymous ($p = 0.045$). Among students, positive attitudes were also more frequent among those without religious beliefs. Students showed statistically significant differences in their responses to statements that HIV-infected fetuses should be aborted ($p = 0.012$), that no risk is involved when using bars and restaurants frequented by PLHIV ($p = 0.036$) and that HIV-positive women should not be allowed to become pregnant ($p = 0.014$). Analyzing the items grouped in the dimensions previously mentioned (Table 5), statistically significant differences were observed in the social dimension only in students without religious beliefs. In the other dimensions no remarkable differences were observed in the different groups. The analysis by source of information on HIV showed no remarkable differences in either group. A 29.8% of faculty uses the Internet as the main information source while more than half of the students used this source (53.2%).

4. Discussion

The results of this study show that attitudes to PLHIV among both nursing students-especially fourth-year students- and faculty members were mainly positive. This finding could be linked to the profile of persons choosing nursing as a profession in which a key element is a humanist approach prioritizing protection and care of others. In the Spanish literature some mainly local studies with small samples have shown that the most positive attitudes are associated with length of service, age and knowledge (Fortes González, 1998; Molina Cabrillana et al., 1997; Pita-Fernández et al., 2004; Rovira Veciana et al., 2004). In the international literature numerous studies have suggested that nursing students' attitudes to the care of PLHIV/AIDS are positive (Akin, Mendi, Mendi, & Durna, 2013; Foreman, Lyra, & Breinbauer, 2003; Nazik, Arslan, Özdemir, & Apay, 2012; Paxton et al., 2005; Pickles, King, & Belan, 2009,2012; Reidpath & Chan, 2005; Reis et al., 2005). In general the literature also reports positive attitudes among faculty members (Cobos-Sanchiz, Morón-Marchena, López-Jarquín, & Reyes-Costales, 2013; Méndez Pérez, Mejía de Díaz, & D'Avila de Oliveira, 2010; Pagliari, Garbin, & Garbin, 2004).

In our study, positive attitudes were clustered in items 1, 6, 11, 18 and 19 of the EASE scale and were mainly associated with healthcare and the social dimension of AIDS. A previous Spanish study performed in 2003 found that nursing students' attitudes to patients with AIDS was moderately favorable (Tomás-Sábado & Aradilla, 2003). This difference could be due to the characteristics of the context; in 2003, highly active antiretroviral treatment had only been available for six years and AIDS-associated morbidity and mortality were higher than now. The high morbidity and mortality and the inexorable spread of the epidemic represented a huge challenge to biomedical sciences and made AIDS a socially feared disease that aroused negative attitudes. Currently, these negative attitudes could be losing strength due to low mortality and the absence of warnings in the media. In our study negative attitudes among students and faculty concentrated on items 8 and 10 of the EASE scale linked to healthcare and daily life *"there is no risk of AIDS transmission in daily life"* and "*HIV-positive status should be disclosed*".

The highest percentage of agreement in the statement "*there is no risk of AIDS transmission in daily life*" was found among faculty and fourth-year students (78.7% and 53.8%, respectively). This percentage was less than 50% among second- and third-year students. This finding suggests that the main cause of concern among students is fear of infection. It has to be considered the fact that novice students are less likely to be proficient in procedures or knowledge that may place them at risk and this may have an impact in their attitudes. As shown by the literature (Bliwise et al., 1991; Earl & Penney, 2003; Madumo & Peu, 2006; Röndahl et al., 2003) the same is true for healthcare staff. This fear can be viewed as the cornerstone of negative attitudes to PLHIV among health professionals and students. In one study, healthcare professionals advocated mandatory disclosure of drug addiction and HIV infection arguing that safety at work takes priority over individual patient rights (Reis

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Table 4
Attitudes among nursing students and faculty members according to their religious beliefs; n(%).

	STUDENTS				TEACHERS			
	With some religious beliefs		With no religious beliefs		With some religious beliefs		With no religious beliefs	
	Negative attitude	Positive attitude	Negative attitude	Positive attitude	Negative attitude	Positive attitude	Negative attitude	Positive attitude
1. AIDS does not affect heterosexual couples	1 (2.0)	48 (98.0)	4 (5.3)	71 (94.7)	0 (0.0)	19 (100.0)	2 (9.1)	20 (90.9)
2. AIDS-infected fetuses should be aborted	6 (15.8)	32 (84.2)	1 (1.8)	54 (98.2)[i]	2 (11.8)	15 (88.2)	1 (5.6)	17 (94.4)
3. There is no danger in AIDS carriers using public bars and restaurants	8 (17.4)	38 (82.6)	4 (5.3)	69 (94.5)[ii]	2 (11.2)	16 (88.8)	1 (4.5)	21 (95.5)
4. Seropositive women should not be allowed to become pregnant	5 (13.5)	32 (86.5)	1 (1.6)	63 (98.4)[iii]	2 (13.3)	13 (86.7)	2 (10.0)	18 (90.0)
5. AIDS is a problem that affects everyone	6 (16.2)	31 (83.8)	9 (13.6)	57 (86.4)	3 (17.6)	14 (82.4)	1 (4.5)	21 (95.5)
6. The continued care of an AIDS patient is synonymous with infection	0 (0.0)	44 (100)	3 (4.1)	70 (95.9)	0 (0)	18 (100)	2 (9.1)	20 (90.9)
7. HIV carriers have a right to medical confidentiality	5 (12.2)	36 (87.8)	10 (13.9)	62 (86.1)	1 (5.6)	17 (94.4)	2 (10.5)	17 (89.5)
8. There is no risk of AIDS transmission in daily activities	16 (39.0)	25 (61.0)	27 (44.3)	34 (55.7)	3 (20)	12 (80.0)	2 (9.5)	19 (90.5)
9. AIDS patients should be isolated from other patients	2 (4.4)	43 (95.6)	3 (4.3)	96 (95.7)	1 (5.6)	17 (94.4)	1 (4.8)	20 (95.2)
10. HIV-positive status should be disclosed	12 (36.4)	21 (63.6)	27 (42.9)	36 (57.1)	7 (46.7)	8 (53.3)	7 (41.2)	10 (58.5)
11. Being an HIV carrier should not be an obstacle to education or employment	2 (4.1)	47 (95.9)	3 (4.0)	72 (96.0)	0 (0.0)	18 (100.0)	1 (4.5)	21 (95.5)
12. Specific hospitals should be created for AIDS patients and carriers	4 (11.1)	32 (88.9)	2 (3.2)	60 (96.8)	0 (0.0)	16 (100.0)	0 (0.0)	19 (100.0)
13. AIDS is the major plague of our time	19 (	30 (81.1)	7 (18.9)	45 (86.5)	4 (28.6)	10 (71.4)	4 (20.0)	16 (80.0)
14. AIDS patients should be considered victims of the social system	5 (17.9)	23 (82.1)	9 (15.0)	51 (85.0)	2 (12.5)	14 (87.5)	3 (17.6)	14 (82.2)
15. Being an HIV carrier should not be an impediment to adopting a child	5 (11.1)	40 (88.9)	3 (4.3)	67 (95.7)	0 (0.0)	11 (100.0)	3 (13.6)	19 (86.4)
16. In hospitals, HIV carriers should not share a room with an uninfected person	4	42 (91.3)	5 (7.2)	64 (92.8)	1 (5.9)	16 (94.1)	0 (0.0)	20 (100.0)
17. I wouldnít like to work with an HIV-infected coworker	1 (2.4)	41 (97.6)	3 (4.2)	68 (95.8)	2 (11.1)	16 (88.9)	1 (4.5)	21 (95.5)
18. HIV-infected children should attend special classes	0 (0.0)	45 (100)	0 (0.0)	63 (100)	1 (5.3)	18 (94.7)	1 (4.5)	21 (95.5)
19. As a precautionary measure, we should avoid contact with AIDS patients and HIV carriers	3 (6.5)	43 (93.5)	1 (1.4)	72 (98.6)	1 (5.6)	17 (94.4)	0 (0.0)	22 (100)
20. We must use gloves whenever we touch an AIDS patient	7 (16.3)	36 (83.7)	8 (11.8)	61 (88.2)	3 (17.6)	14 (82.4)	2 (9.5)	19 (90.5)
21. The AIDS test should be voluntary and anonymous	8 (24.2)	25 (75.8)	11 (18.3)	49 (81.7)	5 (29.4)	12 (70.6)	1 (5.0)	19 (90.5)[iiii]

[i] $p = 0.012$.
[ii] $p = 0.036$.
[iii] $p = 0.014$.
[iiii] $p = 0.045$.

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Table 5
Attitudes according to religious beliefs and HIV source of information (dimensions analysis).

	Students							Faculty						
Religious beliefs	Yes (n = 51)			No (n = 75)				Yes (n = 18)			No (n = 21)			
	positive attitude	%	N[a]	positive attitude	%	N[a]	p	positive attitude	%	N[a]	positive attitude	%	N[a]	p
Social dimension	235	84,23	279	396	92,31	429	0.0007	101	86,3	117	125	89,9	139	0,371
Healthcare dimension	254	88,19	288	449	88,56	507	0.876	106	89,1	119	125	89,9	139	0,823
Daily life activities dimension	265	86,60	306	439	89,78	489	0.171	104	90,4	115	144	94,1	153	0,256
Source of information	Internet (n = 74)			Other (n = 65)				Internet (n = 14)			Other (n = 33)			
	positive attitude	%	N[a]	positive attitude	%	N[a]	p	positive attitude	%	N[a]	positive attitude	%	N[a]	p
Social dimension	345	80,61	428	306	83,84	365	0.237	70	80,5	87	171	82,2	208	0.722
Healthcare dimension	402	87,01	462	347	87,63	396	0.787	106	89,1	119	125	89,9	139	0.825
Daily life activities dimension	428	90,87	471	360	87,38	412	0,094	89	96,7	92	202	92,2	219	0.139

[a] N = Postive attitudes + negative attitudes.

et al., 2005). Another study showed that a high percentage of nurses and nursing auxiliaries (56.9%) believed that accidental exposure at work could be avoided if patients' HIV-positive status were disclosed (Reidpath & Chan, 2005). Although it is true that healthcare practice could, hypothetically, pose a risk of contracting HIV due to accidental exposure the probability of HIV infection through accidental skin pricks or cuts is only 0.3% (Feijoo Cid, 2013). This situation prompts the need to reflect on the reasons why nurses and nursing students share a fear of accidental infection and advocate breaching medical confidentiality. The perception of personal risks triggers self-defense mechanisms that could jeopardize the ethical principles of nursing leading to an approach that would hamper the practice of holistic nursing care. It is worth noting that biomedicine transforms risk into a deterministic relationship, that is, biomedicine as an ideological tool transforms the probability of risk into a certainty (Fredriksen, 2005). For nurses and nursing students the uncertainty associated with exposure to risk is conceived of and experienced as the certainty that *"I will become infected if I accidentally prick or cut myself"*. Such beliefs reveal the need for strategies to include specific training on HIV since some studies have shown that such training reduces stigma and misconceptions (Fernández Donaire, Fernández Narváez, & Tomás-Sábado, 2006; Shah, Heylen, Srinivasan, Perumpil, & Ekstrand, 2014; Williams et al., 2006). Faculty members responsible for nursing curriculum design should attempt to identify the "hidden agenda" present during nursing practice since faculty staff transmit not only their knowledge but also their beliefs and values associated with nursing care (Feijoo Cid & Vega Monteagudo, 2009). Although positive attitudes to PLHIV were as high as 84.4% among faculty, a surprising finding was that 10.6% did not respond to the statement "*There is no risk of AIDS transmission in daily activities*" and 10.7% disagreed, maybe because in the teaching environment there is no risk of transmission given the characteristics of the work. Neutral position may reflects better understanding of the question since the "correct" answer to this question should be "it depends" since the meaning attributed to "daily activities" may vary among individuals.

This study shows more positive attitudes among participants who claim not to profess any religion. This finding is consistent with other evidence available. Waluyo, Culbert, Levy, and Norr (2015) affirm that the religion practiced by nurses, the degree of involvement with the doctrine and the religious affiliation of hospital recruiter contribute significantly to create stigmatizing attitudes towards PLHIV and people at risk. In their study they indicate worse attitudes among Muslim nurses than in Catholic and Protestant nurses. Tyer-Viola (2007) found a significant worse association between having strong religious beliefs and the will to care for pregnant women with HIV among a random sample of 350 American obstetric nurses. Similarly, Korhonen, Kylmä, Houtsonen, Välimäki, and Suominen (2012) identified much stricter attitudes towards unsafe sex among college students who reported attitudes that religion had an important role in their lives. Zou et al. (2009) show how the stigma associated with HIV-shame is strongly associated with religious beliefs such as HIV is a punishment from God or that people with HIV have not kept the word of God.

A notable finding of this study was the high percentage of neutral responses among all participant groups. This finding could be related to the questionnaire itself, since it was designed when the epidemiological and sociocultural panorama of HIV/AIDS was vastly different from the current scenario and possibly some statements no longer fit the present context. The items eliciting the highest index of neutral responses were those stating that AIDS is the major plague of our time and that PLHIV/AIDS are victims of the social system. Equally, the statement that HIV-infected fetuses should be aborted also elicited a high index of neutral responses. Analysis of these responses prompted us to think that each state-

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ment contains too many nuances to elicit a single response, an interpretation that could explain the high number of neutral responses.

One of the limitations of this study concerns the use of a self-administered questionnaire. According to Parahoo (1997) with this type of instrument informants tend to present what they believe is a desirable image. Moreover, the EASE scale was designed in 1999 and should be revised and updated given that HIV-related morbidity and mortality have radically changed in recent years and that some items are no longer relevant when evaluating positive and negative attitudes to PLHIV. This study would be strengthened by utilizing the tool that does not include questions which are no longer relevant. Additionally, the instrument contains negatively worded statements which evidence has suggested can influence the results by respondent distraction and misunderstanding (van Sonderen, Sanderman, & Coyne, 2013). The aim of this study was to determine the attitudes of students and faculty associated with caring for PLHIV; thus, the EASE scale was used because it was the only scale validated in Spanish for the specific population. Moreover, it was expected to try its applicability in the current context in which HIV has become a chronic disease.

Another limitation is the analysis from a local versus a multicenter study. Exploring the context of this study in other centers, with a more culture and socioeconomic diverse population, will lead to more reliable and generalizable findings about similarities and differences. Finally, the study is limited as there might be more significant positive findings resulting from both the faculty and the students' familiarity with the researcher team HIV center affiliation.

5. Conclusions

Attitudes to the care of PLHIV among both students and faculty tended to be positive and improve as the studies advance. Statistically significant differences were found in some items according to religious beliefs. Students were concerned about contracting the disease, revealing the need to include specific training on HIV in nursing studies. The "hidden agenda" of nursing studies should identified, given that it has a spontaneous and complementary effect on the learning process and can enhance or undermine existing learning programs. Future studies should incorporate faculty and students' subjective meanings to obtain realistic discourse that would authenticate and acknowledge the theoretical knowledge acquired by information sources other than scientific material.

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