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Knowledge and Attitude Related to Caring for HIV/AIDS Patients among Nurses at Golestan Hospital, Iran

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Abstract: Increasing number of people suffering from HIV/AIDS influenced healthcare sectors. Nurses play a critical role in caring the HIV positive patients. People living with HIV/AIDS usually experienced excessive negative attitudes from health care workers in Iran. The aim of this study was to assess the knowledge and attitude of nurses related to care of patients with HIV/AIDS. This was a cross-sectional survey of 331 nurses from Golestan Hospital in Ahvaz, Iran. Self-administered questionnaire was used to determine the knowledge and attitude of nurses. The study showed a moderate level of knowledge among nurses (55.6% have good knowledge) which is significantly associated with nurses education background, nurses departments and having experience of caring for HIV/AIDS patients. Fear of contagion was great among nurses (76%). Slightly more than half of the nurses had unfavorable attitude towards caring for HIV/AIDS patients (53%). There were several areas of deficiency in knowledge and attitude towards caring for HIV/AIDS patients among nurses. Implementing specific and focused educational programme on HIV/AIDS for nurses is necessary in the health care system in Iran.

Key words: Knowledge, attitude, nurses, HIV/AIDS, deficiency, health care system, Iran

INTRODUCTION

The Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) epidemic have become one of the most important public health problems in recent years. HIV infection and AIDS are complicated diseases. They are one of the important causes of morbidity and mortality all over the world. HIV/AIDS influence all aspects of human life such as physical, social, emotional and spiritual. HIV/AIDS decrease life expectancy for infected individuals, creating confusion in health systems and helping to monetary insecurity (Sowell, 2004). A total of 4.7 million individuals were living with HIV/AIDS in Asia in 2008, the number of new infections were about 350,000 individuals. In this year, 330,000 AIDS-related deaths occurred in Asia (WHO, 2009). In Asia, the main modes of HIV transmission are un-protected sex (sex worker) and injection drug (UNAIDS, 2008). The first case of HIV was reported in Iran in 1987. According to the recent report from Iran, there were 6,532 Iranians who suffered from HIV/AIDS in 2004. The number of infected was raised to 20,130 HIV positive people (92.9% males) in 2007. The estimated HIV infected patients are about 86,000 individuals. A total of 66.7% of HIV patients are injecting drug users, sexual contact is about 9% of infected people. About 17% of HIV/AIDS patients were grouped in un-specified mode of transmission. There is concern that HIV/AIDS condition in Iran can possibly be more severe than these official data. The main worry is the dissemination of HIV infection (Office of the Deputy for Public Health, 2009).

Increasing number of people suffering from HIV/AIDS has influenced healthcare sectors. Nurses play critical role in caring the HIV positive patient. Health professionals refused to face the HIV/AIDS patient because they have fear of contagion at workplaces. Irrational and discriminatory treatment of HIV/AIDS patient is the result of health professionals fear (Eisenberg, 1986; Adebajo *et al*., 2003). Unfortunately, most of health professionals have this kind of perspective and practice related to PLWHA. Healthcare providers especially nurses, general physicians and laboratory technicians are concerned about the care of HIV-positive patients (Aghamolami *et al*., 2009). Nurses must be aware of the fact and reality about HIV/AIDS. Lack of knowledge about ways of transmission can affect nurse's behaviour in caring for HIV/AIDS patients. Nurses

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reactions are varied about HIV/AIDS patients, from positive appropriate care to inadequate isolation techniques, minimum contact with such patients and even avoidance to care of HIV/AIDS patients (Walusimbi and Okonsky, 2004).

Educational and occupational training programmes have led to decrease fear and inadequate knowledge regarding HIV/AIDS transmission. For planning and evaluating nursing care, it is necessary that the truth about disease be identified. Inadequate knowledge is probably dangerous in nursing interventions and causing to both excessive positive events and loss resources (Unwakwe, 2000). Proper knowledge base regarding HIV/AIDS with sufficient understanding of patients needs may help relieve fear and anxiety associated with caring of patients who suffer from HIV/AIDS. Appropriate knowledge and perception can promote quality of care for these patients (Lohrmann *et al*., 2000). Lack of knowledge can affect outcome of care for HIV/AIDS patients.

Most studies about knowledge and attitude of healthcare workers regarding HIV/AIDS have shown the lack of knowledge about HIV transmission and risk of prevention with fear of contagion (Kohi and Horrocks, 1994; Adelekan *et al*., 1995; Lohrmann *et al*., 2000; Mbanya *et al*., 2001; Oyeyemi *et al*., 2006). One factor that causes the negative attitude is fear of being affected by occupational exposure in contact with HIV/AIDS individuals. Social stigma is the second factor affected nurses attitude in contact with HIV/AIDS patients. Thus, negative attitude cause to poor management of PLWHAs who need support, treatment and care (Baylor and McDaniel, 1996). The purpose of this study was to assess the knowledge and attitude of nurses related to care of patients with HIV/AIDS.

MATERIALS AND METHODS

This was cross-sectional study that carried out at Golestan University Hospital in Ahvaz, Iran. A convenience sampling method was used in which all nurses were worked at this hospital involved. A self-administered questionnaire was used in this study. The questionnaire was based on existing instrument developed for use in nursing (Eckstein, 1987; Froman and Owen, 1997). For the current study all question was reviewed for applicably in Iranian nursing population and culture. Questionnaire was administered to the respondents with the following sections:

- Part 1 consists of socio-demographic factors, work characteristics of respondents having experience for caring HIV/AIDS patients and also having training programme about HIV/AIDS
- Part 2 consists of 32 true/false questions that addressed knowledge related to care of HIV/AIDS patients. It includes agent and immunology, course and manifestation, transmission and incidence, risk group and precaution and prevention. The total score was 32 and each statement is answered with true, false or I do not know, each correct answer was score 1 and each incorrect answer scores 0 (I do not know responses are treated as false) and scores above the mean choose as good knowledge
- Part 3 consists of the questions addressed attitudes towards care of HIV/AIDS patients

Section (c) consists of 20 five-point Likert scale items. These items include five subscales as emotions toward people with HIV (6 items); caring of patients with HIV (5 items); effectiveness of care (3 items); fear of contagion (3 items) and readiness to care (3 items). Each item has a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) and negative attitude were scored reversely. Score more than mean choose as favourable attitude. The original English Version of HIV knowledge questionnaire was translated into Persian language (Persian-Draft 1) by Persian individual who were bilingual in English and Persian. Other bilingual Persian individual was done the backtranslation of the Persian-Draft-1. The researcher compared these 2 questionnaires to ensure equivalence of items. The Persian Version of HIV Attitude Questionnaire is used by Aghamolami *et al*. (2009) among nurses in Iran. Pre-test of questionnaires were done among 30 nurses to ensure that the questions are easily understandable and to assess the comprehension of the questionnaire.

These results were not included in the study analysis. The questionnaire on knowledge had the Cronbach's alpha coefficient of 0.71. The questionnaire on attitude, for each part had the Cronbach's alpha coefficient of 0.68, 0.69, 0.73, 0.88 and 0.87, respectively. Data analysis was done using Statistical Package for Social Sciences (SPSS) Version 17. Descriptive analysis was used to show the frequency and percentage, the mean, range and standard deviation of data from all three parts of the instrument and the subcategories.

Chi-square test was used for qualitative data. Pearson correlation was done for finding the association between continuous variable and Student t-test performed for finding association between continues and categorical data. Multiple logistic regression analysis was done to find the predictors of good knowledge and positive attitude among nurses, as well as to control the confounders. Written informed consent was given to all the participants of study.

RESULTS AND DISCUSSION

Of 385 questionnaires distributed, 86% were returned completely. The mean age of nurses was 34.82 years (7.10 SD) old and ranged from 22-56. A total of 25.9% of them were between 20-29 years, around half of them (47%) were in 30-39 years and 27.1% were 40 years and above. Majority of the respondents were married (n = 209, 64%). The education background of respondents differ in which majority of the respondents (around 90%) had bachelor degree while the others had diploma (n = 27, 8.3%) and master (n = 4, 1.2%). About 546 out of 331 respondents (74.8%) are working in non-surgical departments while 80, 3 of them (25.3%) are working in surgical departments. The mean working experience was 10.22±6.83 (SD) years in the hospital (Table 1). A total of 178 of the respondents (54.3%) did not attend any training program such as workshop or seminar and only 45.7% of nurses have had training programme about HIV/AIDS. Source of information for 30.9% of respondent was mass media, 24% from Medical Journals and posters and 45% through seminar and workshop. More than half of respondents (n = 181, 55%) had provided care for HIV/AIDS patients. About 55.6% of respondents scored above the mean (Table 2).

Table 1: Socio-demographic factors and work characteristics of respondents

Factors	Frequency	Percentage	Mean±SD
Age (years)	317		34.82±7.10
20-29	82	25.9	
30-39	149	47.0	
≥40	86	27.1	
Marital status			
Single	117	35.9	
Married	209	64.1	
Education background			
Diploma	27	8.3	
Bachelor	296	90.5	
Master	4	1.2	
Work experience (years)	322		10.22±6.83
0-5	99	30.7	
6-10	79	24.5	
11-20	113	35.1	
>20	31	9.6	
Nurses department			
Surgical	83	25.2	
Non-surgical	246	74.8	
Working hour (per week)			
<44	103	31.5	
≥44	224	68.5	

Table 2: Total score on knowledge among nurses

Total scores	Frequency (n = 331)	Percentage
<10	1	0.3
10-15	49	14.8
16-20	128	38.7
21-25	136	41.1
>25	17	5.1

Mean = 19.95; SD = 3.79; Median = 20; Mode = 22; Full score = 32

The strength of knowledge was in areas related to transmission and incidence and prevention and precaution while weak areas were related to agent and immunology, course and manifestation and risk group. In this study, the total attitude score was 100 and the mean score was 72.04±8.84 (SD) among 331 nurses. A total of 46.8% of nurses had favourable attitude towards caring of HIV/AIDS patients. The mean scores of attitudes in dimensions including emotions towards patients with HIV, caring of patients with HIV, effectiveness of care, fear of contagion and readiness for care were 22.55±3.94, 21.27±3.23, 11.93±2.08, 8.23±3.54 and 8.05±2.88 (SD), respectively.

There were statistically significant higher HIV/AIDS knowledge among those who had bachelor degree (χ^2 = 5.943, p<0.05). There was a significant association between nurses department where they work and knowledge level (χ^2 = 8.525, p<0.05) in which 60.6% respondents in non-surgical departments had good knowledge as compared to 42.2% in surgical departments. A total of 61.3% of those who had experience for caring HIV/AIDS patients significantly had good HIV/AIDS knowledge (χ^2 = 4.758, p<0.05). There is a significant different in knowledge mean score between respondent with and without training programme (t = 2.148, p<0.05). Most of nurses (53%) had ufavourable attitude towards caring for HIV/AIDS patients. Table 3 shows the frequency of responses in each category. Attitude towards care of HIV/AIDS patients was statistically significantly correlated with work experience of respondents (r = 0.134, p<0.05). There was also a significant association between nurses departments where they work and attitude (χ^2 = 7.973, p<0.05). A total of 51.6% of nurses who were in nonsurgical departments had favourable attitude. In addition, a significant positive relationship was found between knowledge score and attitude score (r = 0.253, p<0.001), indicating that more knowledgeable nurses had favourable attitudes toward patients with HIV/AIDS (Table 3).

As can be seen in Table 4, multiple logistic regression found that there were significant associations between two variables and knowledge, namely department where the nurses work and experience of caring HIV/AIDS patients (p<0.05). Nurses in nonsurgical department on average have 2.5 times (CI (95%) 1.222-3.475) better knowledge as compared to respondents who were in surgical department. It was also found that nurses with longer work experience of caring HIV/AIDS patients have 1.5 times (CI (95%) 1.0-2.541) better knowledge as compared to those who had shorter work experience. Multiple logistic regression found that there was a significant association between department where the nurses work and attitude (p<0.05). Nurses in

Table 3: Frequency of responses about attitude towards care of HIV/AIDS patients

Items	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Emotions towards people with AIDS/HIV					
Patients with HIV/AIDS are responsible for their illness	61 (18.4)	147 (44.4)	39 (11.8)	71 (21.5)	11 (3.3)
Patients with HIV/AIDS deserve the punishment for their risk behaviours	91 (27.5)	115 (34.7)	59 (17.8)	50 (15.2)	15 (4.5)
Patients with HIV/AIDS should be isolated from society	93 (28.4)	157 (48.0)	43 (13.1)	30 (9.2)	4 (1.2)
Patients with HIV/AIDS should not be admitted to hospitals	135 (40.9)	153 (46.2)	22 (6.6)	19 (5.8)	1 (0.3)
Most of the patients with HIV/AIDS have immoral and high-risk behaviours	66 (19.9)	133 (40.2)	36 (10.9)	77 (23.3	10 (3.0)
Not admitting patients with HIV/AIDS in hospitals makes them to have a feeling of hate	12 (3.7)	17 (5.1)	31 (9.5)	190 (58.1)	77 (23.3)
Working with AIDS/HIV patient					
People with HIV/AIDS should be on a separate ward in a hospital	14 (4.2)	51 (15.4)	21 (6.3)	149 (45.4)	93 (28.4)
Staff and healthcare professionals should be notified when a patient has HIV/AIDS	9 (2.8)	2 (0.6)	2 (0.6)	97 (29.7)	217 (66.4)
The beds of patients with HIV/AIDS should be marked	12 (3.6)	38 (11.5)	20 (6.1)	113 (34.1)	145 (44.2)
Caring of HIV/AIDS patients should be done with total security and precaution	2 (0.6)	5 (1.5)	8 (2.4)	113 (38.7)	203 (61.3)
Relatives/sexual partner of patients with HIV/AIDS should be notified of the patient's status even without his/her consent	5 (1.5)	10 (3.0)	7 (2.1)	95 (29.0)	211 (64.3)
Effectiveness of care					
The quality of life of patients with HIV/AIDS can be improved with counselling	4 (1.2)	9 (2.7)	19 (5.7)	172 (52.0)	124 (37.5)
Treating someone with HIV/AIDS is a waste of resources	99 (30.0)	148 (44.7)	46 (13.9)	21 (6.3)	16 (4.8)
Medications to treat opportunistic infections may prolong the life of patient with HIV	9 (2.7)	14 (4.3)	58 (17.5)	172 (52.3)	76 (23.1)
Fear of contagion					
I am scared to have contact with patients with HIV/AIDS in hospital	36 (10.9)	94 (28.4)	42 (12.7)	99 (30.1)	58 (17.6)
Thinking about caring of HIV/AIDS patients worry me	38 (11.5)	88 (26.6)	34 (10.3)	114 (34.4)	57 (17.2)
I am concerned about becoming infected with HIV through patient care	30 (9.1)	76 (23)	23 (6.9)	137 (41.4)	63 (19.1)
Readiness to care					
I am willing to take care of patients with HIV/AIDS	51 (15.4)	84 (25.4)	112 (33.8)	70 (21.3)	12 (3.6)
I accept caring of patients with HIV/AIDS	44 (13.3)	85 (25.7)	108 (32.7)	83 (25.2)	10 (3.0)
I satisfy with caring patients with HIV/AIDS	55 (16.6)	101 (30.5)	107 (32.3)	53 (16.2)	12 (3.7)

Table 4: Multiple logistic regression analysis to predict knowledge of respondents

Variables	B-values	Wald	p-values	CI (95%)
Constant value	-1.368	0.255	0.003***	
Education background	0.784	2.191	0.072	0.933-5.145
Departments	0.723	2.061	0.007**	1.222-3.475
Training programme	0.166	1.181	0.480	0.744-1.874
Having experience of caring HIV/AIDS patients	0.467	1.594	0.049*	1.000-2.541

*Significant at p<0.05; **Significant at p<0.01; ***Significant at p<0.001. Knowledge (Good: 1, Poor: 0); Education background (Diploma: 0, Bachelor: 1); Department (Surgery: 0, Non-surgery: 1); Training programme (Not-trained: 0, Trained: 1) and having experience of caring HIV/AIDS patients (No: 0; Yes: 1)

non-surgical department had 2.12 (CI (95%) 1.256-3.575) times more favourable attitude as compared to respondents who were in surgical department. This study results showed that in general, nurses in Golestan Hospital had relatively moderate knowledge level related to issues of HIV/AIDS.

The significant association between knowledge towards HIV/AIDS and education background has been reported in previous studies (Horsman and Sheeran, 1995; Tierney, 1995). This study found that there was an association between nurses academic grade and knowledge level (p<0.05). Nurses who had bachelor degree had higher level of knowledge as compared to those who had diploma (p<0.05). Further analysis found that education background of nurses was not significantly associated with knowledge level (OR = 2.191, CI (95%) = 0.933-5.145, p>0.05). This was similar to the finding of Dellobelle *et al.* (2009) among nurses in South Africa (p<0.001), the result showed that senior and well-trained nurses had more satisfactory level of knowledge. Also, Walusimbi and Okonsky (2004), Suominen *et al.* (2010) and Mbanya *et al.* (2001) reported similar finding among nurses.

In this study, there is no significant association between nurses age and marital status with knowledge level towards care of HIV/AIDS patients. Some other studies showed similar results (Suominen *et al.*, 2010; Dellobele *et al.*, 2009; Oyeyemi *et al.*, 2006; Kermode *et al.*, 2005; Walusimbi and Okonsky, 2004). This study also found that there is no significant association between nurses duration of employment and working hours per week with knowledge level towards care of HIV/AIDS patients. Other studies reported similar findings (Dellobelle *et al.*, 2009; Oyeyemi *et al.*, 2006; Kermode *et al.*, 2005; Walusimbi and Okonsky, 2004; Lohrmann *et al.*, 2000). However, Suominen *et al.* (2010) found that working experience of nurses correlated negatively with knowledge score (r = -0.127, p = 0.004).

This study found that there is a significant association between nurses who had experience caring of HIV/AIDS patients and their knowledge level ($p<0.05$). In the study by Suominen *et al.* (2010) among nurses in European countries, it was found that previous experience of caring HIV/AIDS patients had positive impact on knowledge level. Williams *et al.* (2006) was also found that nurses who had cared more HIV/AIDS patients, their knowledge were better and they scored higher on knowledge scale. Some other studies reported similar results (Oyeyemi *et al.*, 2006; Kermode *et al.*, 2005; Walusimbi and Okonsky, 2004; Lohrmann *et al.*, 2000). Meanwhile, knowledge towards care of HIV/AIDS patients was moderately adequate but there is some gap and misconception due to occupational HIV transmission, disease presentation and HIV risk prevention. Some previous studies also reported the same gap and misconception among healthcare workers (Kohi and Horrocks, 1994; Adelekan *et al.*, 1995; Mbanya *et al.*, 2001; Walusimbi and Okonsky, 2004; Oyeyemi *et al.*, 2006; Dijkstra *et al.*, 2007; Delobelle *et al.*, 2009). About >68% agreed with the statement HIV/AIDS is highly contagious. However, this statement is not true. According to CDC report, the average risk of HIV transmission has been estimated to be about 0.3% (CI (95%) = 0.2-0.5%). Study by Delobelle *et al.* (2009) reported similar finding in which >72.1% of respondents agreed with this statement. However in the study by Walusimbi and Okonsky (2004) among nurses in Uganda, more nurses (56.2%) did not agree with this statement.

The findings show that attitudes found here towards HIV/AIDS patients are in line with those found in other studies where around half of nurses (47%) had a favourable attitude towards care of HIV/AIDS patients (Mbanya *et al.*, 2001; Nobandegani *et al.*, 2005). This study found that there were no significant associations between socio-demographic variables and nurses attitude ($p>0.05$). This result was similar to the finding of other studies (Walusimbi and Okonsky, 2004; Gulifeiya and Rahmah, 2008; Baylor and McDaniel, 1996). This study also showed that there was a significant association between the departments where the nurse work and attitude ($p<0.05$). Nurses who were in nonsurgical departments had more favourable attitude compared to those who were in surgical departments ($p = 0.005$). Delobelle *et al.* (2009) found that there was a significant positive association between nurses attitude and ward allocation ($p<0.05$). This study found that nurses attitude was positively correlated with the length of work experience ($r = 0.134$, $p<0.05$). This result showed that more experienced nurses had more positive attitude. The rationale is that more experienced nurses had provided care for more HIV/AIDS patients. Aghamolami *et al.* (2009) in the study among Iranian healthcare workers showed similar results. However, Suominen *et al.* (2010) in their study among European nurses reported negative correlation ($r = -0.171$, $p<0.001$). In this study, direct care had the lowest score compared to other subcategories of attitude (mean = 8.05±2.88 SD), it means that participants had less favourable attitude to provide care to patients with HIV/AIDS. The study by Aghamolami *et al.* (2009) among Iranian healthcare workers in Bandar Abbas supported the finding of this study. The main reason was fear of being infected when providing care for HIV/AIDS patients. A total of 36% of Swedish nurses in the study by Rondhal *et al.* (2003) want to refrain from caring HIV/AIDS patients if it is possible. The wish to avoid caring HIV/AIDS patients cannot be described with the fear of contagion alone. Some factors such as moral and social values could also be a possible description. Nurses who wished to refrain from caring HIV/AIDS patients might provide basic care to these patients, however there is a risk that it would be given without compassion. In this study, fear of contagion and occupational exposure were major concerns of the nurses, as indicated by responses to I am concerned about becoming infected with HIV through patient care (60.5% agreement, n = 331). In this study, fear of contagion was positively correlated with knowledge ($r = 0.144$, $p<0.01$). Nurses who are more knowledgeable had less fear of being infected. Educational and occupational training programmes have led to decreased fear and inadequate knowledge regarding HIV/AIDS transmission.

In the study by Armstrong-Esther and Hewitt (1890) among Canadian student nurses, it was shown that after four months of education on AIDS and care of the patients, there was a significant decline (83-57%) in fear and concern about treating HIV/AIDS patients. Knowledge score was significantly positively correlated with attitude ($r = 0.0253$, $p<0.05$). Some other previous studies showed significant positive correlation between knowledge and attitude of nurses and healthcare workers towards HIV/AIDS patients (Suominen *et al.*, 2010; Delobelle *et al.*, 2009; Umeh *et al.*, 2008; Walusimbi and Okonsky, 2004; Lohrman *et al.*, 2000; McCann and Sharkey, 1998; Uwakwe, 2000). It is suggested that empowering nurses with better knowledge would promote their attitude towards patient care as has been found by several studies. There are some limitations to this cross-sectional study. The researchers have some limitations for asking questions about sexual beliefs concerning sexual behaviours of respondents in the religious country like Iran. This study was carried out in only one university hospital therefore, generalization of findings should be

carefully. In the cross-sectional studies, always the non-responder bias is a major concern. Identifying the nurses characteristics who failed to return the questionnaire was not possible. Therefore, the differences between responders and non-responders could not be recognized. However, in this study the response rate (86%) was high and there was no reason to suppose that non-responders were substantially different from responders.

CONCLUSION

While most of nurses in this study had satisfactory level of essential knowledge towards HIV/AIDS, more than half of them had negative attitude. Health provider must plan to change nurses behavior in communication with HIV/AIDS patients. The findings of the study highlighted the requirement to plan programmes to improve the occupational safety of nurses at teaching Hospitals and to minimize the fear and concern of nurses in caring of HIV/AIDS patients. The results of this study recommend that such programmes would be of benefit. Eventually, a well-educated nurse with more positive attitude and fewer concern will be more beneficial for HIV/AIDS patients.

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