Public perceptions about HIV/AIDS and discriminatory attitudes toward people living with acquired immunodeficiency syndrome in Iran

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Abstract

Negative and discriminatory attitudes towards people living with HIV/AIDS (PLWHA) are one of the biggest experienced challenges by people suffering from HIV, and these attitudes have been regarded as a serious threat to the fundamental rights of all infected people who are affected or associated with this disease in Iran. This study aimed to determine the relationship between public perception about HIV/AIDS and discriminatory attitudes toward PLWHA. The present study was conducted using a descriptive and survey design. Data were collected from 450 patients (236 male and 214 female) in Tehran and Yazd cities. The research instruments were modified HIV-related knowledge/attitude and perception questions about PLWHA, and discriminatory attitudes toward PLWHA. The results showed that prevalence of discriminatory attitudes toward PLWHA in the studied population was 60.0%. There was a significant negative correlation between citizens’ awareness about HIV/AIDS, HIV-related attitudes, negative perception toward people with HIV/AIDS symptoms and their discriminatory attitudes toward PLWHA ($p < .01$). The hierarchical multiple regression analysis showed that components of public perception about HIV/AIDS explained for 23.7% of the variance of discriminatory attitudes toward PLWHA. Negative public perceptions about HIV/AIDS in Iran associated with discriminatory attitudes toward PLWHA and cultural beliefs in Iran tend to stigmatize and discriminate against the LWHA.

Keywords: Acquired Immunodeficiency Syndrome, Human Immunodeficiency Virus, negative perception, discriminatory attitudes, Iran

Résumé

Les attitudes négatives et discriminatoires envers les personnes vivant avec le VIH/SIDA (PVAVS) sont l’un des plus grands défis vécus par les personnes souffrant du VIH, et ces attitudes ont été considérées comme une grave menace pour les droits fondamentaux de toutes les personnes infectées qui sont touchés ou associés à cette maladie en Iran. Cette étude visait à déterminer la relation entre la perception du public sur le VIH/SIDA et les attitudes discriminatoires à l’égard des PVAVS (personnes vivant avec le VIH/SIDA). La présente étude a été réalisée en utilisant une conception descriptive et enquête. Les données ont été recueillies auprès de 450 patients (236 hommes et 214 femmes) à Téhéran et dans les villes de Yazd. Les instruments de recherche ont été modifiés connaissances/attitudes et perceptions des questions liées au VIH, et environ PVAVS attitudes discriminatoires envers les PVAVS. Les résultats ont montré que la prévalence des attitudes discriminatoires envers les PVAVS dans la population étudiée était de 60,0%. Il y avait une corrélation négative significative entre la sensibilisation des citoyens sur le VIH/SIDA, les attitudes liées au VIH, la perception négative envers les personnes vivant avec le VIH/SIDA symptômes et leurs attitudes discriminatoires envers les PVAVS ($p < .01$). L’analyse de régression multiple hiérarchique a montré que les composants de la perception du public sur le VIH/SIDA a expliqué 23,7% de la variance des attitudes discriminatoires envers les PVAVS. Perceptions négatives du public sur le VIH/SIDA en Iran associées à des attitudes discriminatoires envers les PVAVS et les croyances culturelles en Iran ont tendance à stigmatiser et discriminer vivant avec le VIH/SIDA (VAVS).

Mots-clés: Syndrome immunodéficitaire acquis, Virus de l’immunodéficience humaine, Perception négative, Les attitudes discriminatoires, Iran

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Introduction

The United Nations epidemiological data on AIDS estimated that in 2013, 35 million [33.2–37.2] people are suffering from HIV/AIDS worldwide (UNAIDS 2014). The mortality rate associated with HIV/AIDS in 2011 was 11 people in 100,000 subjects (World Health Organization 2014). The prevalence of HIV/AIDS has been increasing and Iranian officials have warned about the explosive outbreak of this disease and have described it a risk situation (Bakhtieari, Maleki, Alavi & Ghodsi 2008). Profile of HIV in Iran, in 2013, showed that, 70,000 people were living with HIV symptoms (Adults aged 15 and up living with HIV, 68,000; Women aged 15 and up living with HIV, 19,000; children aged 0–14 living with HIV, 2100; and deaths due to AIDS, 4400. Thus, Iran has been known as one of the most high risk countries with regard to HIV infection in the world (Zareban, Heidarnia, Rakhshani, Jabari & Abdollahi 2006).

HIV/AIDS is a disease that due to stereotypes and social stigma of society, not only in respect of physical health but also in terms of psychological and social health (Aranda & Naranjo 2004). One of the main negative outcomes for people with symptoms of HIV is stigmatizing attitudes. Stigma and discrimination associated with HIV/AIDS are the biggest challenges experienced by people suffering from the disease and it has been recognized as a serious threat to the fundamental rights of all infected people who are affected by or associated with this disease (Aranda & Naranjo 2004; Holzemer et al. 2007).

Goffman (1963) defined stigma as a multidimensional concept that focuses on deviations from an accepted standard or condemnation. Stigma is an attitude in which the eyes of the society help to reduce a person who holds it. HIV/AIDS-related stigma refers to prejudice, discounting, discounting, and discrimination that people who suffering from HIV/AIDS, as well as groups and communities who have relationship with it are targeted (Herrek 1999). Discrimination is a concept that is closely related to the stigma that appears in unfair and unjust treatment with a person who is in conflict with a real or perceived HIV status (Giddens, Duneier, Appelbaum & Carr 2009). Stigma turns to discrimination when our thoughts, beliefs, or attitudes lead to direct action. Discrimination is defined as any unfair behavior of an individual who is solely a member of a particular group. Discrimination involves displaying negative attitude toward members of a particular group, and it could limit the responsibilities of the team members while these responsibilities are accessible for others (Giddens et al. 2009).

However, the exact prevalence rate of AIDS-related stigma in Iran is not clear but some researchers (Abedi, Akbari & Monzavi 2014; Hajian Motlaq et al. 2004; Tavoozi, Zaferani, Enzevaee, Tajik & Ahmadinezhad 2004), have shown that the stigmatized attitudes toward people with HIV symptoms were very high. These studies reported the prevalence of stigma and negative perceptions toward people with HIV/AIDS symptoms a range from 46% to 69%.

Various researchers have mentioned several negative outcomes as a result of HIV/AIDS-related stigma and discrimination. For example, the direct negative effects on mental and emotional health of people suffering from HIV/AIDS (Link, Struening, Rahav, Phelan & Nuttbrock 1997; Logie & Gadalla 2009; Minior, Galea, Stuber, Ahern & Ompad 2003; Young, Stuber, Ahern & Galea 2005), key obstacles to use HIV services, including delays in receiving care from health centers (Alonzos & Reynolds 1995; Chesney & Smith 1999; Fortenberry et al. 2002; Holzemer et al. 2007), increasing feelings of hopelessness and despair (Busch & Stevens 2006), increase rates of depression (Berger, Ferrans & Lashley 2001; Vanable, Carey, Blair & Littlewood 2006; Wright, Naar-King, Lam, Templin & Frey 2007), low self-esteem (Berger et al. 2001; Bunn, Solomon, Miller & Forehand 2007; Vanable et al. 2006; Wright et al. 2007), disorders in mental health (Mak, Poon, Pun & Cheung 2007), participation in risky sexual behaviors (Kinsler, Wong, Sayles, Davis & Cunningham 2007; Sayles et al. 2008; Vanable et al. 2006), and a negative impact on the illness behavior of people suffering from HIV, for example; no interest to look for centers to do HIV testing and no adherence to the medical regimen (Butt 2008; Fortenberry et al. 2002; Pascoe & Smart Richman 2009).

Some studies also have raised gendered dimensions and outcomes of people, especially for women, infected with HIV/AIDS. For example, disinherit women after their husband’s death, marriage breakdown, and loss of employment their situation (Human Rights Watch 2003a, 2004a; UNFPA 2004). Stigma and discrimination among women can lead to their strong and complex reactions such as frustration, denial, and silence of patients and lack of early prevention and treatment in people at high risk (Holzemer et al. 2007).

Several studies have demonstrated that discrimination against people living with HIV/AIDS (PLWHA) has extensively raised in different cultures and countries (Blendon & Donelan 1988; Danziger 1994; King 1989; Lau & Tsui 2003). For example, researches in Hong Kong reported discriminatory attitudes toward people with symptoms of HIV/AIDS among adults (Hong Kong AIDS Foundations 1996), teenagers (Davis, Noel, Chan & Wing 1998), workers (Lau & Ma 1995), Health service providers, (Lau & Lee 1996) and people at work (Lau & Wong 2001). Also, in countries such as the UK (Ipsos MORI 2010) and Ethiopia (Aga, Kylma ¨ & Nikkonen 2009; Deribew et al. 2010; Reilley, Hiwot & Mesure 2004), stigmatization and negative attitudes toward PLWHA have been reported. In Iran, several studies have shown negative attitudes about PLWHA (Etemad 2010; Rad, Hashemi & Alizadeh 2009; Sanei Moghadam et al. 2011; Sassani, Naji, Abedi & Taheri 2013) and also among nurses providing health care to PLWHA (Zeighami Mohamadi, Zeinali, Esmaily & Nikbakht Nasrabadi 2011).

Previous researchers in Iran have studied beliefs, knowledge, and attitudes of different people about HIV/AIDS, while no studies have been done on the effect of attitudes and beliefs types toward HIV/AIDS on their actual behavior toward PLWHA. This study aimed to investigate the impacts of public beliefs and perceptions about HIV/AIDS on discriminatory attitudes toward PLWHA in Iran.
Methods
This study was conducted using a cross-sectional survey design. Data were collected from a citizens between 20 and 50 years old in Yazd and Tehran cities in July 2013. These people were selected among the passengers in two train stations who were waiting for a train in Tehran and Yazd. First, to calculate the variance of public perception toward people with HIV symptoms, a pre-test was performed on 50 of the passengers. Then, using a modified Cochran’s sampling formula, Then, using a modified formula Cochran sampling, sample size of 450 was calculated. Finally, using simple random sampling with lottery ticket numbers of passengers, 450 passengers were selected. The selected people were asked to respond to a public perception self-report questionnaire about HIV and a questionnaire about discriminatory attitudes toward PLWHA. Firstly, some information was given to the respondents about the aims of the study by the interviewer and then by using written consent, their approval was obtained for this study. The average time needed to complete the questionnaire was about 20 minutes. Prior permission to conduct this study was obtained from the head master of the Railway stations.

Instruments
HIV-related knowledge/attitudes and perceptions about PLWHA: Lay beliefs about knowledge and attitudes toward HIV/AIDS were investigated by using a modified questionnaire of lay perceptions about HIV/AIDS (Lau & Tsui 2005). The questionnaire consisted of 15 questions in which 3 dimensions of public beliefs about HIV/AIDS were measured which are as follows; the awareness about HIV/AIDS (7 items), attitude related to AIDS (3 items), and negative perceptions about people with HIV symptoms (5 items). A five-point forced-multiple-choice Likert scale format, ranging 1–5 (strongly agree, agree, neutral, disagree, strongly disagree), was used to reflect participants’ level of agreement. The score range of this questionnaire was 15–75. Higher scores on each component of the questionnaire of public perceptions about HIV/AIDS represented a high awareness about HIV/AIDS, whereas, low score represented negative attitudes about HIV/AIDS, and higher negative perceptions about PLWHA.

In the present study, the questionnaire of public perceptions about HIV/AIDS was first translated into Persian by the researcher. In order to determine the factor structure and normalization of public perceptions about HIV/AIDS, the method of principal component analysis on 15 items, the questionnaire was used. In this analysis, Varimax rotation was used as a selection criterion, while Eigen values were higher than 1. The results showed that out of 20 compiled items, in order to perform principal component analysis, through a method of verification, 1 factor was created. By using Cronbach’s alpha, reliability coefficient of questionnaire of discriminatory attitudes toward PLWHA was measured 0.88.

Statistical methods
The extracted data were analyzed using SPSS 20. Then, descriptive statistics, frequency, percent, mean, and standard deviation were used to describe the demographic and social characteristics. Zero-order Pearson correlation method was used to assess the relationship between the components of public perceptions about HIV/AIDS and discriminatory attitudes toward PLWHA. Hierarchical multiple regression was applied to determine the contribution of the components of public perceptions about HIV/AIDS in explaining the variance of discriminatory attitudes toward PLWHA.

Results
Four hundred and fifty patients were assessed (Table 1). While 52.4% of respondents were male and 47.6% were female. Discriminatory attitudes toward PLWHA in women were higher than men, with a mean score of 63.4 and a standard deviation of 10.7. The average age of respondents was 30.8 with a standard deviation of 6.01. In terms of education, the majority of samples (47.3%) have academic educations and very few (9.6%) had a primary level of education. The highest discriminatory attitudes toward PLWHA were among the respondents with academic education, with a mean score of 64.2 and a standard deviation of 6.01. The results showed that discriminatory attitudes were among the respondents with academic education, which were more than the respondents with a primary level of education.

Discriminatory attitudes toward PLWHA: Using the modified questionnaire of discriminatory attitudes toward PLWHA (Lau & Tsui 2005), citizens’ beliefs and behaviors toward people with symptoms of HIV/AIDS were investigated. The original version of the questionnaire was conducted to study people discriminatory attitudes toward PLWHA in Hong Kong (Lau & Tsui 2005). The questionnaire consisted of 20 items which evaluated the general attitudes and behaviors toward people with symptoms of HIV/AIDS. The respondents were asked to rank their agreement or disagreement with the items of the questionnaire, based on a 5-point scale (from 1 to 5). The higher scores showed the higher rate of discrimination. In this study, the median of discriminatory attitudes toward PLWHA was 60. The questionnaire developer, by using Cronbach’s alpha, measured the reliability of the discriminatory attitudes toward PLWHA $\alpha = 0.84$. In the present study, the questionnaire of public perceptions about HIV/AIDS was translated into Persian by the researcher.

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HIV/AIDS. The mean score discriminatory attitudes toward PLWHA among the sample who had reported that they do not know anyone with symptoms of HIV/AIDS was higher than the ones who confessed that they know people with symptoms of HIV/AIDS (M = 90.0; SD = .00). All participants reported that they have read or heard about AIDS. Also, all samples (100%) reported that they have not had a family history of AIDS. The prevalence of discriminatory attitudes toward PLWHA in this study was 60.0%.

The correlation matrix between public perceptions about HIV/AIDS and discriminatory attitudes toward PLWHA

There was a significant negative correlation between citizens’ awareness about HIV/AIDS and discriminatory attitudes toward people with symptoms of HIV/AIDS (r = -0.385; p < .01). AIDS-related attitudes showed a significant positive correlation with discriminatory attitudes toward people with symptoms of HIV/AIDS (r = 0.414; p < .01). Besides, a significant positive correlation between negative perceptions about people with symptoms of HIV and discriminatory attitudes toward people with symptoms of HIV/AIDS was observed (r = 0.397; p < .01) (Table 2).

Multivariate analyses

Using hierarchical multiple linear regression analysis in two steps, the contribution of each socio-demographic variables and public perceptions components about HIV/AIDS in explaining the variance of discriminatory attitudes toward PLWHA patients were evaluated (Table 3). The results showed that socio-demographic variables have explained 9.9% of the variance of discriminatory attitudes toward PLWHA (Adj. R² = 0.99; F(4,445) = 13.33; p < .1). In the second phase, the components of public perceptions about HIV/AIDS were applied in the model. These components explained 24.7% of the variance of discriminatory attitudes toward PLWHA (Adj. R² = 0.247; F(3,445) = 49.7; p < .1).

Discussion

This study aimed to determine the impact of public beliefs and perceptions about HIV/AIDS and the quality of their attitude toward PLWHA in Iran. The prevalence rate of discriminatory attitudes toward PLWHA in this study was very high and most of participants had discriminatory and negative attitudes toward PLWHA. It shows that PLWHA are extremely stigmatized in Iran. Some previous studies in Iran reported negative attitudes and stigma toward people with symptoms of HIV/AIDS (Etemad 2010; Rad et al. 2009; Sanei Moghaddam et al. 2011; Sassani et al. 2013). In a study using a phenomenological approach, Sassani et al. (2013) found that the majority of participants in their study reported that after others’ awareness of their symptoms of HIV.

They were labeled as bad guys and were stigmatized which was a painful experience for the participants. They also experienced feelings of rejection by their partners, friends and family, increasing social isolation, depression, loneliness, worthlessness, and lack of social and emotional support from others. Zeighami Mohamadi et al. (2011) reported that more than half of the nurses who were in the study, showed an average discrimination in the treatment of PLWHA. Results of similar studies in other countries represented an increase of discriminatory attitudes toward people with symptoms of HIV/AIDS (Blendon & Donelan 1988; Danziger 1994; King 1989; Lau & Tsui 2003). Lau and Tsui (Lau & Tsui 2005) in a study in Hong Kong indicated that 42% of respondents had discriminatory attitudes toward people with symptoms of HIV/AIDS. Moreover, Lau et al. (2003) showed that 40–50% of

### Table 1. Socio-demographic characteristics of respondents and mean and standard deviation of discriminatory attitude toward people with HIV/AIDS.

| Variable               | N (%) | M ± SD     |
|------------------------|-------|------------|
| Age                    | 30.8 ± 6.01 |
| Gender                 |       |            |
| Male                   | 236 (52.4) | 62.1 ± 9.5 |
| Female                 | 214 (47.6) | 63.4 ± 10.7 |
| Education level        |       |            |
| Primary                | 43 (9.6) | 57.7 ± 6.2 |
| Guidance               | 85 (18.9) | 61.1 ± 9.3 |
| High school            | 109 (24.2) | 62.9 ± 9.2 |
| Academic               | 213 (47.3) | 64.2 ± 11.2 |
| Knowing person with AIDS |       |            |
| Yes                    | 3 (.7) | 90.0 ± .00 |
| No                     | 447 (99.3) | 62.5 ± .46 |
| Hearing/reading about AIDS |       |            |
| Yes                    | 450 (100) |           |
| No                     | 0 (0)  |            |
| Family history of AIDS |       |            |
| Yes                    | 0 (0)  |            |
| No                     | 450 (100) |           |
| Discriminatory attitude |       |            |
| Yes                    | 227 (50.4) |           |
| No                     | 222 (49.6) |           |

### Table 2. The correlation matrix between public perceptions about HIV/AIDS and discriminatory attitudes toward PLWHA.

|                        | 1      | 2         | 3         | 4         |
|------------------------|--------|-----------|-----------|-----------|
| HIV-related knowledge  | 1.000  |           |           |           |
| HIV-related attitudes  | -.095  | 1.000     |           |           |
| Negative perceptions about PLWHA | -.056 | .233**   | 1.000     |           |
| Discriminatory attitudes toward PLWHA | -.258** | .414**   | .397**    | 1.000     |

* p < .05.
** p < .01.
the local population who suffering from HIV/AIDS are strongly discriminated. The discriminatory attitudes and stigmatization toward PLWHA in countries such as the UK (Ipsos MORI 2010) and Ethiopia (Aga et al. 2009; Deribew et al. 2010; Reilley et al. 2004) were also reported.

This study showed a significant negative correlation between citizens’ awareness about HIV/AIDS and discriminatory attitudes toward PLWHA. The more knowledge the respondents had about HIV, the lower discriminatory attitudes they showed toward PLWHA. This result is consistent with the findings of previous research (Amuri, Mitchell, Cockcroft & Andersson 2011; Deribew et al. 2010; Hossain & Kippax 2011; Lau & Tsui 2003; Leone & Wingate 1991; Peters, den Boer, Kok & Schaalma 1994), negative perceptions and the perceived stigma toward PLWHA were associated with discriminatory attitudes and behavior toward them. Interestingly, the majority of respondents had a self-blame approach about HIV infection. In other words, many of respondents (28.8%) agreed with the statement that ‘people who have HIV symptoms should be ashamed of themselves’. Also, a large number of respondents described PLWHA as people who are interested in unfettered sex and they deserve punishment. As Ogden and Nyblade (2005) stated, stigma and discrimination are fanned by sensationalist public messages in which immorality is linked with promiscuity, moral transgression and bad behavior and punishment from God, whereas normative social values are related to what is considered appropriate or good behavior. Consequently, the description of PLWHA as guilty individuals not the victims, have led to the formation and approval of stigma and stigmatizing attitude toward people with symptom of HIV.

Results of the regression analysis showed that socio-demographic variables such as age, gender, level of education and being familiar with people with HIV/AIDS symptoms are significant predictors of discriminatory attitudes toward PLWHA. The older respondents’ ages, the more negative their discriminatory attitudes toward PLWHA. This finding is consistent with Lau and Tsui (2005) results in which they indicated that age was regarded as an independent predictor for discriminatory attitudes toward PLWHA. Hussain and Kippax (2011), showed that people’s negative attitudes toward patients with HIV symptoms are correlated with their age.

Level of education was another major predictors of discriminatory attitudes toward PLWHA. Respondents with higher education showed more negative attitudes toward HIV/AIDS. Therefore, the individuals with higher levels of education, especially academic education has more discriminatory attitudes toward PLWHA when they were compared with those with lower levels of education. The results of this study were inconsistent with the findings of some researches in which the positive impact of

### Table 3. Hierarchical multiple regression of Iranian discriminatory attitudes toward people with HIV/AIDS.

| Step | Variables | β  | T   | p    | Changed R² | Adj. R² | F   | p    |
|------|-----------|----|-----|------|------------|---------|-----|------|
| 1    | Socio-demographic |    |     |      |            |         |     |      |
|      | Age       | .095 | 2.04 | .04* | .107       | .99     | 13.33 | .000**|
|      | Gender    | -.097 | -2.1 | .036* |           |         |     |      |
|      | Education | .220 | 4.84 | .000** |           |         |     |      |
|      | Knowing person with AIDS | .252 | 5.56 | .000** |           |         |     |      |
| 2    | Lay perception of HIV/AIDS |    |     |      |            |         |     |      |
|      | HIV-related Knowledge | -.231 | 5.89 | .000** | .249      | .247    | 57.1 | .000**|
|      | HIV-related Attitude | .297 | -7.22 | .000** |           |         |     |      |
|      | Negative perception about PLWHA | .274 | 6.8 | .000** |           |         |     |      |

*p < .05.

**p < .01.

Total: F_{4,442} = 34.95; p < .01; R² = .356; Adj. R² = .346.
education on attitudes toward people with symptoms of HIV/AIDS were proved. For example, Mandal et al. (2008) in Norway showed that people with higher levels of education have had more information and awareness about HIV and also they had more positive attitudes about the rights of people with HIV and their social opportunities. Other studies confirmed the impact of education on reducing stigma and discrimination against PLWHA among health care workers (Amuri et al. 2011; Messer et al. 2010).

Gender was another predictor of discriminatory attitudes toward PLWHA. Some studies have shown that women are more aware about HIV than men (Amuri et al. 2011; Oouzouni & Nakakis 2012). Some studies also showed that women in comparison with men probably have been more proponents of reducing prejudice toward PLWHA with more compassionate attitudes (Ipsos MORI 2010). However, the results of this study were in contrast with previous studies, they showed that women had more negative and discriminatory attitudes toward PLWHA when they are compared with men. A possible explanation is that in Iran awareness of HIV in women is less than men. The results of Tofighi Niaki et al. (2012) confirm this in Iran, where women are less aware about HIV than men.

Finally, respondents who reported that they know people with HIV/AIDS symptoms showed more discriminatory attitudes toward PLWHA than the respondents who claimed that they do not know any PLWHA. A possible explanation is that people who are familiar with patients suffering from the symptoms of HIV, have more information about complications and HIV and the negative physical, mental, and social effects compared to other people who do not know people with symptoms of HIV and thus, they have more negative attitudes toward PLWHA.

It should be noted that the present study had some limitations. The first limitation was related to self-report instrument. Completion of these instruments is largely influenced by the people interests to introduce themselves or impression management strategies. Therefore, it is suggested that future researchers try to measure discriminatory attitudes toward PLWHA and attitudes toward HIV/AIDS based on self-report measures with more indirect measures that are less vulnerable to these effects. Secondly, since this study just focused on respondents’ subjective attitudes and perceptions toward PLWHA, in order to do a more detailed study about discrimination, it is better that the actual behavior of people toward people with HIV symptom be taken into account. Thirdly, the data for this study were collected from urban populations, therefore, to generalize the results to the rural populations should be done with caution. Lastly, this study’s sample size was limited. To achieve a better profile of Iranian attitude toward PLWHA, a population-based study should be performed.

In this study the results showed that the Iranian cultural beliefs tend to stigmatize the PLWHA and have discriminatory attitudes against them. Raising awareness about HIV is really important in changing the attitude of the citizens about PLWHA. The role of HIV awareness and attitudes toward PLWHA is significant in implementing policies that could help to reduce stigmatization and discrimination toward PLWHA. Furthermore, discriminatory attitudes of society or HIV-related-care providers toward PLWHA may have a negative impact on adherence for treatment by people with symptoms of HIV (Brener, von Hippel, von Hippel, Resnick & Treloral 2010). Whereas, positive attitudes toward PLWHA have led to increase in adherence for treatment (Bodenlos et al. 2007). Implementation of population-based programs through mass media for all people has to be taken into account as well.

References

Abedi, F., Akbari, M. R. & Monzavi, M. (2014). Evaluation of Stigma Toward HIV Virus Carriers in Medical Students. Journal of Mashhad Medical Council, 17(3), 125 – 127. [Persian]

Agna, F., Kyfly, J. & Nkikounen, M. (2009). Sociocultural Factors Influencing HIV/AIDS Caregiving in Addis Ababa, Ethiopia. Nursing & Health Sciences, 11, 244 – 251.

Alonzo, A. A. & Reynolds, N. R. (1995). Stigma, HIV and AIDS: An Exploration and Elaboration of a Stigma Trajectory. Social Science and Medicine, 41, 310 – 315.

Amuri, M., Mitchell, S., Cockcroft, A. & Andersson, N. (2011). Socio-Economic Status and HIV/AIDS Stigma in Tanzania. AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV, 23(3), 378 – 382.

Aranda, A. & Naranjo, B. (2004). Quality of Life in HIV Positive Patients. Journal of the Association of Nurses AIDS Care, 15, 265 – 273.

ASHM & NCHSR. (2011). Stigma and Discrimination Around HIV and HCV in Healthcare Settings: Research Report. (Australasian Society for HIV Medicine: Sydney). Available at http://www.ashm.org.au/Publications/Stigma_and_Discrimination.pdf [Verified 8 December 2013]

Bakhtebari, S., Maleki, Z., Alavi, K. & Ghodsi, J. (2008). Knowledge and Attitude Rate of High School Students in Tehran about AIDS. Journal of Beheshti University of Medical Sciences, 26(2), 115 – 124. [Persian]

Berger, B., Ferrans, C. & Lasley, F. (2001). Measuring Stigma in People with HIV: Psychometric Assessment of the HIV Stigma Scale. Research in Nursing and Health, 24(6), 518 – 529.

Blendon, R. J. & Donelan, K. (1998). Discrimination Against People with AIDS: The Public’s Survey on Perspective. New England Journal of Medicine, 319, 1022 – 1025.

Bodenlos, J. S., Grothe, K. B., Whitehead, D., Konkle-Parker, D. J., Jones, G. N. & Branley, P. J. (2007). Attitudes Toward Health Care Providers and Appoint- ment Attendance in HIV/AIDS Patients. Journal of the Association of Nurses in AIDS Care, 18(3), 65 – 73.

Brener, L., von Hippel, W., von Hippel, C., Resnick, I. & Treloral, C. (2010). Perceptions of Discriminatory Treatment by Staff as Predictors of Drug Treatment Completion: Utility of a Mixed Methods Approach. Drug and Alcohol Review, 29, 491 – 497.

Bunn, J., Solomon, S., Miller, C. & Forehand, R. (2007). Measurement of Stigma in People with HIV: A Re-Examination of the HIV Stigma Scale. AIDS Education and Prevention, 19(3), 198 – 208.

Buseh, A. G. & Stevens, P. E. (2006). Constrained but Not Determined by Stigma: Resistance by African American Women Living with HIV. Women & Health, 44(3), 1 – 18.

Butt, G. (2008). Stigma in the Context of Hepatitis C: Concept Analysis. Journal of Advanced Nursing, 62(6), 712 – 724.

Chesney, M. A. & Smith, A. W. (1999). Critical Delays in HIV Testing and Care: The Potential Role of Stigma. American Behavioral Scientist, 42, 1162 – 1174.

Danziger, R. (1994). Discrimination Against People with HIV and AIDS in Poland. British Medical Journal, 308, 1145 – 1147.

Davis, C., Noel, M. B., Chan, F. S. F. & Wing, L. S. (1998). Knowledge, Attitudes and Behaviors Related to HIV and AIDS Among Chinese Adolescents in Hong Kong. Journal of Adolescence, 21, 657 – 665.

Dibrow, A., Abebe, G., Apers, L., Ira, C., Tesfaye, M., Shifa, J., et al. (2010). Prejudice and Misconceptions about Tuberculosis and HIV in Rural and Urban Communities in Ethiopia: A Challenge for the TB/HIV Control Program. BMC Public Health, 10, 400. doi:10.1186/1471-2334-10-400

Etemad, K. (2010). Awareness and Attitudes Towards HIV in Group with High Risk Behavior in 1386. Journal of Gorgan University, 2, 63 – 70. [Persian]

Fortenberry, J. D., McFarlane, M., Bleakley, A., Bull, S., Fusshein, M., Grimley, D. M., et al. (2002). Relationships of Stigma and Shame to Gonorrhea and HIV Risk Behavior in 1386. Journal of Gorgan University, 2, 63 – 70. [Persian]
Hajian Motlagh, N., Farshidi, A., Abbolahi, E., Arvastani, A., Kordestani, A., Ahmadi Yordi, S., et al. (2015). Prejudice and AIDS: The Views and Experiences of People with HIV Infection. AIDS Care, 17, 137–143.

Kinsler, J. L., Wong, M. D., Sayles, J. N., Davis, C. & Cunningham, W. E. (2007). The Effect of Perceived Stigma from a Health Care Provider on Access to Care Among a Low-Income HIV-Positive Population. AIDS Patient Care and STDS, 21(4), 584–592.

Lau, J. T. F. & Lee, S. S. (1996). Attitudes and Training of Health Care Workers on AIDS in Hong Kong. Paper Presented at the Xth International Conference on AIDS, Vancouver, Canada, 7–12 July.

Lau, J. T. F. & Ma, P. (1995). Survey on Knowledge/Attitude Among Social Welfare Personnel. Report submitted to the Hong Kong Council of Social Service.

Lau, J. T. F. & Tsui, H. Y. (2003). Surveillance of Discriminatory Attitudes Toward People Living with HIV/AIDS Among the General Public in Hong Kong from 1994 to 2000. Disability and Rehabilitation, 25, 1354–1360.

Lau, J. T. F. & Tsui, H. Y. (2005). Discriminatory Attitudes Towards People Living with HIV/AIDS and Associated Factors: A Population-Based Study in the Chinese General Population. Sexually Transmitted Infections, 81, 113–119.

Lau, J. T. F. & Wong, W. S. (2001). AIDS-Related Discrimination in the Workplace: The Results of Two Evaluative Surveys Carried Out During a 3-year Period in Hong Kong. AIDS Care, 13, 433–440.

Lau, J. T. F., Tsui, H. Y., Li, C. K., Chung, R. W. Y., Chan, M. W. & Molassiotis, A. (2003). Needs Assessment and Social Environment of People Living with HIV/AIDS in Hong Kong. AIDS Care, 15, 699–706.

Leonore, C. & Wingate, C. A. (1991). Functional Approach to Understanding AIDS Attitudes Toward AIDS Victims. The Journal of Social Psychology, 131, 761–768.

Link, B. G., Struening, E. L., Rahav, M., Phelan, J. C. & Nuttbrock, L. (1997). On Stigma and its Consequences: Evidence from a Longitudinal Study of Men with Dual Diagnoses of Mental Illness and Substance Abuse. Journal of Health & Social Behavior, 38, 177–190.

Loge, C. & Gadalla, T. M. (2009). Meta-Analysis of Health and Demographic Correlates of Stigma Towards People Living with HIV. AIDS Care, 21(6), 742–753.

Mak, W. S., Poon, C. Y. M., Pun, L. Y. K. & Cheung, S. F. (2007). Meta-Analysis of Stigma and Mental Health. Social Science and Medicine, 65, 24–62.

Mandal, R., Nuland, B. R. & Grönningsgård, A. B. (2008). HIV in Norway: Knowledge and Attitudes. Fafo-Report, 44.

Messer, L. C., Pence, B. W., Whetten, K., Whetten, R., Thielman, N., O’Donnell, K. & Ostermann, J. (2010). Prevalence and Predictors of HIV-Related Stigma Among Institutional- and Community-Based Caregivers of Orphans and Vulnerable Children Living in Five Least-Wealthy Countries. BMC Public Health, 10, 504–511.

Minior, T., Galea, S., Stuber, J., Ahern, J. & Ompad, D. (2003). Racial Differences in Discrimination Experiences and Responses Among Minority Subgroups. Ethnicity and Disease, 13, 521–527.

Ogden, J. & Nyblade, L. (2005). Common at its Core: HIV-Related Stigma Across Contexts. Washington, DC, International Centre for Research on Women.

Ozouni, C. & Nakakis, K. (2012). HIV/AIDS Knowledge, Attitudes and Behaviors of Student Nurses. Health Science Journal, 6(1), 129–150.

Pascoe, E. A. & Smart Richman, L. (2009). Perceived Discrimination and Health: A Meta-Analytic Review. Psychological Bulletin, 135, 531–554.

Peters, L., den Boer, D. J., Kok, G. & Schaalma, H. P. (1994). Public Reactions Towards People with AIDS: An Attributional Analysis. Patient Education and Counseling, 24, 323–335.

Pickles, D., King, L. & Belan, J. (2009). Attitudes of Nursing Students Towards Caring for People with HIV/AIDS: Thematic Literature Review. Journal of Advanced Nursing, 65(11), 2262–2273.

Rad, M., Hashemi, P. M. & Alizadeh, R. (2009). Knowledge and Attitudes of a Group of Patients with AIDS. Journal of Shiraz University, 2, 144–151.

Reilly, B., HIVest, Z. G. & Mesure, J. (2004). Acceptability and Utilisation of Services for Voluntary Counselling [Corrected] and Testing and Sexually Transmitted Infections in Kasese Aboha Hospital, Humera, Tigray, Ethiopia. Ethiopian Medical Journal, 42, 173–177.

Richmond, J. A., Dunning, T. L. & Desmond, P. V. (2007). Health Professionals’ Attitudes Toward Caring for People with Hepatitis C. Journal of Viral Hepatitis, 14(9), 624–632.

Saeed Moghaddam, E., Khosravi, S., Abir, A., Marashi, N., Nahr Karim, M. & Sarhadi, I. (2011). Knowledge, Attitude and Practice Toward HIV/AIDS Among Students of Zahedan Islamic Azad University. Scientific Journal of Iran Blood Transfusion Organization, 7(4), 206–213. [Persian]

Sassani, L., Naj, A., Abedi, H. A. & Taheri, K. (2013). The Experience of Social Stigma in AIDS Patients: A Phenomenological Study. Quarterly Journal of Sabzevar University of Medical Sciences, 20(4), 487–495. [Persian]

Sayles, J. N., Hays, R. D., Sarkisian, C. A., Mahajan, A. P., Spritzer, K. L. & Cunnighmeh, W. E. (2008). Development and Psychometric Assessment of Multidimensional Measure of Internalized HIV Stigma in a Sample of HIV-Positive Adults. AIDS and Behavior, 12, 748–758.

Tavoosi, A., Zaferani, A., Enzeviea, A., Tujak, P. & Ahmadinezhad, Z. (2004). Knowledge and Attitude Towards HIV/AIDS Among Iranian Students. BMC Public Health, 4(17), 1–6.

Thanavanh, R., Rashid, H. O., Kasuya, H. & Sakamoto, J. (2013). Knowledge, Attitudes and Practices Regarding HIV/AIDS Among Male High School Students in Lao People’s Democratic Republic. Journal of the International AIDS Society, 16, 17387. doi:10.1186/1742-6405-16-17387

Tofighi Niaki, M., Zafari, M., Agha Mohammadi, A. & Kialashki, A. (2012). The Knowledge of Students of Islamic Azad University, Mazandaran Among AIDS and Appropriate Strategies. Journal of Health Breeze, 1(1), 13–17.

UNAIDS. (2014). AIDS Epidemiological Updates. Retrieved from http://www.unaids.org/sites/default/files/en/media/unaids/contentassets/documents/fact_sheet_20140716_FactSheet_en.pdf

UNDP. (2009). Vulnerability Assessment of People Living with HIV (PLHIV) in Lithuania. Vilnius, September.

UNFPA. (2004). Women and HIV/AIDS: Confronting the Crisis, New York, UNFPA.

Vanable, P. A., Carey, M. P., Blair, D. C. & Littlewood, R. A. (2006). Impact of Internalized HIV Stigma on Health Behaviors and Psychological Adjustment Among HIV-Positive Men and Women. AIDS and Behavior, 10, 473–482.

World Health Organization. (2014). WHO Eastern Mediterranean Region: Iran (Islamic Republic of) Studies Summary (2002 - present). Available at: http://apps.who.int/iris/pubst/data/node/country-country-IRN

Wright, K., Naar-King, S., Lam, P., Templin, T. & Frey, M. (2007). Stigma Scale Revised: Reliability and Validity of a Brief Measure of Stigma for HIV-Plus Youth. Journal of Adolescent Health, 40(1), 96–98.

Young, M., Stuber, J., Ahern, J. & Galea, S. (2005). Interpersonal Discrimination and the Health of Illicit Drug Users. The American Journal of Drug and Alcohol Abuse, 31, 371–391.

Zareban, I., Heidarnia, A. R., Rakhshani, F., Jabari, H. & Abdollahi, M. (2006). Prejudice and AIDS: The Views and Experiences of People with HIV Infection. AIDS Care, 17, 137–143.

Zeighami Mohammadi, S. H., Zeinali, E., Esmaily, H. & Nikkhah Nashrabad, A. R. (2011). Nurse’s Perspective About Discrimination in Nursing Care of Patients with AIDS. Iran Journal of Nursing (IJN), 24(71), 28–41. [Persian]