The Effect of Stress Management Training on Stigma and Social Phobia in HIV-positive women

CURRENT STATUS: UNDER REVIEW

Farshid shamsaei
Hamadan University of Medical Sciences School of Nursing and Midwifery

Neda Tahour New
Hamadan University of Medical Sciences School of Nursing and Midwifery

Efat Sadeghian 📧 sadeghianefat@gmail.com
Hamadan University of Medical Sciences School of Nursing and Midwifery
Corresponding Author
ORCID: 0000-0001-6075-3811

DOI:
10.21203/rs.2.10270/v1

SUBJECT AREAS
Preventive Medicine

KEYWORDS
Stress management, Stigma, Social phobia, Women, HIV
Abstract

Objectives: This study was to investigate the effect of stress management training on the stigma and social phobia of HIV-positive women. Methods: This semi-experimental was conducted on 55 HIV-positive using census sampling. The participants referred to Shohada Comprehensive Health Center in Hamadan, west of Iran, in 2017. Stress management training was conducted in 5 sessions for a group of 8-10 participants. The data collection tools were Berger HIV Stigma and Connor Social Phobia Scale. The questionnaires were filled before and 2 weeks after the intervention. Results: The mean age of participants was 38.5 and the duration of HIV infection was 6.5 years. 55% of patients were married and 80% were infected by sexual intercourse. The findings showed that there was a significant difference between the mean scores of stigma and social phobia before and after the intervention (P<0.05). Conclusions: Stress management training has been effective in the decrease of stigma and social phobia among HIV positive women.

Background

Acquired immune deficiency syndrome (AIDS) is a global health crisis, which is caused by the human immunodeficiency virus (HIV). At present, there are 36.9 million people with HIV/AIDS (PLWHA) in the world, 1.8 million of whom were infected with HIV in 2017. The 75% of AIDS patients in the world are aware of their illness and 21,700,000 of people are on the antiretroviral therapy [1, 2].

According to the national reports of Iran, 60,000 PLWHA people of all age groups in Iran suffered from this disease until 2017. Half of this population has been detected out of whom 15,000 were women over 15 years of age [3].
Today, the spread of HIV and AIDS is an important health issue that has become a complex social and economic crisis [3].

The PLWHA people are prone to multiple problems, such as stigma, discrimination, lack of access to services, and lack of legal rights [4].

Stigma is experienced by both men and women; however, women are more susceptible to stigma [5].

Stigma is severely agonizing and changes an ordinary person with this specification to an unimportant person with low self-esteem, lack of efficacy, and impose of the community. On the other hand, it has a negative effect on the control of the disease outbreak[6].

Gilbert et al. (2010) mentioned that stigma mainly occurs among patients’ who experience less attention from researchers and the health team. Accordingly, stigma affects the treatment process and the general health of patients [7].

Psychological and emotional reactions are another problem caused by the HIV virus, which can be observed in the various forms of psychiatric disorders [8].

Cognitive neurological disorders, depression, anxiety disorders, such as social phobia, post-traumatic stress disorder, psychotic disorders, manic disorders, and personality disorders were reported in such patients in different ways [9].

Mental disorders can have a negative effect on the acceptance of treatment, development of high-risk behavior, and quality of life of these people [8].

In a study conducted by Cook et al (2018) study, the rate of anxiety disorders in positive HIV women in the United States was 61.6% [9].

Control and management of social phobia and exposure to stigma can have an important role in the treatment and care interventions of HIV positive patients. In this
Nwobi et al. (2018) showed that stress management training has significantly reduced the symptoms of depression, anxiety, and perceived stress. It can also improve the social life satisfaction of PLWHA people [12].

Regarding HIV infection among women, stigma and social phobia induced by cultural and social variables in Iran is a major health challenge that requires appropriate and effective interventions. Therefore, the aim of this study was to determine the effect of stress management training on stigma and social phobia among HIV-positive women. In addition, the study moved further to suggest health care measures based on the obtained results.

Methods

Design and Participants

This semi-experimental study was conducted on 55 HIV-positive women referring to Shohada Comprehensive Health Center in Hamadan city in Iran, from May to September 2017. The population composed of 60 positive HIV women, 5 of whom were excluded from the sample since they did not have the willingness to participate in the study. The obtained results of the study before and after the intervention were compared. The study inclusion criteria were residency of Hamadan province, history of 6 months of HIV infection, definitive diagnosis of the disease (based on Rapid Test, Enzyme-Linked Immunosorbent Assay (ELISA), Western Blot, polymerase chain reaction (PCR) Diagnostic Tests), no psychiatry disease, absence of physical and mental disabilities, lack of a stressful experience in the last month, minimum level of reading and writing literacy. People who were absent for more than two sessions were excluded from the study.

Data collection tools
Data collection tools include:

A) Demographic information questionnaire, which includes variables, such as age, marital status, type of infection, duration of infection, history of HIV in the family and relatives, and current occupation.

B) Berger HIV Stigma Scale: This scale was first designed at the Nursing Faculty, Illinois University in Chicago, USA, during 2001 to evaluate stigma in positive HIV patients. This scale consists of 40 items, that is rated based on a four-point scale ranging from strongly agree (score 4) to strongly disagree (score 1) [13]. This scale has 4 components, including personalized stigma (16 items), disclosure concerns (9 items), negative self-image (8 items) and public attitudes (7 items) [14].

The total stigma score of this scale ranges 40-160. Therefore, the higher score reveals the higher level of stigma [15].

Toth et al. examined the reliability of stigma scale by test-retest correlation and its reliability was confirmed at 0.92 (15). In the current study, the Persian translated version of Berger HIV Stigma Scale was used, which has been previously used in numerous studies in Iran [16].

C) Connor Social Phobia Scale: This scale is a standard self-measurement scale consisting of 17 items, originally prepared by Connor et al. The questionnaire entails three sub-scales of fear (6 questions), avoidance (7 questions), and physiological discomfort (4 questions). This questionnaire is rated on a five-point Likert ranging from very high (score 5) to very low (score 0). Therefore, the total score of an individual can be within the range
Scores of normal people are less than 20, and people with very severe social phobia gain a score of more than 51. Scores above 20 represent high social phobia and scores lower than 20 represent low social phobia.

Campbell-Sills et al. confirmed the reliability of Connor’s social phobia scale using test-retest method ($\alpha = 0.94$).

In the current study, the Persian translated version of the Connor Social Phobia Scale was used, which has been previously used in numerous studies in Iran.

In current study, the reliability of the questionnaire was confirmed with Cronbach’s alpha coefficient ($\alpha = 0.93$).

Intervention

Stress Management Training Program

Stress management training interventions were conducted in 5 sessions in groups of 8-10 people. There were weekly training sessions, lasting 45–60 min each. Interventions were carried out by a master of science in psychiatry nursing and a psychologist at Shohada Comprehensive Health Center in Hamadan, west of Iran. Stress management training program was designed and developed based on resources and texts.

The summary of educational interventions is presented in the section below.

Content of the intervention sessions

Session 1: The first session included the introduction of the psychiatrist nurse and participants to one another, introduction of the course plan, explanation of the purposes of the curriculum, introduction to the disease (including HIV virus infection, its transmission, the signs and symbols of the disease), clarification of the difference
between HIV and AIDS, elucidation of HIV diagnosis, and elaboration on the consequences of the HIV virus infection.

Session 2: The purposes of the second session was to present an introduction about the definition of stress, address individuals’ differences regarding stress, highlight the importance of stress management training, introduce the common effects of stress on humans, review the impacts of stress (from physical, psychological, and behavioral aspects). Moreover, the session dealt with the real life experience of stress, its effects, and the probable solutions, which could be applied in such situations. Furthermore, relaxation training and diaphragmatic breathing have been explained briefly.

Session 3: The session began by a review of the tasks related to the previous session. It moved further to teach stress management skills, emotional self-awareness, proper anger expression styles, anger management skills, self-expression, and time management. During this session, the participants employed relaxation and diaphragmatic breathing techniques.

Session 4: The session began by a review of the tasks related to the previous session. The session continued to practice relaxation and diaphragmatic breathing, examine the exist barriers for doing tasks, study the reinforcement methods related to self-confidence, teach social skills, and practice the seven basic steps to learn these skills, such as active listening, frankness and honesty, self-knowledge, and awareness raising.

Session 5: The session began by a review of the tasks related to the previous session. In the next step, the instructors introduced the relaxation method as a therapeutic method, taught contraction method and the muscle relaxation, practiced the methods and resolved all ambiguous aspects regarding the application of the skills, planned for practicing household resignation.

Data collection method: The questionnaires were completed by the participants on the
first and the last sessions. This means that the participants filled out the questionnaires before and after the intervention.

Statistical analysis

The SPSS software (version 25) was employed for data analysis using descriptive (mean and standard deviation) and inferential statistics (paired t-test and Pearson Correlation). The Kolmogorov-Smirnov test was used to verify the normal distribution of data.

Results

The findings showed that the mean age of the participants was 38.5±8.6 years. The mean duration of HIV infection was 6.5±3.8 years. Regarding the marital status of the subjects, 55% of them were married. In addition, 80% of the cases were infected to HIV through sexual intercourse (Table 1).

According to Table 2, the mean and standard deviation of the stigma before the intervention (119.98 ± 21.15) indicated intense stigma among the investigated subjects. However, the designed intervention could reduce the mean and standard deviation of the stigma after the intervention (94.78 ± 16.34). The paired t-test indicated a significant difference between stigma means in HIV-positive women before and after the intervention (P<0.05). In other words, stress management training interventions reduced stigma among HIV-positive women.

Furthermore, the findings showed that the mean and standard deviation of social phobia before the intervention was 24±17.4, which decreased after the intervention to 11.2±9.68. In other words, educational interventions enhanced the management skills of social phobia among HIV-positive women. As can be seen in Table 3, the paired t-test indicated a significant difference between the mean scores of social phobia in HIV-positive women before and after the intervention (P<0.05).

The results also revealed a significant positive correlation between stigma and social
phobia (r=0.528, P<0.01) (Table 4). In other words, there was a direct two-way relationship between these two variables, meaning that stigma affects social phobia directly and social phobia affects stigma directly.

Discussion

The aim of this study was to determine the effect of stress management training sessions on the stigma and social phobia of HIV-positive women. The participants in this study were 55 HIV-positive women referring to the Shohada Comprehensive Health Center in Hamadan. The high mean of the stigma (119.98) before the intervention indicates that stigma is one of the most important health problems in HIV-positive women. Our findings are consistent with previous studies [15, 26, 27]. Amin et al. (2015) asserted that stigma, discrimination, poor social support, violence, and mental health problems (e.g., depression and neurological disorders) are big challenges for people with HIV, especially for women [28]. Baugher et al. (2017) reported that nearly 8 out of every 10 people with HIV experienced stigma. In the mentioned study, the older women had more stigma than the older men [29]. Stigma reduces the chances of life and disrupts the realization of human rights [30]. A deeper realization of stigma, mental health, and accessibility of health care systems for HIV-infected women facilitates the implementation of stigma interventions [31]. In most societies, attention has been paid to the issue of stigma, and it seems that stigma is a common phenomenon regardless of socio-cultural differences and ethnicities [32].
The obtained results of the current study revealed that stress management skills can effectively decrease stigma in HIV-positive women. Tsai et al. (2017), used a livelihood intervention to reduce the stigma induced by. The findings suggested that the intervention was effectiveness in the decrease of stigma level.

Regardless of the variety of educational methods, the results showed that educational interventions are suitable methods for dealing with stigma among HIV patients. The results of this study also indicated that social phobia was moderately high among women with HIV that was reported as one of the HIV-positive cases in other studies.

Glémaud et al. (2014) reported 42.7% and 1.2% of HIV positive women in the United States suffered from anxiety and social phobia, respectively in the study.

Social phobia, by limiting social interactions, has a negative impact on treatment and care. Furthermore, people with social phobia had a strong fear of being judged by others and they were embarrassed about their actions.

Similar to previous studies.

The obtained results of the current study showed that stress management training sessions could reduce the mean scores of social phobia among HIV-positive women.

The findings of the current study also revealed that there was a relationship between stigma and social phobia. In other words, it can be said that stigma and social phobia are two phenomena that are influenced by social and cultural factors, which are considered in
many studies as the challenges for patients with HIV [26, 31]. Although this study provided insightful findings, it suffered from some limitations. Firstly, there was no control group in the study due to the limitation of the research community. The secondly, training sessions were implemented for a short period of time because of the personal and family problems of some patients.

Implication
The results of this study can be used in the clinics for care and treatment programs. Moreover, to provide counseling services, the health care team can use counseling services combined with therapeutic drug interventions to maintain and improve the mental health of these patients.

Conclusion
The obtained results of the current study revealed that stigma and social phobia are big challenges for HIV-positive women since these people are always judged by others and are subjected to labeling and rejection. These problems originate from the negative beliefs about the nature of HIV/AIDS among ordinary people in the community. These problems can also have a negative impact on the treatment and care process. Therefore, the investigation and identification of these problems, which are often influenced by cultural and social variables, play an important role in controlling the disease. Therapeutic and care interventions, such as stress management training sessions, are one of the effective methods for dealing with stigma and social phobia. These considerations can improve mental health and enhance their quality of life from various aspects.

Abbreviations
AIDS: acquired immune deficiency syndrome
ELISA: Enzyme-Linked Immunosorbent Assay
HIV: Human Immunodeficiency Viruses
PLWHA: people living with HIV/AIDS
PCR: polymerase chain reaction
P: P value
r: Pearson Correlation
USA: United States American
α: Cronbach’s alpha

Declarations

Acknowledgments

The authors would like to thank all staff of Shohada Comprehensive Health Center in Hamadan and patients who participated in the study.

Funding

This work was supported by Hamadan University of Medical sciences grant number [9610266796]. The design of the study and collection, analysis, and interpretation of data funded.

Availability of data and materials

The data set is available from the corresponding author who is also the Principal Investigator of the study.

Authors’ contributions

F. SH and N.T conceived the study, prepared the protocol and developed the training programs. E. S and N. T developed the analysis plan and performed the statistical analyses. F. SH and E.S were major contributors in writing the manuscript. All authors read and approved the final manuscript
Ethics approval and consent to participate

This study was registered at the Iranian Registry of Clinical Trials with the code of IRCT20171206037775N1. The study was approved by the Ethics Committee of Hamadan University of Medical sciences (IR.UMSHA.REC.1396.568). All the participants received information about the aims of the study and written informed consent was obtained from all participants. It was made clear to them that their participation was voluntary and that all data would remain confidential.

Consent for publication

Not applicable.

Competing interests

All authors declare that they have no conflict of interest.

References

1. Liu H, Zhao M, Ren J, Qi X, Sun H, Qu L, et al. Identifying factors associated with depression among men living with HIV/AIDS and undergoing antiretroviral therapy: a cross-sectional study in Heilongjiang, China. Health and Quality of Life Outcomes. 2018;16(1):190.

2. UNAIDS data 2018. 2018:Available at: http://www.unaids.org/en/resources/documents/2018/unaids-data-

3. Nyamathi AM, Ekstrand M, Yadav K, Ramakrishna P, Heylen E, Carpenter C, et al. Quality of Life Among Women Living With HIV in Rural India. Journal of the Association of Nurses in AIDS Care. 2017;28(4):575-86.

4. Mawar N, Sahay S, Pandit A, Mahajan U. The third phase of HIV pandemic: social consequences of HIV/AIDS stigma & discrimination & future needs. Indian Journal of Medical Research. 2005;122(6):471.

5. Darlington CK, Hutson SP. Understanding HIV-Related Stigma Among Women in the
Southern United States: A Literature Review. AIDS and Behavior. 2017;21(1):12-26.

6. Goffman E. Stigma: Notes on the management of spoiled identity: Simon and Schuster; 2009.

7. Gilbert L, Walker L. ‘My biggest fear was that people would reject me once they knew my status...’: stigma as experienced by patients in an HIV/AIDS clinic in Johannesburg, South Africa. Health & social care in the community. 2010;18(2):139-46.

8. Ursoiu F, Moleriu L, Lungeanu D, Puschiță M. The association between hiv clinical disease severity and psychiatric disorders as seen in western romania. AIDS care. 2018;30(11):1368-71.

9. Joska JA, Stein DJ, Grant I. HIV and Psychiatry: John Wiley & Sons; 2014.

10. Cook JA, Burke-Miller JK, Steigman PJ, Schwartz RM, Hessol NA, Milam J, et al. Prevalence, comorbidity, and correlates of psychiatric and substance use disorders and associations with HIV risk behaviors in a multisite cohort of women living with HIV. AIDS and Behavior. 2018:1-14.

11. Chang EM, Hancock KM, Johnson A, Daly J, Jackson D. Role stress in nurses: review of related factors and strategies for moving forward. Nursing & health sciences. 2005;7(1):57-65.

12. Nwobi UA, Eseadi C, Emeka O, Ekwealor N, Ogbonnaya KA, Oboegbulem AI, et al. A stress management intervention for adults living with HIV in Nigerian community settings: An effects study. Medicine. 2018;97(44):e12801-e.

13. Berger BE, Ferrans CE, Lashley FR. Measuring stigma in people with HIV: Psychometric assessment of the HIV stigma scale¶. Research in nursing & health. 2001;24(6):518-29.

14. Cuca YP, Asher A, Okonsky J, Kaihura A, Dawson-Rose C, Webel A. HIV Stigma and Social Capital in Women Living With HIV. Journal of the Association of Nurses in AIDS Care. 2017;28(1):45-54.
15. Toth S, York JA, DePinto N. HIV stigma: perceptions from HIV-positive and HIV-negative patients in a community dental clinic. Journal of dental research, dental clinics, dental prospects. 2016;10(4):263.

16. Masoudnia E, Chenaninasab H. Impact of Perceived Social Stigma on Self-esteem in Patients with Acquired Immunodeficiency Syndrome. Journal of Holistic Nursing And Midwifery. 2016;26(4):80-9.

17. Noorbala AA, Mohraz M, Moradmand B. Effect of Mental Health, Coping Mechanisms and Stigma on Risky Behaviors in HIV Positive Patients in Iran-a Cross-Sectional Study. Razi Journal of Medical Sciences. 2017;24(159):83-93.

18. Connor KM, Davidson JR, Churchill LE, Sherwood A, Weisler RH, Foa E. Psychometric properties of the Social Phobia Inventory (SPIN): New self-rating scale. The British Journal of Psychiatry. 2000;176(4):379-86.

19. Campbell-Sills L, Espejo E, Ayers CR, Roy-Byrne P, Stein MB. Latent dimensions of social anxiety disorder: A re-evaluation of the Social Phobia Inventory (SPIN). Journal of Anxiety Disorders. 2015;36:84-91.

20. Soleymani N, Ekhtiyari A, Habibi M, Monajemi M. Efficacy of Emotion Regulation Skills and Meta-cognitive Beliefs in Reducing Social Phobia among Students-A Casual-Comparative Study. International Journal of Psychological and Brain Sciences. 2017;2(1):10-7.

21. Amouzadeh MH. Evaluation of validity and reliability of social phobia inventory among students in Payame Noor University of Lorestan. Journal of Fasa University of Medical Sciences. 2017;7(2):181-9.

22. McCain NL, Zeller JM, Cella DF, Urbanski PA, Novak RM. The influence of stress management training in HIV disease. Nursing Research. 1996;45(4):246-53.

23. Romas JA, Sharma M. Practical stress management: A comprehensive workbook:
24. Antoni MH. Stress management and psychoneuroimmunology in HIV infection. CNS spectrums. 2003;8(1):40-51.

25. Rahimi AR, Ahamadpanah M, Shamsaei F, Cheraghi F, Sadeghi Bahmani D, Holsboer Trachsler E, et al. Effect of adjuvant sleep hygiene psychoeducation and lorazepam on depression and sleep quality in patients with major depressive disorders: results from a randomized three-arm intervention. Neuropsychiatr Dis Treat. 2016;12:1507-15.

26. Rueda S, Mitra S, Chen S, Gogolishvili D, Globerman J, Chambers L, et al. Examining the associations between HIV-related stigma and health outcomes in people living with HIV/AIDS: a series of meta-analyses. BMJ open. 2016;6(7):e011453.27. Onyebuchi-Iwudibia O, Brown A. HIV and depression in Eastern Nigeria: The role of HIV-related stigma. AIDS care. 2014;26(5):653-7.

28. Amin A. Addressing gender inequalities to improve the sexual and reproductive health and wellbeing of women living with HIV. Journal of the International AIDS Society. 2015;18(Suppl 5):20302.

29. Baugher AR, Beer L, Fagan JL, Mattson CL, Freedman M, Skarbinski J, et al. Prevalence of internalized HIV-related stigma among HIV-infected adults in care, United States, 2011-2013. AIDS and Behavior. 2017;21(9):2600-8.

30. Peters RM, Van Brakel WH, Lusli M, Damayanti R, Bunders JF. Cultural validation of a new instrument to measure leprosy-related stigma: the SARI Stigma Scale. Leprosy review. 2017;88(1):23-43.

31. Logie C, James L, Tharao W, Loutfy M. Associations between HIV-related stigma, racial discrimination, gender discrimination, and depression among HIV-positive African, Caribbean, and Black women in Ontario, Canada. AIDS patient care and STDs. 2013;27(2):114-22.
32. Brown JL, Vanable PA, Carey MP, Elin L. Computerized stress management training for HIV+ women: a pilot intervention study. AIDS care. 2011;23(12):1525-32.

33. Tsai AC, Hatcher AM, Bukusi EA, Weke E, Hufstedler LL, Dworkin SL, et al. A livelihood intervention to reduce the stigma of HIV in rural Kenya: longitudinal qualitative study. AIDS and Behavior. 2017;21(1):248-60.

34. Magidson JF, Skeer MR, Mayer KH, Safren SA. Prevalence of psychiatric and substance abuse symptomatology among HIV-infected gay and bisexual men in HIV primary care. Psychosomatics. 2015;56(5):470-8.

35. Glémaud M, Illa L, Echenique M, Bustamente-Avellaneda V, Gazabon S, Villar-Loubet O, et al. Abuse and mental health concerns among HIV-infected Haitian women living in the United States. Journal of the Association of Nurses in AIDS Care. 2014;25(1):S62-S9.

36. Kupper N, Denollet J. Social anxiety in the general population: introducing abbreviated versions of SIAS and SPS. Journal of affective disorders. 2012;136(1-2):90-8.

37. Spies G, Asmal L, Seedat S. Cognitive-behavioural interventions for mood and anxiety disorders in HIV: a systematic review. Journal of affective disorders. 2013;150(2):171-80.

38. Sabet AH, Khalatbari J, Ghorbani MA, Haghighi M, Ahmadpanah M. Group training of stress management vs. group cognitive-behavioral therapy in reducing depression, anxiety and perceived stress among HIV-positive men. Iranian journal of psychiatry and behavioral sciences. 2013;7(1):4.

Tables

Table 1 Demographic Characteristics
| Variable               | N  | %   |
|------------------------|----|-----|
| **Age**                |    |     |
| < 20                   | 3  | 5.4 |
| 20 - 30                | 25 | 45.4|
| 30 - 40                | 20 | 36.3|
| > 50                   | 2  | 3.64|
| **Marital status**     |    |     |
| Single                 | 9  | 16.3|
| Married                | 30 | 54.5|
| Divorced               | 13 | 23.6|
| Widowed                |    |     |
| **Education Level**    |    |     |
| Primery                | 25 | 45.45|
| Secondary              | 23 | 41.8|
| High                   | 7  | 12.7|
| **Employment status**  |    |     |
| Employed               | 24 | 43.6|
| Unemployed             | 5  | 9   |
| Housework              | 26 | 47.2|
| **Illness duration (year)** | |       |
| < 1                    | 1  | 1.8 |
| 1 - 5                  | 14 | 25.5|
| 5 - 10                 | 34 | 61.8|
| 10 - 15                | 3  | 5.5 |
| > 15                   | 3  | 5.5 |
| **Route of transmission** | |       |
| Blood and blood products | 4  | 7.2 |
| Needle-infected blood  | 44 | 7.2 |
| Homo/bisexual          | 3  | 80  |
| Mother to infant       | 3  | 5.4 |

Due to technical limitations, Table(s) 2-4 are only available as a download in the supplemental files section.

**Supplementary Files**

This is a list of supplementary files associated with the primary manuscript. Click to download.

Tables 2-4.pdf