

# Research Paper: Characteristics of an Online HIV Education Program for Iranian Female Methadone Patients: The First Study



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## ABSTRACT

**Objectives:** Female methadone patients need specific education on HIV. However, few studies have been conducted on the essential characteristics of designing an online HIV education program for this population. Therefore, the current qualitative study aimed at addressing this research gap.

**Methods:** Semi-structured interviews were conducted with 34 female patients and 19 methadone treatment providers in 11 methadone treatment centres in Tehran, Mashhad and Sari, Iran. Both focus group discussions and individual interviews were conducted and a narrative analysis approach was implemented. The NVivo 9 software was used for data analysis.

**Results:** The qualitative analyses of the data revealed three major themes and six minor themes as follows: a. information for focused action (knowing the epidemic response) using the effective visual presentation and audio presentation; b. interventions for impact evaluation (covering the needed services) by short-term documentary movies and animations; and c. program delivery for understanding (covering the population in need of services) using problem-solving and taking quizzes.

**Discussion:** Audio and visual components, as well as the role of documentary movies and animations, should be considered in HIV education. The active role of women in learning using problem-solving and taking quizzes was highlighted. The findings of this study can be used in designing women-specific HIV education programs in Iran. Randomized controlled trials are suggested to evaluate the effectiveness of such programs.

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## Highlights

- Some characteristics should be implemented in designing the first online HIV education program for Iranian female methadone patients.
- Information for focused action (awareness about the epidemic and response) using the effective visual and audio presentation are needed for the program.
- Effective interventions for impact evaluation (covering the needed services) using short-term documentary movies and animations are needed for the program.
- The program delivery for understanding (covering the population needed services) by problem-solving and taking quiz is needed for the program.

## Plain Language Summary

The research reported the characteristics of an online HIV education program for Iranian female methadone patients. The results indicated that awareness about the HIV epidemic and response using effective visual and audio presentation; covering needed HIV services by short-term documentary movies and animations and covering the population who need services by problem-solving and taking quiz are the most important characteristics that should be considered in designing the first online HIV educational program for Iranian women.

### 1. Introduction

The Human Immunodeficiency Virus (HIV) infection is a health problem among women in methadone treatment centers in Iran [1-3]. Although Iranian women accounts for approximately 10% of methadone patients in drug treatment centers, there are few HIV education programs for this population [4, 5]. This issue is accompanied with psychostimulant use, poor motivation to change, social dysfunction, and impaired mental health [1, 2]. A study on 138 female methadone patients in Kermanshah indicated a prevalence of 18.8% for HIV infection. Overall, 2.1% of the women were infected with HIV and hepatitis B virus. The most frequently reported routes of HIV transmission included drug injection and high-risk sexual behaviors. However, there was no well-organized HIV education in the centers [1]. Another study was conducted on 1327 methadone patients in seven drug treatment centers in Shiraz. The study indicated that 20.5% of the sample included women and overall, 20.2% of the patients were infected with HIV. Lifetime imprisonment and illicit drug use in methadone treatment centers were significantly associated with the prevalence of HIV infection among women [2].

Women in Iran have reported insufficient HIV education [3]. A nationwide survey on 42630 women aged 15-49 years indicated that 79% of the sample had heard

about HIV, but only 19.1% reported sufficient knowledge regarding HIV. Being married, older ages, and higher education and socioeconomic status were significantly associated with reporting sufficient knowledge about HIV [4]. An insufficient level of knowledge about HIV can be associated with high-risk behaviors, such as having unprotected sex, sharing contaminated needles, substance use disorders, receiving an unsafe injection, and psychiatric disorders [5].

In recent years, several behavioral and psychological interventions have been introduced to treat illicit drug use in Iranian female methadone patients [6-10]. However, no specific HIV education program has been designed for this vulnerable population in methadone treatment centers. The current study was part of a research, which explored the specific HIV educational needs of Iranian female methadone patients. The findings indicated that participants needed information about women-specific HIV pathophysiology and progression, as well as the modes of HIV transmission and prevention.

Participants also needed information about the physical management of HIV, such as self-care and reproductive health. Other HIV educational needs included perceived psychosocial needs, like reducing stigma and access to healthcare centers [11]. However, the study reported the educational content, whereas it has not emphasized on the characteristics of designing an online HIV education

program for women [11]. Therefore, the present study aimed at addressing this gap in the literature.

## 2. Methods

### Study design

This qualitative study was conducted based on narrative analysis in the studied centers from June 5 to July 28, 2018.

### Participants

The managers of the study centers were asked to help the research staff by inviting the women to participate in the study and made women informed about the research objectives. Then, the subjects were referred to a psychologist for screening and assessment of the inclusion criteria. Inclusion criteria included the age of at least 18 years, female gender, and being in a methadone treatment center for at least one month. Women were excluded if they reported severe drug-related withdrawal or intoxication symptoms, which were likely to interrupt the interview procedures. Purposive sampling was applied leading to selecting participants with definite characteristics and providing an adequate level of information about the research objectives [12]. Overall, 34 women and 19 methadone treatment providers were interviewed.

### Study centers

The study centers included 11 methadone treatment clinics and drop-in centers in the cities of Tehran, Mashhad, and Sari, Iran. To date, the study centers were among the largest methadone treatment centers in the three cities. The managers of the centers were needed to agree with conducting the study procedures.

### Data collection

An interview guide was piloted to use in the study and facilitate its procedure. The questions used in the guide were related to the HIV educational needs among women. Overall, 34 women who met the inclusion criteria were individually interviewed and each interview lasted between 45 and 60 min on average. In-depth and semi-structured interviews were implemented to explore the participants' experiences and perceptions. They were encouraged to talk about issues related to the study by asking open-ended questions.

The aim of in-depth interviews was to explore the self-perceived characteristics which were necessary for designing an HIV education program for women.

Audio-recording was also implemented for individual interviews. No interview was repeated and interviewing was continued until no new findings were recorded in the last five interviews leading to data saturation. There were 19 male and female methadone treatment providers in focus group discussions, including 11 psychologists, four medical practitioners, two registered nurses, one psychiatrist, and one social worker. The methadone treatment providers worked at methadone and HIV treatment centres. Each focus group discussion constituted semi-structured talks with 4-6 clinicians.

Four focus group discussions were held facilitated by three moderators. First, they commenced the focus groups by asking broad questions and then, they had an emphasis on the focal questions. Encouragement and interaction were implemented among the participants. Focus group discussions were used to explore views on issues related to the characteristics, which are necessary to design the program for women in methadone treatment centres. Each focus group discussion lasted 45 min and was audio-recorded. Field notes were implemented during the interviews and focus group discussions. Transcripts were returned to the participants for further comments.

### Research group

One psychologist and four psychiatrists and general practitioners conducted the study. The research team had at least five years of practical experience in methadone clinics and drop-in centers dealing with HIV-infected patients.

### Qualitative data analysis

The NVivo 9 software was used to analyze qualitative data. Data analysis was conducted in three steps: 1) developing and applying the codes for organizing the raw data, interconnecting and linking the categories of the codes and formulating the narratives through connecting the categories; 2) Identifying themes, patterns, and relationships for finding the word and phrase repetitions, primary and secondary data comparisons, searching for missing information and metaphors and analogues; and 3) Summarizing the data. At this stage, research findings were linked to the research objective. Participants were then asked to provide feedback comments on the study findings that also confirmed the accuracy of data analysis.

### 3. Results

#### Baseline characteristics

The median age of women was 37 years with the age range of 21-56 years. The duration of drug dependence was almost 11 years (range: 2-30 years). The average length of being in methadone treatment was two years and two months. Some participants reported lifetime drug injection (n=4) and were infected with HIV (n=3). Subjects had 3-16 years of education. Most participants reported an elementary education. A considerable number of participants were unemployed (n=17) and homemaker (n=14), respectively, whereas few participants (n=3) were employed. Most women (n=24) were living in rented places, whereas some participants reported homelessness (n=5) at the time of interviewing. Overall, four participants reported living in their own houses or in their parents' houses.

#### Main research findings

The narrative data analysis revealed three major and six minor themes. Table 1 indicates the themes and sub-themes elicited from data analysis. Each minor theme represents the specific necessary aspects. Some noteworthy quotations from the transcripts were reported to highlight major and minor themes within findings. Information for focused action (awareness about the epidemic and response)

The first major theme was related to developing basic knowledge about HIV and teaching women about the necessary epidemic and response. Further analysis indicated two minor themes, including visual and audio presentation. Each visual or audio presentation represents specific aspects essential for women to learn about HIV. The women and methadone treatment providers discussed the need for the program and to be informed about the women-specific HIV pathophysiology and progression via implementing adequate visual and/or audio presentation. Women and methadone treatment providers frequently reported that soft music, colorful scenes, real and attractive photos, pictures with bright colors, diagrams and figures are needed to be gradually added to the program for developing the basic knowledge about HIV and long-term learning in the women's minds. A doctor with at least five years of experience said:

"Every section of the program should be accompanied with soft music and colourful pictures. Otherwise, HIV education will be boring and women will forget the content of the program fast..."

#### A 40-year-old woman being in methadone treatment for two years said

"It is essential to have a specific focus on female genital area and infections. Diagrams and figures should be used to demonstrate how HIV works in that area..."

#### Interventions for impact evaluation (covering the range of services needed)

The general consensus was to produce short-term documentary movies and animations about the HIV pathophysiology and progression, how to prevent HIV infection, and how to follow personal hygiene to control the disease and include them in the program to enhance women's long-term learning. Such movies and animations also needed to have a specific focus on how HIV infection emerges, how it continues and how it becomes a health problem for a woman. Further data analysis indicated that as a part of the program, women needed to know about the modes of transmission of HIV in the movies and how a range of services need to implement effective treatment responses. Both women and methadone treatment providers explained that this knowledge would not only help female methadone patients to protect their families but can prevent the transmission of HIV among them.

#### A woman who was in methadone treatment for at least three years said

"...Make 15-20 minute colourful cartoon animations. A drug-dependent woman should speak about the problem, i.e., HIV, during cartoon or animations. Such an animation should show how HIV virus progresses and acts in the body of a woman and becomes a health problem..." A female clinical psychologist who had six years of experience in methadone treatment services stated:

"...As part of the program, show 20-minute documentary movies; ask HIV-infected women to tell how they had been infected. The same woman should teach condom education and using sterile needles and syringes to other women. Women should be trained in safe sex education and personal hygiene by showing documentary movies..." A 33-year-old woman receiving methadone treatment for three years said:

"...Make short documentary movies including group education with participation of drug-dependent women who are infected with HIV; women should tell their stories of HIV. They should talk about the negative health and social impacts of using contaminated razors and

**Table 1.** Themes and sub-themes of the study

Themes	
Major theme 1: Information for focused action (awareness about the epidemic and response)	Visual presentation Audio presentation
Major theme 2: Intervention for impact evaluation (covering the needed services)	Minor themes Documentary movies animation
Major theme 3: Delivery for understanding (covering the population who need services)	Problem-solving Taking quiz

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syringes, blood contact, tattooing, sex work and unprotected sex with multiple partners. Such a program should be free of charge..."

#### **Delivering for understanding (covering the population needed services)**

A major theme was related to this issue indicating that the HIV education program should not only be provided and women need to be involved in their learning process by problem-solving and passing short quizzes. Women and methadone treatment providers explained that the delivery of an online HIV education program should address mutual understanding. If women are covered by the program as the population needed HIV services, they should specifically understand this issue like students. Two minor themes emerged from the qualitative analysis indicating that program designers should encourage problem-solving among women by designing simple puzzles to be completed by them. Designing short-term quizzes (generally 5-10 questions) was also important because they were effective for continued assessment. A female psychologist who had five years of experience in methadone treatment services said:

"...Simple puzzles are important as part of the design of the program. We can ask women to solve them after each section of the program. For example, the program shows them about how the HIV virus starts working in a woman's body. Then an online colourful puzzle should show an incomplete picture about this issue and ask women to complete...". A female nurse with four years of experience in receiving methadone treatment services said:

"...Make a general knowledge quiz after each section of the program to assess changes in their amount of learning... Women should understand the relationship between HIV, sex work and drug dependence. A voice should be included to help reading each question of the quiz..."

## **4. Discussion**

Illicit drug use is a health concern among Iranian female methadone patients [13, 14]. This issue is associated with a considerable prevalence rate of HIV and inadequate knowledge regarding HIV infection management [13, 14]. Technology-based interventions, such as online HIV education programs are cost-effective for methadone treatment systems and can be easily implemented in the centres, whereas in-person programs are longer and intensive [14, 15]. Designing an online HIV education program is essential for Iranian women in methadone treatment; however, the characteristics of such a program should be first investigated in the Iranian context. This issue necessitates sufficient knowledge about the characteristics, which can make designing the program attractive for female methadone patients [14]. To date, this is the first study investigating the characteristics of an online HIV education program for female methadone patients in Iran.

Our findings indicated that women needed focused information on the HIV epidemic and responses by implementing a well-organized audio and visual presentation. These characteristics are important because they are very likely to maintain long-term HIV learning among women. The finding of this study indicated an important characteristic, which can facilitate learning and prevent HIV risk behaviors. A study evaluated the efficacy of a 45-minute online sexual health program for adolescents. The program was developed with adequate visual and audio presentations and was evaluated on 226 girls.

The study findings indicated that the proposed program was feasibly conducted and was effective for their sexual health [16]. Further studies are still needed to investigate how effective visual and audio presentations of HIV education programs can lead to avoid high-risk behaviors in this population in the community.

Our findings indicated that interventions for impact evaluation with an emphasis on covering the range of needed services were important. The general consensus was to produce short-term documentary movies and animations to increase the quality of HIV learning among women. Producing and showing online documentary movies and animations are likely to be associated with social learning theory, which highlights the role of observing others in learning. Such programs are very likely to be more effective for women than in-person HIV education programs. A study compared in-person and online training in an education program for HIV. In a three-month study, 250 participants completed four training courses conducted in online and in-person formats. The obtained results indicated that the course was organized, easy to understand, and encouraged changes. Online training was found to be a better format by participants in comparison with in-person training [17].

Delivering for understanding with an emphasis on covering the population needed services was another finding of this study. This refers to the issue that women need to be actively involved in their learning process by problem-solving and passing quizzes. This finding is important because highlights the active role of learners in the learning process and encourages active learning. Active learning is very likely to increase the speed of understanding and may contribute to long-term positive effects. A study was conducted to understand participants' views about an educational program. A total of 48 HIV specialists in the intervention group completed a survey and 30 cases participated in the focus group discussion. The study indicated that most participants benefited from the daily quizzes, reporting them as appropriate strategies to convey information in a relevant way. Forty-three out of 48 participants reported that the daily quizzes led to motivation for constant education. Furthermore, 83% of the participants reported that they were better prepared to care for patients with HIV in their communities [18].

The current study had several limitations. It was conducted only on women. Therefore, the findings may not be generalizable to men. It was also limited to methadone treatment. Therefore, the findings may not be generalizable to other drug users in the community and out-of-treatment individuals. Further studies are suggested. Studies have shown that people use illicit drugs in methadone treatment, especially methamphetamine, which can lead to HIV risk behaviors [19, 20]. The efficacy of online HIV programs needs to be further investigated on both reduced HIV risk behaviors and poly-drug use while receiving methadone treatment.

## 5. Conclusion

To date, few online HIV education programs have been designed for women in Iran. However, such programs can be widely used and effective in preventing the outbreak of HIV infection in society. Our findings revealed several characteristics, which can be used in designing the first online HIV education program for women in methadone treatment centers in Iran. This issue needs to be specifically considered by program designers, health policy-makers and clinicians as an effective harm reduction approach. Furthermore, such program has important implications for service providers due to its influential role in promoting methadone treatment outcomes in Iran. However, before the wide implementation of the program, large-scale randomized controlled trials should be conducted to investigate its long-term effectiveness.

## Ethical Considerations

### Compliance with ethical guidelines

Participation was confidential and anonymous. There were no established relationships between the research team and the interviewees before the study. Participants signed the consent forms prior to the study. The study was approved by the Ethics Committee of Mazandaran University of Medical Sciences (Code: 2856).

### Funding

All ethical principles were considered in this article.

### Authors' contributions

Conceptualization: Mehran Zarghami and Afsaneh Moradi; Methodology and data analysis: Afsaneh Moradi; Investigation, writing the original draft, supervision, and project administration: Omid Massah and Alireza Mahjoub; Writing a review and editing the manuscript: Alireza Mahjoub and Mehran Zarghami.

### Conflict of interest

The authors declared no conflicts of interests.

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