The Effectiveness of the Harm Reduction Group Therapy Based on Bandura's Self-Efficacy Theory on Risky Behaviors of Drug-Dependent Sex Worker Women

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Abstract

Background: The aim of this study was to investigate the effectiveness of the harm reduction group therapy based on Bandura's self-efficacy theory on risky behaviors of sex workers in Kerman, Iran.

Methods: A quasi-experimental two-group design (a random selection with pre-test and post-test) was used. A risky behaviors questionnaire was used to collect. The sample was selected among sex workers referring to drop-in centers in Kerman. Subjects were allocated to two groups and were randomly classified into two experimental and control groups. The sample group consisted of 56 subjects. The experimental design was carried out during 12 sessions, and the post-test was performed one month and two weeks after the completion of the sessions. The results were analyzed statistically.

Findings: By reducing harm based on Bandura's self-efficacy theory, the risky behaviors of the experimental group, including injection behavior, sexual behavior, violence, and damage to the skin, were significantly reduced in the pre-test compared to the post-test (P < 0.010).

Conclusion: The harm reduction group therapy based on Bandura's self-efficacy theory can reduce the risky behaviors of sex workers.

Keywords: Harm reduction; Risky behaviors; Self-efficacy


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Introduction

Drug abuse and its unpleasant consequences are one of the most important problems related to the general health of societies which has attracted the attention of mental health professionals. Not only does it affect people's health, but it also has some influences on the health of the society.1-3

The lifestyle of this group of people makes them behave in a way that they would be at higher risks of certain viral infections such as human immunodeficiency virus (HIV), hepatitis C virus (HCV), and hepatitis B virus (HBV) caused by substance injections and insecure and unprotected sexual relationships with different people. Moreover, the incidence of impulsivity along with alcohol and drug abuse in this group increased the risk of crises such as suicide and domestic violence like spouse abuse and child abuse.4-7

Some studies have shown that the prevalence of high-risk sexual behaviors in injecting drug users and their sexual partners have created a serious condition for the spread of acquired immunodeficiency syndrome (AIDS) and hepatitis. 75% of drug users are sexually active, among which, about two-thirds have never used condoms.5,7-10

According to the statistics collected from the World Health Organization (WHO),11,12 34 million people worldwide have been infected with HIV and AIDS, 4 million cases in South and South East Asia, and 830 thousand cases in East Asia. In Iran, a total of 18320 people were diagnosed with HIV/AIDS by the year 2008. Of them, 93.9% were men and 6.3% were women. Moreover, about 80.0% of the AIDS infections had been transmitted through sexual relationships, 12.0% through injecting drugs, and the use of infected and shared syringes and 4.0% through the transfer of blood products. The risk of HIV is not limited only to the drug users; it also affects their sexual partners, their children, and other social groups.7

One of the most common theories used in behavior change is the self-efficacy personality construct in Bandura's social cognition theory.13 This theory focuses on the role of self-confidence in performing desirable behaviors and considers self-efficacy a prerequisite for changing the behavior. People with low self-efficacy are less likely to try to change the behaviors they are accustomed to.13-15

Perceived self-efficacy is related to the individuals' beliefs in their abilities to have more control over their motives, behaviors, and most importantly, over their social environment. Therefore, people's beliefs in their abilities affect what they select or do and determine their effort, perseverance and endurance against problems.16

Based on the findings of the study, the role of self-efficacy has been confirmed as an important component in reducing risky behaviors. In other words, someone who has low self-efficacy is more likely to be involved in high-risk behaviors compared to a person with higher self-efficacy. In fact, people with lower self-efficacy have less control over their lives and are more likely to be subjected to high-risk behaviors.13,14,17-19

People with low self-efficacy feel helpless and think that they are unable to control their life events. They believe that every effort they make is futile. When dealing with obstacles, if their initial efforts to cope with the problems are unproductive, they give up immediately. Such people do not even try to overcome the problems because they have been convinced that anything they do is pointless and does not change the situation. Low self-efficacy can destroy motivation, interfere with cognitive abilities, have undesirable effects on the physical health and increase the possibility of high-risk behaviors as a vulnerability factor.13,19,21

In contrast, people with high self-efficacy have more confidence in their abilities and little doubt about themselves. They consider the problems a challenge not a threat and actively search for new situations. High self-efficacy reduces fear of failure, increases the level of motivation, and improves problem-solving and analytical thinking abilities.15,19,23 Findings from various studies have revealed that self-efficacy is a pivotal variable which affects safe and low-risk sexual behaviors, the use of condoms and safe injections.15,21,22

Regarding the high prevalence of high-risk behaviors among drug users and their potential risk for all people of a society and concerning the relationship between low self-efficacy and risky behaviors such as insecure sexual behaviors, alcohol drinking and aggression, it is necessary to take some measures to influence the level of self-efficacy, and thus to reduce high-risk behaviors. In this regard, the present study aimed

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to answer the question if harm reduction group therapy based on Bandura’s self-efficacy theory affect the high-risk behaviors of sex workers in Kerman, Iran.

**Methods**

A quasi-experimental design with pre-test and post-test was used in the present research. The statistical population consisted of all sex workers with drug abuse and dependence along with high-risk sexual behaviors who had been referred to drop-in centers affiliated to Kerman Health Center for the first time in 2012-013. Kerman is the center of the largest province of Iran with a population of over 800000. Using the convenience sampling method, the sample group was selected from the statistical population who agreed to participate in the workshop. Then, based on the pre-test scores, they were randomly assigned to two experimental (n = 28) and control groups (n = 28). This design was composed of two groups of subjects who were tested twice (high-risk behaviors questionnaire). The first time was before the training sessions. After that, only the experimental group was subjected to an independent variable which was harm reduction training based on Bandura’s self-efficacy theory. The subjects participated in twelve 35-minute sessions held twice a week (one month and two weeks). It should be noted that 2 subjects from the experimental group and 1 from the control group dropped out. After completing the group training sessions, both groups (experimental and control) were tested by the post-test questionnaire. To evaluate the differences between the control and experimental groups in the post-test and pre-test scores, the multivariate analysis of covariance (MANCOVA) was used.

The contents and objectives of the harm reduction training workshop were based on Bandura’s theory (1999). The workshop was run by one of the researchers. Contents of training sessions were prepared and designed focusing on the sociological viewpoint of Bandura’s social recognition about self-efficacy. The objective of this workshop was to present a pattern to reduce the high-risk behaviors along with different topics developed in the following areas.

To achieve this stage, the following points were considered: increasing and improving the level of knowledge of subjects and presenting information needed for proper use of injections and safe sexual behaviors. Moreover, the new behavior exercise in difficult and high-risk situations was used to familiarize subjects with successful experiences. In order to make the lessons easier and better to understand and memorize, educational contents were divided into smaller components and various educational methods were used including group discussion, brainstorming and counseling and situation-based role play. In addition, simple and understandable brochures without specialized terminology were given to the subjects in order to study at home. It should be noted that no difficult assignments were designed in the initial stages of education because it was very important that subjects experience some levels of success.

In this section, the reinforcement method and the creation of self-efficacy beliefs were achieved due to the success experience obtained by appropriate patterns. The subjects had the opportunities to talk about their experiences (reviewing the previous successful performance by the group) with each other and were encouraged to solve their problems by observing the other subjects’ experiences. In this regard, role plays and brainstorming methods which could help create appropriate modeling and understanding of the behavior were used to increase self-efficacy.

Verbal encouragement makes people believe that they are capable of successful performance. Therefore, continued verbal encouragement was used as a reward in all cases, whether participating in discussions or highlighting important experiences and points. Moreover, during the sessions, the subjects were asked to act based on health advice so as to reduce and eliminate the side effects as a reward and positive experience.

Individuals rely on their physiological feedbacks to judge their capabilities. Therefore, in plain language, all possible complications of drug abuse and insecure sexual relationships and the ways how to control these complications were explained to the subjects. Moreover, subjects were allowed to talk about their symptoms and reflect their thoughts and feelings. In addition, subjects’ successful experiences in controlling the complications and symptoms were discussed. In order to reduce stress, the relaxation technique was used.

The measuring tool used in this research was a
researcher-made questionnaire (addicts’ high-risk behaviors) taken from the blood-borne virus transmission risk assessment questionnaire (BBV-TRAQ). It should be noted that the questionnaire had good validity.24,25 Moreover, the Cronbach's alpha coefficient was 0.74 for all scores of the questionnaire, and its subscales were between 0.60 and 0.81, which showed that this questionnaire had good reliability.24,25 This questionnaire was based on Manuel's command and software provided by the WHO which belongs to the National Center for Addiction Studies. This questionnaire was made by the researchers after conducting preliminary studies (reviewing relevant literature and consulting with qualified people) and after making necessary changes in accordance with the psychometric principles. It consisted of 33 questions and was scored based on the Likert scale. It included 4 factors including injection behavior, sexual behavior, damage to the skin and violence. Subjects were asked to specify their responses between five scales of always, often, sometimes, rarely and never (1 to 5). The scores varied from 33 to 165; the higher scores in this questionnaire indicated higher rates of high-risk behaviors. In this study, a test-retest was used to examine the reliability of the questionnaire. The questionnaire was administered to addicts (n = 70) 2 times in a 10-day interval. The intraclass correlation coefficient (ICC) was 0.86.

In this study, the retest method was employed to examine the reliability of the questionnaire, for which the questionnaire was administered to a group of drug users (n = 70) two times with a 10-day interval and the reliability coefficient was equal to 86%. In the experimental stage, Cronbach's alpha for the sample of 70 participants was 0.92. Cronbach's alpha coefficient of the questionnaire for 362 participants with 33 items for total score was 0.72, for the injection behavior subscale with 15 items was 0.95, for the sexual behavior with 5 items was 0.72, for act of skin-damaging subscale with 5 items was 0.73, for the aggressive behavior subscale with 8 items was 0.77. Thus, there is sufficient certainty about the reliability and validity of the questionnaire. Also, reliability of the questionnaire with applying Cronbach's alpha coefficient for 47 participants with 33 items for total score was 0.91, for the injection behavior subscale with 15 items was 0.83, for the sexual behavior with 5 items was 0.81, for act of skin-damaging subscale with 5 items was 0.81, for the aggressive behavior subscale with 8 items was 0.88.

**Results**

Concerning descriptive findings, results indicated that the mean age ± standard deviation (SD) of the subjects was 34 ± 6.0 in the experimental group and 35 ± 7.0 in the control group. Both groups were almost the same in behaviors. It showed significant changes in post-test scores of high-risk behaviors compared to the control group. In addition, the coefficient F calculated in the overall score and in each of the factors related to the addicts’ high-risk behaviors was significant (P < 0.010). In other words, the difference between the pre-test and post-test scores was significant in both groups and the mean score of the experimental group was higher than that of the control group. Therefore, harm reduction group therapy based on Bandura's self-efficacy theory affected high-risk behaviors of sex workers (P < 0.010). In terms of age, the variance analysis test revealed no significant difference between both groups (P = 0.505). Of 53 subjects, 22.64% injected the drug and 77.35% smoked drug. Moreover, 92.45% of the subjects were sex workers.

The mean ± SD of the experimental group in all four factors (injection behavior, sexual behavior, damage to the skin, violence, and the total score of addicts’ high-risk are shown in table 1.

**Discussion**

In summary, the aim of this study was to investigate the effectiveness of the harm reduction group therapy based on Bandura's self-efficacy theory on risky behaviors of sex workers in Kerman. Results of the covariance analysis showed that there was a significant difference between the mean post-test scores in both groups (P < 0.010). Concerning the overall score and scores of the high-risk behaviors in the post-test, results of table 1 showed that the mean scores of the experimental group were lower than those of the control group who were at the waiting list and who had received nothing but just a brochure and damage reduction devices. Therefore, harm reduction group therapy based on Bandura's self-efficacy theory was effective in reducing the risky behaviors of sex workers.
The findings of the present study were in line with the results of other studies conducted in the same area, showing the effectiveness of education and consultation in reducing risky behaviors.\cite{26-30}

According to Bandura, self-efficacy is an important prerequisite for changing the behavior. Self-efficacy is the assurance that the person feels in doing something special. This concept affects the level of people’s effort and performance. In the process of behavior change, improving self-efficacy is of great importance. Repeating the performance, simplifying and dividing the work into small steps can make the person self-sufficient in each step of the work and can ultimately lead to self-efficacy.

People with low self-efficacy feel helpless and unable to control the events of their lives. They believe every effort they make is futile. When dealing with obstacles, if their initial efforts to cope with the problems are unproductive, they give up immediately. Such people do not even try to overcome the problems because they have been convinced that anything they do is pointless and does not change the situation. Low self-efficacy can destroy motivation, interfere with cognitive abilities, have undesirable effects on the physical health and increase the possibility of high-risk behaviors as a vulnerability factor.\cite{13,19,21} In contrast, people with high self-efficacy believe they can effectively deal with events and conditions they encounter. Since they expect success in coping with problems, they endure the tasks and often act at a high level. Such people have more confidence in their abilities and little doubt about themselves. They consider the problems a challenge not a threat and actively search for new situations. High self-efficacy reduces the fear of failure, increases the level of motivation, and improves problem-solving and analytical thinking abilities.

Regarding the contents of the training sessions designed and prepared based on the psychological viewpoint of Bandura’s social recognition about self-efficacy and considering four sources of self-efficacy enhancement, this study aimed to provide a pattern to reduce risky behaviors with different issues. These issues were considered in the training sessions to get experience and to increase, and improve the level of subjects’ knowledge. To this end, the training needed for correct injections and safe sexual behavior was presented to allow the subjects to behave effectively and appropriately. It could enhance their understanding of their abilities. Moreover, the subjects had the opportunities to face successful experience through designing achievable goals which increased the success of performance and through practicing new behaviors in difficult and high-risk situations. In this exercise, making use of upgraded and practiced adaptive strategies in encountering the problematic and risky situations made subjects ready to enter such situations which improved successful performance. Therefore, they experienced the feeling of dominance while doing new adaptive behaviors.

Success experience which was a method of reinforcing and creating self-efficacy beliefs was used in this study. In fact, meeting similar people who had experienced success in difficult or high-risk situations encouraged other people in the group and created necessary abilities to dominate

### Table 1. The mean, standard deviation (SD) and the result of the significance level of covariance of scores of high-risk behaviors and their dimensions in the control and experimental groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Stage</th>
<th>Experimental (mean ± SD)</th>
<th>Control (mean ± SD)</th>
<th>P*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection behavior</td>
<td>Pre-test</td>
<td>17.81 ± 9.01</td>
<td>22.11 ± 8.51</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>12.27 ± 7.89</td>
<td>18.19 ± 9.08</td>
<td></td>
</tr>
<tr>
<td>Sexual behavior</td>
<td>Pre-test</td>
<td>28.15 ± 2.92</td>
<td>27.89 ± 3.03</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>21.77 ± 2.89</td>
<td>24.00 ± 3.25</td>
<td></td>
</tr>
<tr>
<td>Damage to skin</td>
<td>Pre-test</td>
<td>20.42 ± 3.07</td>
<td>19.85 ± 2.98</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>13.81 ± 3.16</td>
<td>15.74 ± 3.28</td>
<td></td>
</tr>
<tr>
<td>Violence</td>
<td>Pre-test</td>
<td>25.81 ± 7.31</td>
<td>25.63 ± 7.43</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>19.27 ± 6.63</td>
<td>21.87 ± 7.13</td>
<td></td>
</tr>
<tr>
<td>Addicts’ high-risk behaviors (total score)</td>
<td>Pre-test</td>
<td>89.69 ± 16.88</td>
<td>94.52 ± 12.90</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>67.12 ± 12.89</td>
<td>79.70 ± 12.78</td>
<td></td>
</tr>
</tbody>
</table>

SD: Standard deviation; *: Multivariate analysis of covariance (MANCOVA) test
the barriers. In addition, verbal encouragement and persuasion made people believe that they had the ability to succeed. People who were orally encouraged endured more in difficult situations. Therefore, when subjects practiced and were encouraged, they were more likely to do their best and to increase their self-efficacy.

The next issue was related to physiological and emotional states in judging abilities. The positive mood improves self-efficacy, while the negative mood decreases it. It should be noted that reducing the stress and incorrect interpretation of physical states have some effects in changing and correcting self-efficacy beliefs. People rely on their physiological feedback to judge their capabilities. Awareness of signs and symptoms helps understand the situation much better and reduce anxiety and tension in difficult situations, and thus improve self-efficacy and facilitate performance.

It should be noted that, as shown in table 1, the mean score of the control group in the overall score and every score of high-risk behaviors was lower in the post-test compared to the pre-test. What is clear is that in addition to providing informative educational programs and consultation, the reduction centers presented other services such as the provision of syringes, needles and sterile injecting tools, distribution of disinfectants, encouraging the use of condoms, distribution of free condoms and distribution of educational materials such as brochures which were part of the harm reduction program. It could be attributed to the reduction of risky behaviors of sex workers in the control group. Various studies have shown that harm reduction programs have a positive impact on reducing risk behaviors and reducing the spread of HIV and other infections such as hepatitis and help addicts become part of a natural and productive community.

**Conclusion**

Regarding the prevalence of high risk behaviors among vulnerable groups, especially women which affect not only their own health but also the overall health of the community, and considering the findings of this study reflecting the effectiveness of the harm reduction group therapy based on Bandura's self-efficacy theory on risky behaviors, some educational interventions are suggested as part of preventive programs aiming to reduce the risky behaviors among addicts in all centers and institutions which deal with this group of people.

**Conflict of Interests**

The Authors have no conflict of interest.

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**References**


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چکیده
مقدمه: هدف از انجام پژوهش حاضر، بررسی اثرات تخییض درمان گروهی کاهش آسیب بر پایه نظریه خودکارامدی Bandura بر رفتارهای پرخطر زنان مطرح گردید.

روش‌ها: در این مطالعه از طرح آزمایشی استفاده گردید که شامل طرح دو گروهی - انتساب تصادفی با پیش آزمون و پس آزمون بود. جهت جمع‌آوری داده‌ها از پرسشنامه تبادل انرژی استفاده شد. افرادی از زنان مطرح گردیدند که در پیش آزمون مورد انتخاب قرار گرفتند. گروه آزمایشی از طریق آزمون انتخاب نموده شدند. نتایج مطالعه به طور معنی‌داری در افراد تخریب‌زا فرق نشان داد.

یافته‌ها: با آموزش کاهش آسیب بر پایه نظریه خودکارامدی Bandura، گروه آزمون تفاوت معنی‌داری را در رفتار پرخطر در پس آزمون نسبت به پیش آزمون نشان داد.

نتیجه‌گیری: بر اساس نتایج مطالعه حاضر، با کمک گروه درمانی کاهش آسیب بر پایه نظریه خودکارامدی Bandura، رفتارهای پرخطر در زنان اکثر بدردشد.

واژگان کلیدی: کاهش آسیب، رفتارهای پرخطر، خودکارامدی Bandura

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