The Effectiveness of Cognitive-Behavioral Training on General Health and Reducing Aggression in Women with Premenstrual Syndrome

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Abstract
This research has been accomplished with the purpose of studying the effectiveness of cognitive-behavioral training on general health and reducing aggression in women with premenstrual syndrome. The research method was experimental performing pretest-posttest on case and control groups. The statistical population of research were 260 female students with premenstrual syndrome of Ghadir Langroud nonprofit university in 2011-2012 academic year. So, 260 women with premenstrual syndrome were assessed based on secondary screening by aggression and general health; and then 30 women having more scores on aggression questionnaires and less scores on general health questionnaire were selected and placed in two 15-person case and control groups by random sampling method. The case group got the cognitive-behavioral training and at the end, both groups were re-assessed by the same questionnaires. The data was analyzed by multivariate covariance and showed meaningful difference in general health and aggression between two groups. The research results shows the effectiveness of cognitive-behavioral training on general health and reducing aggression in women with premenstrual syndrome.

Keywords: cognitive-behavioral training, general health, reducing aggression, premenstrual syndrome.

Introduction
Premenstrual syndrome (PMS) refers to a collection of somatic, psychological, emotional and behavioral signs and symptoms that cyclically show up during the lateral phase of menstrual cycle and fade away profoundly in the rest of the cycle. The signs and symptoms of PMS are various and till now, about 200 of them have been recognized. PMS is recognizable only by meticulous recording the signs and symptoms during the menstrual cycle. According the American Psychiatric Association criteria, PMS is recognized only when the problems are related with menstrual cycle starting in the last week of the cycle and disappearing at the beginning the bleeding (Bakhshaee, 2011).

Nowadays, the research about premenstrual syndrome (PMS) is so extensive and it is one of the important research subjects. PMS is a serious condition, but there is little discussion about it and most women and their families must face the somatic and psychological signs which make irregularities of the PMS. In 1964 and 1977, Dalton reasoned that PMS is responsible of increased crimination, detension, alcoholism, mal behavior in school, dissatisfaction in industrial centers, hospitalizations due to casualties, general hospital admissions, increased suicide attempts, psychiatric admissions, inability to do jobs and homework, seeking medical care because of somatic symptoms and also social isolation. Also, this syndrome increases work absence (91%), and decreases job efficacy in employees (17%). Women play a key role in the family, so this syndrome can affect their function greatly. These effects include conflict with spouse and misconduct with children.

Over 80% of women experience one of the signs of this syndrome. 5-8% of women suffer severe PMS and occupy the criteria of premenstrual dysphonic disorder (PMDD). About 150 signs are assumed for this syndrome and the statistics are different in various ethnic groups. In Iran, Tamjidi (1995) and Karimi Chatroudi (2003) announced the prevalence of PMS in the 15-45 year old women as 62% and Noorjaah (2008) announced it as 98.2%.

All over the world, about 40% of women in fertile age are affected somehow by this syndrome, but the prevalence of the severe form is about 8% PMS signs appear in teenage and youth ages and increase gradually as the individual ages. If the importance of PMS is ignored in the teenage period, there are awful effects on health and quality of life and in the long term pave the way for deviations in self mental image, decreasing self-confidence and then some disorders in interpersonal relationships. So, efforts to decrease somatic and psychological complications using different methods is necessary. Research show that one of the treatment methods of this disorder is cognitive-behavioral treatment.
Cognitive-behavioral therapy consists of two effective behavioral methods of psychotherapy, which are cognitive therapy and behavioral therapy. Behavioral therapy helps weaken the relationship between the problems and reactions such as fear, depression or anger and diminishes self-defeating and self-mutilating behaviors. This approach teaches us how to relax our body to feel better, think freely and decide better. Cognitive theories assume that the way people interpreted their experiences, affects greatly their emotions, actions and their global psychological function (Sadock & Sadock, 2005). Cognitive approach emphasizes the important role of thought on etiology and durability of clinical problems. Cognitive-behavioral treatment tries to amend or change thought patterns that are important in the clients’ problems (Jeri Fires, 2002) and is among the most effective psychological interventions.

In general, in cognitive model, the emotions and behaviors are affected by the individual’s conception of the events. Objects or events don’t upset the individual, but his conception and interpretations of the events is important. So Beck (1994) has emphasized the importance of conceptions and personal comments in the interpretations of the events.

Researchers believe that if the correct educational, therapeutic and preventive measures about PMS are done, we have healthy and effective community and permanent relationships which has too much positive effects afterwards. So, the purpose of this study is assessment of the effectiveness of cognitive-behavioral treatment on general health and reducing the aggression of women with PMS.

Anger is followed by irrational beliefs about others (Ellis, 2005). Gandid et al, quoting from Ghorbani (2003) describe anger as an emotion which begins as an energy from the lower belly and moves to upper belly, shoulders and arms. Anger is rooted from neurotransmitters malfunctions. Different interpersonal, social and tendency to aggression and some somatic or medical diseases emanate from this emotion (Nevako, 1986, quoting from Band & drayden, 2002). Reducing anger leads to somatic and mental health and personal growth.

The conceptions of anger, bad-temperedness and aggression are used instead of one another and it’s still hard to provide a clear definition of each conception and show their difference. But we can define anger as an emotional state or inside feelings rooted from a physiologic and cognitive arousal and the implacability thoughts (Onil, 2006).

Anger is a satisfying and also devastating emotion, activates our inside structure and prepares us to face the potential environmental dangers (Tylor & Novaker, 2005).

Aggression as a psychological disorder is one of the great problems of today world. Reports say that 25% of American people experience some of the types of this psychological problem during lifetime (health association, 2001). Most of the time, this disorder diminishes the personal and social compatibility of the individual and jeopardizes safety and mental health of family and other social groups. Sometimes, the problem is severe enough that legally annoys and threatens other members of the community and as a result, the patient is involved to the law and criminal administrations. In other words, the patient is under prosecution because of psychic problem and its aftermath which is crime commitment. Different research show that about 10-15% of prisoners suffer psychological disorders (Lamp & Winburger, 1998). The prevalence of these disorders in the samples of criminals and prisoners is much higher than the general population (Bickel & Campbell, 2006).

Anger and aggression are among the signs of PMS, so it’s necessary to do some interventions for treatment. Among the usual psychological treatments, in this study we use cognitive-behavioral treatment in order to reduce aggression and increasing general health of the women with PMS.

As the PMS goes along with aggression, tension, anxiety and irritability and these problems have negative effects on psychological, affective and somatic dimensions and jeopardize health, so, according to these negative effects, the first step is prevention and promotion of body and mind health in these patients. One of these interventions is cognitive-behavioral training which helps the patient recognize her distorted thinking patterns and incompetent behavior. In order to change these distorted thinking patterns and incompetent behaviors, regular discussions and fairly organized behavioral assignments are used. In many researches similar to this study, cognitive-behavioral training was effective as a therapeutic method in restriction of PMS signs. Kathleen (2009) and Hunter et al (2002), quoting from Davoudvandi (2011) show that the cognitive-behavioral training is effective in reducing the negative signs of PMS including anxiety, depression and aggression.

Also, group counseling affects the general severity of PMS, somatic complaints, anxiety, sensitivity in interpersonal relationships and aggression, all related to PMS. (Taghizadeh et al, 2009). Mirza et al, 2012, have confirmed the effectiveness of cognitive-behavioral training on reducing anxiety and somatic complaints in women with PMS. Gorenstein et al (2007) believe the effectiveness of cognitive-behavioral training as a therapeutic modality on reducing anger and aggression. Behavin Patel, (2011) quoting from Braving (2011) announce that cognitive-behavioral training and informational attention treatment are effective in reducing the negative and somatic signs of the syndrome. Cognitive-behavioral training is effective on anger management and increases self-respect and fairly treats depression (Bradbury and Clark, 2009). Amiri Farahani (2011) quoting from Lustyk et al (2009) believe that cognitive-behavioral training is effective in treating affective and somatic disorders. This study examines the effectiveness of cognitive-behavioral training on general health and reducing aggression and tries to prove the following hypothesis:

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The major hypothesis:
Cognitive-behavioral training is effective on general health and reducing aggression in women with PMS.

The minor hypotheses:
- Cognitive-behavioral training is effective on general health in women with PMS.
- Cognitive-behavioral training is effective on reducing aggression in women with PMS.

The Research Method

The research method is experimental performing pretest-posttest on case and control groups. The statistical population of research are 260 female students with premenstrual syndrome of Ghadir Langroud nonprofit university in 2011-2012 academic year. Three questionnaires each studying premenstrual syndrome, general health and aggression are used for data collection. So, 260 women with premenstrual syndrome were assessed based on secondary screening by aggression and general health questionnaires; and then 30 women having more scores on aggression questionnaires and less scores on general health questionnaire were selected and placed in two 15-person case and control groups by random sampling method. In this research, the following questionnaires are used:

1. Premenstrual syndrome questionnaire: This tool is researcher-made which in the first part, assesses syndrome and its severity according to the complaints in the past three months. This part is drawn out of Abraham Taylor symptom logy questionnaire (1990) and includes 17 signs, 11 behavioral and 6 somatic. The severity of each sign has a likert scale (0 to 4) with 0 to 3 scores. The second part includes 8 questions about the study sample selection criteria like the age, the length of menstrual bleeding, the inter menstrual duration, any co morbidity...

The reliability and validity of this questionnaire have been determined by Babayanzaad Ahari in 1999. Using the second testing, the questions coefficient of correlation in two phases was r=99%.

2. General Health questionnaire (GHQ-28): This questionnaire has been designed by Goldberg and Hilber in 1979. Factor analysis of this questionnaire shows 4 subscales each containing 7 questions. These subscales are somatic complaints, anxiety, social dysfunction and depression. This test assesses pathologic signs and different states of health in the month before performing test and has been designed based on 4-ranked likert scale.

3. Aggression questionnaire (AG): It’s one of the most successful tools of measuring aggression, made by Boss and Perry in 1992. It has 29 questions and assesses four factors of verbal aggression (5 questions), somatic aggression (9 questions), anger (7 questions) and hostility (8 questions). Mohammadi (2006) also has announced that the validity coefficient of this questionnaire by re-testing is 78.0 for the questionnaire as a whole and is 61.0 to 74.0 for the subscales.

Method of Execution

After referring to nonprofit Ghadir Langroud university and having permission of the educational department of this university, 800 PMS questionnaires were distributed among all female students of the university; and after investigating, 260 women were selected by PMS, and then GHQ-28 and AG questionnaires were assessed among the won with PMS and then 30 of them having more scores in AG and less scores in GHQ-28 were selected and took place randomly in two 15-person case and control groups. The case group took the cognitive-behavioral training and at the end, both groups were re-assessed by the same questionnaires.

Execution Method of Cognitive-Behavioral Training

Session 1: presenting the agenda and assigning the therapeutic goals
Session 2: acceptance
Session 3: anger and its consequences
Session 4: the techniques of abdominal breathing and muscle relaxation and monitoring the warning signs of anger
Session 5: the role of negative thoughts and anger experience in the period of PMS
Session 6: active participation
Session 7: behavioral experiments
Session 8: problem solving

Data Analyzing Method

The collected data were analyzed by multivariate covariance analysis.

Research Findings

Testing the major hypothesis: cognitive-behavioral training is effective on general health and reducing aggression in women with PMS.
TABLE 1: THE STATISTICAL CHARACTERISTICS OF DEPENDENT VARIABLE INDICATORS IN CASE AND CONTROL GROUPS

<table>
<thead>
<tr>
<th>indicators</th>
<th>case group</th>
<th>control group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean</td>
<td>standard deviation</td>
</tr>
<tr>
<td>aggression</td>
<td>136.87</td>
<td>4.72</td>
</tr>
<tr>
<td>general health</td>
<td>14.40</td>
<td>2.72</td>
</tr>
</tbody>
</table>

Comparing the figures of the above table shows the difference between the means of case and control groups in the dependent variables. These differences in the both variables is in favor of case group.

The results of multivariate covariance analysis for each variable is shown in the table 2.

TABLE 2: MULTIVARIANT COVARIANCE ANALYSIS OF F RATIO FOR THE AMOUNT OF COMPOUND VARIABLE.

<table>
<thead>
<tr>
<th>source</th>
<th>value</th>
<th>28F2</th>
<th>meaningfulness level</th>
<th>Eta</th>
</tr>
</thead>
<tbody>
<tr>
<td>compound variable of group</td>
<td>0.03</td>
<td>320.568</td>
<td>0.000</td>
<td>0.96</td>
</tr>
</tbody>
</table>

Attention: Multivariate F ratio is derived from Wilks-Lambday approximation.

In the above table, the amount of Eta for the new compound variable in the name of group is 396.0 which shows high effectiveness. Also, the results of Wilks-Lambday test is meaningful about compound variable and this meaningfulness shows the difference between the members of two groups and the means of two group is meaningful under the effect of independent variable.

The results of adjusted mean and also the results of covariance for dependent variables are shown in table 3.

TABLE 3: ADJUSTED MEAN OF STANDARD DEVIATION AND THE RESULTS OF COVARIANCE ANALYSIS FOR DEPENDENT VARIABLE INDICATORS.

<table>
<thead>
<tr>
<th>variable</th>
<th>case group</th>
<th>control group</th>
<th>Covariance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean</td>
<td>standard deviation</td>
<td>mean</td>
</tr>
<tr>
<td>aggression</td>
<td>79.20</td>
<td>20.75</td>
<td>136.533</td>
</tr>
<tr>
<td>general health</td>
<td>28.67</td>
<td>5.14</td>
<td>13.73</td>
</tr>
</tbody>
</table>

In the table 3 we can see the adjusted means of dependent variable indicators. The amount of Eta shows that approximately 95% of aggression variable variance and approximately 82% of general health variable variance are accounted for group variable.

According to the data of tables 2 and 3, these results are achieved. There is meaningful difference between case group under cognitive-behavioral training and control group under no training (Eta=0.96, p=0.000, 28F2=320.568).Regarding the adjusted means, this difference is in favor of the trained group.

The minor hypothesis:
1-Cognitive-behavioral training is effective on general health in women with PMS.

As is seen in the results of covariance in the tables 2 and 3, there is meaningful difference between adjusted means of general health in two groups.(Eta=0.822 p=0.000 and 28F1=111.106).So, there is meaningful difference between the case group (receiving cognitive-behavioral training) and control group (receiving no training).

The minor hypothesis:
2-Cognitive-behavioral training is effective on reducing aggression in women with PMS.

As is seen in the results of covariance in the tables 2 and 3, there is meaningful difference between adjusted means of aggression in two groups.(Eta=0.946 p=0.000 and 28F1=417.216). So, there is meaningful difference between the case group (receiving cognitive-behavioral training) and control group (receiving no training).

Discussion and Conclusion

Major hypothesis: the research results showed that cognitive-behavioral training is effective on general health and reducing aggression in women with PMS. The scores of general health and aggression post-tests in the two groups have meaningful difference. As a whole, the research hypothesis claiming cognitive-behavioral training effectiveness on improving general health and reducing aggression in women with PMS is confirmed. These findings are compatible with the results of the researches of Zarean (2007) quoting from Blavin (2011), Hunter(2002) quoting from Davoudvandi (2011), Kathleen(2009) and Hoffman(2007) quoting from Lustyk et al (2009), Bradbury and Clark (2009), Mirzai et al(2012), Davoudvandi et al(2011)and Taghizadeh et al(2009). According to co morbidity of somatic and psychological problems of PMS with aggression, cognitive-behavioral skills can be an educational intervention for reducing the severity of these problems. Because of the relationship of aggression with some disorders like depression, anxiety and chronic somatic disorders, it seems that reducing anxiety and some somatic complaints related to PMS in the research participants can reduce severity of aggression.
Minor hypothesis 1: regarding the meaningful difference between means in two groups, we claim with 99% of assurance that research hypothesis announcing the effectiveness of cognitive-behavioral training on improving general health is confirmed. This finding is compatible to data of Taghizadeh et al (2009), Mirzai et al (2012), Faramarzi [2011] and Katleen (2009). In explaining this finding we can say that cognitive-behavioral training regarding the necessity of insisting the manner of attitude, finding and rebuilding cognitive distortions, correct thought techniques and assessment of judgments can lower the level of anxiety and depression. Cognitive-behavioral training is one of the interventions changing the general health scores.

Minor hypothesis 2: regarding the meaningful difference between means in two groups, we claim with 99% of assurance that research hypothesis announcing the effectiveness of cognitive-behavioral training on reducing aggression in women with PMS is confirmed. This finding is compatible to data of Taghizadeh et al (2009), Zangeneh et al (2011) and Gorenstein et al (2007). In summary, according to studies insisting cognitive-behavioral approaches, learning anger management skills helps the person be aware better of her emotions and show more suitable reactions in the different situations. Knowing one’s characteristics makes insight and therefore leads to self-regulation and self-control. Actually, changing the negative schemas and cognitive reconstruction leading to decrement of anger experience, decreases anger expression by aggressive behaviors. Also, cognitive reconstruction and learning some techniques like guided imagery relaxation and voluntary cortical inhibition, helps people express their anger using adaptive behaviors.
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