THE EFFECTIVENESS OF HABIT REVERSAL TRAINING ON ANXIETY, QUALITY OF LIFE AND SYMPTOMS OF TRICHOTILLOMANIA PATIENTS

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ABSTRACT

The aim of this study was to investigate the effectiveness of Habit Reversal Training on Anxiety, Quality of life and Symptoms of Trichotillomania patients. This quasi-experimental study was examined with the pretest-posttest design. The population consisted of all female patients with Trichotillomania disorder referring to the Mashhad medical clinics. A sample of 24 persons had criteria for entering the research, were randomly selected and randomly divided into two experimental (12) and control (12) groups. The experimental group was trained in Habit Reversal for 8 one-hour sessions, while the control group did not receive such training. Data were analyzed by ANCOVA & MANCOVA test using SPSS18. The results showed that Habit Reversal Training had a positive effect on quality of life, anxiety, and Symptoms of Trichotillomania patients so that the experimental group showed less anxiety and Symptoms of Trichotillomania after the intervention and a higher quality of life. According to the results of this study, it can be concluded that Habit Reversal Training has a positive effect on anxiety, quality of life and Symptoms of Trichotillomania of patients with Trichotillomania. Therefore, Habit Reversal Training should be considered as one of the main treatments for the disorder.

Keywords: Trichotillomania, Habit Reversal Training, Anxiety, Quality of Life

INTRODUCTION

Trichotillomania (TTM) or hair pulling disorder has been classified under the group of obsessive-compulsive disorder in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (American Psychiatric Association, 2013). Trichotillomania (TTM) is a rare disorder which is characterized mainly by pulling hair in different parts of the body and chronically it is associated with negative social-psychosocial outcomes. In Trichotillomania (TTM) common pulling sites are scalp, eyebrow, and eyelash but hair removal may occur in every part of the body as well. The ranges of pulling hairs are different among patients. Hair pulling can lead to avoiding social and leisure activities and cause anxiety in intimate relationships (Tolin et al., 2008). Research indicates that most individuals affected by Trichotillomania (TTM) report feelings such as lack of physical attractiveness, depression, shame and feeling worthless (Duke et al., 2010).

In the total population, the 12-month incidence proportion of Trichotillomania (TTM) is 1% and 2% in adults and adolescences. In Trichotillomania (TTM), women are affected more than men. It is likely that such estimate suggests the real gender proportion of the disorder, although it might represent the different treatments based on gender or cultural attitudes

about appearance (for instance, accepting hairlessness norm in men). Among children with Trichotillomania (TTM), boys and girls show the same disorders (Gawlowska-Sawosz et al., 2016). Regarding being a long-term and chronical, Trichotillomania (TTM) can give rise to disorder in patient's performance and provide dangerous complications for individual's life and health if it is not treated. Due to the ambiguous nature of the symptoms, this disease often is ignored by the specialists and most patients are afraid of displaying its symptoms and seek for professional help reluctantly (Keuthen et al., 2015).

Studies indicate that in addition to the physical problems involved with the disorder, a noticeable level of anxiety, depression, and tension is reported in these patients. 22% to 66% of patients with Trichotillomania (TTM) show that they avoid engaging in common activities with other people (Moritz & Rufer, 2011). Generally, they are filled with deep shame and embarrassment about their disease and often hide their hairlessness by using wigs, wearing hat or scarf regularly; and patient's avoidance behaviors, shame, and embarrassment cause limitations and great anxiety for them (Lewin et al., 2009).

The quality of life is another important variable which seems to has a low level among patients with Trichotillomania (TTM). The quality of life is considered the most significant component of the general concept of health; as though patient's quality of life is investigated for determining health needs and improving health level of them (Coleman et al., 2006). World health organization defines "quality of life" as: "individual's evaluation and perceptions about their life condition are affected by cultural and situational value system that they living in; and indeed individual's goals, expectations, criteria's and demands in a great extent are effective on his/her physical and mental condition, the degree of autonomy, social relationships and beliefs" (Mirkhani, 2001). Therefore, according to this general definition, the quality of life has a close relationship with the physical and mental condition, personal beliefs, the degree of self-sufficiency, social relationships, and environment. Likewise, the quality of life has come to be defined as individual satisfaction about the general aspects of life such as mental, social, economic, cultural, spiritual and sexual ones (Elliott et al., 2007). Behaviors like shame and embarrassment about appearance features, absence in social milieus, avoiding social behaviors, having anxiety and a great deal of depression are important factors in hair pulling patients which result in decreasing the quality of life in them (Jimenez et al., 2015).

Regarding many difficulties that the patients have, it is required to apply different treatment methods in treating Trichotillomania (TTM). But if this disorder is not treated, it usually progresses chronically, and less than 14% of patient's experience reducing of disease symptoms without treatment. If early diagnosis is done and treatment is appropriate, about at least 50% of the patients in short-term will observe reducing of disease symptoms (Van et al., 2010). Different treatments have been detected for hair pulling disorder which in general are divided into medicinal and non-medicinal treatments. Psychologists and doctors believe that in about 72% of the cases, pharmacotherapy is an effective treatment for Trichotillomania (TTM). Medicines like fluoxetine, clomipramine, citalopram, and other serotonin reuptake inhibitors are the ones that are used for treating Trichotillomania (TTM) symptoms (Eshaghzadeh et al., 2016). However, most studies show that just 70-90% of patients receive pharmacotherapy, and by stopping the medicine after a few weeks, they will observe recurring of symptoms (Grant, J. E., & Chamberlain, 2016). Accordingly, in recent years there has been increasing interest on the role of psychological interventions in Trichotillomania (TTM) treatment. Since

cognitive factors and emotional failures contribute to Trichotillomania (TTM), psychological interventions can be effective in treating the patients being under the disorder. One of the most common psychological treatments of Trichotillomania (TTM) is Habit Reversal Training which has been the first systematic method for treating of it and other disorders such as Tic (Bloch et al, 2007). In 1973, Azrin and Nunn invented the recent method which is a combination of behavioral and cognitive skills. Consequently, a group of psychologist includes it in the category of cognitive-behavioral treatments (Morientes & Rufer, 2011).

Habit Reversal method has four fundamental components (Rahman et al., 2017). Firstly, an individual with Trichotillomania (TTM) must be aware of hair pulling situations, describe a behavior that he/she gets used to it and identify the times which this habit occurs or it is close to taking place. The second component is the training of alternative or opposing response that clients learn to use an incomplete behavioral factor for hair pulling or its antecedents. In other words, along with a habitual behavior clients learn a dissonant behavior that use it for preventing of disruptive behavior. The third component is social supporting during which an important or the closest person to client helps him/his to use responses or alternative behaviors successfully for controlling the hair pulling. As a result, in this component which is called motivational strategies therapist with individual, all the situations that the habit occurs and that how it may yield distress and embarrassment for him/his are examined (Miltenberger et al., 2001).

In addition to the previous components, some therapists suggest two more stages naming relaxation training and generalization. They believe that since tension and anxiety feeling may be the antecedents of hair pulling, in order to control and cope with them, clients should be able to overcome them by relaxation (Shareh, 2018). In the sixth stage, an individual should be prepared for different situations which might cause hair pulling. This skill is the result of imagination and role plays. Azrin, Nunn, Frantz and many other researchers proved the effect of Habit Reversal methods for treating most of the habitual disorders such as nervous habits of nail-biting (Diefenbach et al., 2000).

In general, Habit Reversal Training is one of the appropriate methods on decreasing obsession disorders like hair pulling which can be used in treating this disorder. However, in spite of many foreign types of research that have been conducted about the effect of Habit Reversal Training on hair pulling, a few of them have been set out in Iran. Likewise, because individuals with Trichotillomania (TTM) have many problems causing increased anxiety and low quality of life, it is emphasized on the considerable attention in psychological treatments such as Habit Reversal. As explained earlier, this research examines the answering of this question that whether or not Habit Reversal Training has a meaningful effect on anxiety, quality of life, and symptoms of Trichotillomania (TTM) patients?

METHOD

The present research is applied in terms of objective and quasi-experimental study with the pretest-posttest design in terms of method. The statistical population consisted of all the female patients with Trichotillomania (TTM) disorder referring to the cities of Mashhad medical clinics in 2018 that among them 24 individuals had criteria in participating the research (these criteria are 1. having Trichotillomania (TTM) according to the discussed criteria in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition and The Massachusetts

General Hospital (MGH) Hair-Pulling Scale, 2. having age range from 10 to 35 years, 3. dissing of psychotropic drugs at least two weeks before starting the treatment, and 4. The informed intention of participating in the research) were selected by Convenience sampling. These individuals were assigned randomly in two experimental (12) and control (12) groups. The experimental group participated in the intervention of Habit Reversal Training during 8 one-hour sessions, while the control group did not receive such training. Before and after the training course, all the subjects were analyzed by The Massachusetts General Hospital (MGH) Hair-Pulling Scale, Spielberger State-Trait Anxiety Inventory, World health organization Quality of life questionnaire.

In this research the following instruments were used to collect data.

1. The Massachusetts General Hospital (MGH) Hair-Pulling Scale:

This scale is a seven-item self-report instrument which scores as 5-point and the high score indicates that there is a disorder. The scale assesses urge frequency for hair pulling, the intensity of urges, urges control, hair-pulling frequency, efforts to resist against hair pulling, hair pulling control, tension and distress. The total score is ranging from 0-28 and several types of research demonstrate its acceptable reliability and validity (Diefenbach et al., 2005). This scale has been performed in Iranian clinical sample and reported 0.89 for its Cronbach's alpha (Saatchi et al., 2017).

2. Spielberger State-Trait Anxiety Inventory

The inventory has 40 items consisting of two scales named state anxiety and trait anxiety each having 20 item. In order to respond the state anxiety, subjects must select one of the points showing by (1) very low (2) low (3) high (4) very high that best express their feelings. Furthermore, in order to answer the trait anxiety scale, subjects should select one of the points like (1) almost never (2) sometimes (3) often (4) almost always. The scores of each two state-trait anxiety scales are between the range of 20 to 80. Spielberger and Gorsuch (1970) have reported 0.92 Cronbach's alpha coefficient for state anxiety and 0.90 for trait anxiety and also Test-retest coefficients of anxiety scale ranging from 0.16 to 0.86 and totally Cronbach's alpha coefficient has been stated as 0.94. Khani pour et al. (1890) developed a research which in terms of Cronbach's alpha, the consistency coefficient of the test was 0.66. In dealing with adults, students and army participants, its reliability has been reported 0.85 to 0.95 by internal consistency, and through test-retest reliability, it was 0.77 for students and 0.70 for college students (As quoted in Khani pour et al., 2011).

3. World health organization Quality of life questionnaire

World health organization Quality of life questionnaire is designed to assess the quality of life by World health organization (World health organization, 1996). The short form of the present questionnaire consists of 26 questions and assesses four areas of physical health, mental health, social relationships and environmental health with 24 questions (subsequently they have 8, 3, 6 and questions). The first 2 questions just assess the general area of the quality of life. After doing all required assessments in each area, a point will be achieved separately in the range of 4 to 20 for every area in which 4 stands for the worst and 20 represents the best situation of them and higher point indicates the high quality of life (World Health Organization, 1996). Nejat et al. (2016) have generated norm-referenced about this scale in Iran and they assessed the reliability of test with internal consistency method that Cronbach alpha for the healthy population in physical health area was 0.70, mental health was 0.73, the
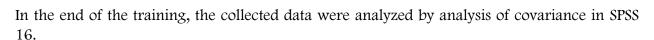
social relationship was 0.55 and environment communication reported as 0.84, and after two weeks they stated test-retest reliability as 0.7 (Nejat et al. 2016).

4. Training Protocol

In this research, the experimental group was investigated under Habit Reversal Training in 8 one-hour sessions and twice a week by using Azrin and Nun's training protocol. In the following table, the protocol and sessions have been shown in which participants of the experimental group were examined.

Session	The concept of session
1	The first session will contain introducing the individuals which present in the health plan, creating appropriate communication, psychosocial training about the nature of disorder by using appropriate language along with the level of individuals and acquiring general perception about the disease.
2	The second session will be about consciousness training in which individuals acquire more information about the details of behaviors setting as the objective of treatment by the therapist. In these sessions, in order to create an accurate behavioral figure, every reported symptom is defined as the operational way by the subject. Then, it will be classified in terms of intensity and performance in order to drawing the treatment attention over it.
3	In this session, the relaxation training will be done in which the individual relax in an appropriate and comfortable place and he/she starts to create contraction and expansion in all of his/her muscles from head to toe in a calm and quiet space.
4	This session will be progressed by opposing response. Individuals with disorder learn those behaviors that are opposite to the intended goal of the treatment. Hence, a subject learns to show undesirable behavior for about a minute (as long as it needs to be low) in order to he/she can anticipate when symptoms are going to happen. First, the response of rival is investigated by the therapist and then by the participant and they should be interesting responses of the participant.
5	In this session, some exercising is given to the individuals in order to they can do what they learn in opposing response learning as homework at home.
6	In the sixth sessions, the motivational procedures of individuals will be investigated. The therapist should create the required motivation in individuals with the disorder and helps to increase it by themselves. The main element of the present session is the social supportive of others especially the family member which they have to be trained in such aspects.
7	In the seventh session, the individual has trained the way of learned generalization skills. This can be done by the role play of therapist or other present individuals. The client should find an imagination about their control on other life situations.
8	In the final session, again the trained techniques are reviewed and then difficulties and problems are examined which might be happened for participants and the other present individuals in the health plan during performing of skills and the their questions will be answered.

In the end of the training, the collected data were analyzed by analysis of covariance in SPSS 16.

RESULTS

The subject's demographic information (educational position and age) has been provided in Table 1.

Table 1. The Demographic Information of the Participants

		Group	
		Experimental group	Control group
Variable		Frequency (Percentage)	Frequency (Percentage)
Academic standing	High school	~	1 (%8.3)
	Diploma	6 (%50)	4 (%33.3)
	Bachelor degree	5 (%41.7)	5 (%41.7)
	Master degree	1 (%8.3)	2 (%16.6)
Age		(6.89) 29.82	31.85 (10.83)

According to the demographic information of two groups, all the subjects are women and married. Furthermore, the highest frequency with regard to educational position is related to diploma and bachelor degree in the experimental and control group, respectively. Additionally, there are 5 bachelor degree and 1 master degree in the experimental group. There are 1 high school education, 4 high school diploma and 2 associate degree in the control group. In terms of age variable, the age mean is 29.82 in the experimental group and 31.85 in the control group.

Table 2. The Descriptive Information of the Subjects in The Research Variables

Group		Experimental Group (n=12)		Control Group (n=12)	
Variable	Stage	Mean	Standard Deviation	Mean	Standard Deviation
Hair Pulling	Pretest	23.08	3.58	22.75	2.73
	Posttest	16.92	2.15	21.01	3.26
Trait Anxiety	Pretest	62.25	10.41	61.67	6.70
	Posttest	55.58	8.19	62.11	5.71
State Anxiety	Pretest	61.17	4.93	61.92	8.12
	Posttest	51.25	5.10	59.08	6.32
Quality of life	Pretest	47.08	16.13	49.16	16.19
	Posttest	68.75	14.42	51.75	51.75

Table 2 presents the descriptive information of research variables for both experimental and control groups in the pretest-posttest stage. The multivariate analysis of covariance was used for analyzing the effectiveness of Habit Reversal Training on anxiety, quality of life, and symptoms of Trichotillomania (TTM) patients. According to the current analysis, the group (experimental and control groups) was considered as the between-subject factor, hair pulling scores, trait-state anxiety and the quality of life in the pretest as the control variables and hair pulling scores, trait-state variable, and the quality of life in the posttest as the dependent variables.

The results of the analysis have been presented in Table 3. But before using the multivariate analysis of covariance test, its assumptions were investigated and the normal distribution was the first one. The Kolmogorov–Smirnov test (K-SZ) was used to examine the normality in which the result showed that the test was not significant for any of the variables which demonstrates the normality of the variables.

The result of Leven test for analyzing the homogeneity of variance of dependent variable indicated that the variance of hair pulling ($F_{22,1}$=3 /32, p> 0.05), trait anxiety ($F_{22,1}$= 0.63, p> 0.05), state anxiety ($F_{22,1}$=1.16, p> 0.05), the quality of life ($F_{22,1}$=0.10, p> 0.05) were equal in the groups. The results of Box's M test in examining the covariance matrix of dependent variables showed that this amount was equal in two groups (Box M= 15.81, F=1.26. p> 0,05). After exploring of the assumptions of analysis of covariance of dependent variables, the results showed that there is a significant difference between two groups in hair pulling, trait anxiety, state anxiety, and the quality of life ($F_{4,15}$= 8.55, p<0.001, Wilks Lambda test= 0.30). In Table 3, the results of the between-subject effects have been reported in investigating of the significant difference of all the variables of the experimental and control group.

Table 3 has reported the results of the intergroup effects.

Table 3. The Results of Analysis of Covariance of Intergroup Effects in Two Groups

Statistical index of Squares	Sum of Squares	Degrees of Freedom	Mean Squares	F	Significance	Squares (amount of effect)
Hair Pulling	60.91	1	60.91	6.81	0.01	0.27
Trait Anxiety	284.68	1	284.68	5.24	0.03	0.22
State Anxiety	328.10	1	328.10	14.64	0.001	0.45
Quality of Life	623.79	1	328.10	15.95	0.001	0.47

According to Table 3, the insignificant level of F statistic for the variables of hair pulling, trait-state anxiety and quality of life is 0.001, 0.05, and 0.001, respectively. The findings indicate that there is a significant difference between the groups in the variables. With regard to the results of Table 1. which show the contrary with control group in hair pulling, trait anxiety, state anxiety variables and high score in quality of life, the experimental group has lower mean in the posttest, it can be concluded that the significant difference between experimental and control group in these variables is toward the experimental group and those individuals who participate in the experimental group and receive Habit Reversal treatment in comparison to the control group with no training had more hair pulling, trait anxiety, state anxiety and quality of life. Therefore, Habit Reversal Training is effective on anxiety, quality of life and symptoms of Trichotillomania (TTM) patients.

DISCUSSION AND CONCLUSION

The purpose of the current study was to determine the effectiveness of Habit Reversal Training on anxiety, quality of life and symptoms of Trichotillomania (TTM) patients. The results of the research showed that Habit Reversal Training has affected anxiety, quality of life and symptoms of the patients positively and caused improving the quality of life, decreasing the anxiety and hair pulling symptoms in the patients. These results are consistent with those of Share et al. (2018), Rahman et al. (2017), Gawlowska-Sawosz et al. (2016), Eshaghzadeh et al, (2016), Jamshidian ghalee shahi (2015), and Mikaeeli monee (2013) who have shown that Habit Reversal Training has positive effect on Trichotillomania (TTM) symptoms and psychological health of the individuals.

In explaining the effectiveness of Habit Reversal Training on Trichotillomania (TTM) symptoms, it should be pointed out that the most significant property of Habit Reversal Training in an individual with Trichotillomania (TTM) is creating self-awareness towards disordered habit,

training effective alternative coping skill, keeping motivation and increasing the generalization of newly learned behaviors. Specifically, building awareness and using opposing response have an effective role in decreasing disordered habits (Diefenbach et al., 2010). Awareness training makes clients identify bad habits cases in order to perform an opposing response. Using opposing response has two reactions. Firstly, it deals with preventing habitual behavior and providing opposite behavior to replace with former. The second reaction is that the opposing response may act as a punishing and prevent displaying of the behavior (Miltenberger, 2001). In the same way, researchers state that the most important effective factor of this method is training awareness and self-monitoring because most habitual disorders behaviors and impulse control happen without individual's awareness. Then, increasing awareness about the occurring of behavior, its antecedents and subsequent by improving self-monitoring ability can lead to decreasing hair pulling symptoms. Learning opposing response cause the habitual disordered behavior have less opportunity to reveal and if the situation is appropriate to occur, it will be punishing and ineffective rather than useful (Himle et al, 2004). Specifically, a person with Trichotillomania (TTM) learn two fundamental skills by participating in Habit Reversal Training sessions: (1) he/ she recognizes and identifies occurring of every habit and (2) uses opposing response which causes preventing from the inappropriate habit (Van Minnen et al., 2003). Moreover, along with reducing hair pulling symptoms Habit Reversal skills can result in reducing anxiety, destructive behaviors and increasing social performance. Due to the increased social performance, reducing anxiety and destructive behaviors, the quality of life increases too. Furthermore, the results of the research indicated that the Habit Reversal Training leads to reduce the disease symptoms. Then, this gives rise to increasing job and social performance and the individual interpersonal relationships that consequently all of them cause improving the affected individual's welfare and quality of life (Eshaghzadeh et al., 2016). Indeed, it can be assumed that there is a positive relationship between decreasing of symptoms and high quality of life. Additionally, Habit Reversal contains skills such as emotional, social and family support, increasing motivation and confidence lead to increasing satisfaction about job and quality of life in these patients. It can be argued that, in the extent to which a person has more social support during and after the treatment, he/she will acquire greater improvement. Social supports and improvement programs can confirm trained skills such a relaxation, and opposing response in the individual, and in addition to benefiting from the treatment in terms of reducing hair pulling he/ she acquires a better mental condition (Share et al., 2018).

More significantly, due to creating appearance problems in the individuals, Trichotillomania (TTM) essentially lead to anxiety in them, and on the other hand with regard to the phenomenology studies it has been confirmed that the individuals with Trichotillomania (TTM) have a high level of anxiety automatically which result in increasing the hair pulling behavior (Grant & Chamberlain, 2016). Through decreasing the symptoms and disordered behaviors, Habit Reversal Training decreases the level of anxiety. Nevertheless, the individual learns coping skill and ability and decrease it by using techniques such as relaxation training, building motivation and creating coping strategies. That is to say, an individual uses inappropriate methods in order to reduce the anxiety because he/she does not have effective coping skills over it, but by learning the appropriate method in controlling of anxiety, the level of abnormal behavior will reduce as well. On the other hand, participants can improve their

confidence and self-esteem by taking part in the group and obtaining benefits of group therapy such as receiving social and mental supports, perception about the individuals with the same problem, training successful experience in coping with this problem, getting sympathy and etc. this can give rise to reducing anxiety in the patients (Rahman et al., 2017).

As a general rule, the result of the present study confirms previous research that maintains Habit Reversal Training an appropriate method in reducing obsession and impulsive disorders like Tourette syndrome, Tic disorder, hair pulling and nail-biting. Thus, taken together, these results justify strongly that Habit Reversal Training has the positive effect on the disorders and their outcomes. Although the study has successfully demonstrated the functional result, like other researches it has had certain limitations in terms of using self-reported questionnaire instrument and nonprobability sampling that for this reason the further research should be precautious in generalization. Furthermore, it is recommended that future research be undertaken with respect to totally random sampling and various instruments and Habit Reversal Training be taken into account in clinics and psychotherapy centers.

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