

The effectiveness of positive thinking training on self-efficacy and emotion regulation in men with hemophilia

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Abstract

Study design: A semi-experimental study (pre-test, post-test, and follow-up with the control group).

Summary and background data: Hemophilia as an inherited bleeding creates fundamental changes in the quality of life of hemophiliac population. Patients with hemophilia need to improve the positive relationship with themselves and others by a positive thinking training and the avoidance of negative thoughts as a coping strategy against the problems of their life.

Objectives of the study: The purpose of this study was to examine the effectiveness of positive thinking training on self-efficacy and emotion regulation in men with hemophilia.

Method: In the present study, 30 patients with hemophilia were selected among all patients with hemophilia (N=129) of Lorestan province. They were randomly assigned to the experimental group (N=15) and control group (N=15). The subjects completed self-efficacy and emotion regulation questionnaires. Seligman's positive thinking training program was administered to the experiment group in eight 120-minute sessions and the control group received no training. The collected data were analyzed using Covariance statistics method and SPSS software (version 21).

Results: The results of this study showed that the self-efficacy and emotion regulation increased significantly in the experimental group when compared to control group.

Conclusion: The positive thinking training helps patients with hemophilia to avoid negative thoughts and apply better strategies to cope effectively with problems. Patients' information processing works more efficiently by positive thinking and it increases self-efficacy and emotion regulation.

Introduction

Hemophilia is an inherited bleeding disorder, which is one of the most costly diseases in the world. There is no plasma protein, responsible factor for blood clotting, in this disease. Hemophilia characterized by deficiency of coagulation factor 8 (also known as hemophilia A or classic hemophilia) and coagulation factor 9 (also known as hemophilia B or Christmas disease) [1,2]. Hemophilia A and B are due to the congenital deficiency of clotting factor VIII and IX. Therefore, women are carriers of hemophilia and men with hemophilia. Hence, this disease is related to the gender. It means that the defective gene located on chromosome x that causes the disease in males and females are a hereditary carrier [3,4]. Undoubtedly, the experience of Hemophilia creates fundamental changes in one's life, because the patient is in a position to deal with many psychosocial, emotional and physical problems. While self-efficacy as a person's source of coping can facilitate the process of adaptation to these changes [5]. Self-efficacy is the main structure of Bandura's social and cognitive theory. Performance is called individuals' judge about their capability, capacity, and capabilities to perform a specific

task and to conclude designed levels [6]. Emotional reactions that involve in stress are required emotion regulation. The increasing of self-efficacy is associated with the behavior change, treatment acceptance, and the promotion of physical and mental health [7]. According to the results of the last few decades in the field of a central role of emotional experiences in the escalation of hemophilia, the researchers studied the effects of emotion regulation in the consequences of the disease. The capacity of emotion control human capacity is important for a human's adaptation [8]. The emotion regulation is as processes that individuals evaluate their emotions through them and it helps to determine what type of emotional reactions are appropriate that are expressed in a right

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time and an appropriate manner [9]. Emotional responses can affect physical health. There is a special attention in this context to the role of hostility, anxiety, and depression in the field of hemophilia and the core of the findings is that the increasing of negative emotions levels is associated with the worsening of Hemophilia disease. Accordingly, researchers believe that emotion regulation may be involved in the consequences of this disease [10]. The concept of emotion regulation refers to the processes that people use consciously or unconsciously to respond appropriately to environmental applications. This structure plays a significant role in mental health and disease. The successful emotion regulation is associated with the health promotion [11]. A new approach known as positive psychology tries to deal with positive issues of human's life such as emotion regulation and self-efficacy with a scientific and practical look in the last decade [12]. Positive psychology is a term that has been created in the response to overemphasis of psychological on problems and disease. This approach does not ignore those problems that people may experience but it believes that the focused attention to disorders will lead to a defective vision of the human's condition and position [13]. Positive thinking is the result of individuals' attitude to life and its periphery phenomena and in fact, it is a mirror that shows the individuals' insight practices and attitudes to the creation and God's creatures [14]. The results of Ben Zur's study showed that a positive thinking had a positively relationship with health and it could play a positive role in health [15]. Positive thinking training may be as effective as physical activity and exercise training [16-20] on improving health-related quality of life among patients and health population. In addition, it can use as a priceless tool to improve psychological parameters in healthy and unhealthy people [12,21]. Hence, the positive thinking training seems to be invaluable plan for hemophilia patients to improve the positive relationship with themselves and others so that they can feel good about themselves and to have valuable and positive relationships with others and to control emotions. In general, a positive thinking and the avoidance of negative thoughts are more effective strategies to cope with problems. The good mood improves patients' information processing effectively and increases emotion regulation and self-efficacy [22]. Self-efficacy and emotion regulation studies to clear the positive thinking training effects on hemophiliac population are poorly understood. It was necessary to evaluate understanding of mental health issues related to patients with hemophilia and the planning for the treatment of these issues in order to possibly enhanced self-efficacy, the reduction of incompetence sense and negative emotions, the emotional proper draining, improvement of interpersonal relationships and emotion regulation. Therefore, this study was conducted to examine the effectiveness of positive thinking training on self-efficacy and emotion regulation in men with hemophilia.

Materials and methods

Study design

This study was semi-experimental research with pre-test and post-test and follow-up design, using control group.

Subjects

All men who were a member of Hemophilia Association of Lorestan province (N=129) were population of investigate. Then, 30 patients with hemophilia were randomly selected from this population. Written informed consent was obtained by all participants. Finally, they were randomly assigned to the experimental group (N=15) and the control group (N=15).

Instruments and tasks

The instrument of this study was included Gross and John's Emotion Regulation Questionnaire and Scherer's Self-Efficacy Questionnaire. Gross and John's emotion regulation questionnaire consists of two sub-scales: reappraisal with 6 items and suppression with 4 items. The subjects answered by 7 point Likert scale from strongly agree (score 1) to strongly disagree (score 7). The internal correlation was 0.79 for the reappraisal subscale and 0.73 for the suppression subscale in Gross and John's study [10]. It is also reported 0.79 for the rate of Cronbach's alpha coefficient in the reappraisal subscale [23]. Scherer's self-efficacy questionnaire had 17 questions that each question was regulated on the basis of Likert's scale from strongly disagree to strongly agree. The scale scoring was in this way that each question was awarded from 1 to 5 points. 1, 3, 8, 9, 13, and 15 questions were scored from right to left and the rest of the questions were scored from left to right. Therefore, a subject's the maximum score was 85 and his minimum score was 17. The reliability coefficient of scale was 0.76 using the Guttman's split-half test and 0.70 using Cronbach's alpha coefficient [24].

Procedure

The experimental group were trained under positive thinking training for 8 sessions of 2 hours. The control group did not receive any training during this period. Therefore, the training program was included 8 training sessions of 2 hours that was conducted twice a week for a month. Seligman's positive thinking training as a treatment program was an adoption of Seligman's et al 2006 positive thinking training that was prepared for use in this study [25]. The content of the training sessions is summarized as follows:

The first session: (introduction and direction) Subjects' familiarity with the training period and concepts such as life satisfaction, happiness, vitality, and the role of these factors in a good life and ways of achieving a satisfying life, the assessment of life satisfaction, happiness, the meaning in life and individuals' depression, and the training of homework: the positive self-introduction.

The second session: (personal empowerments and the use of them in a new form (the accomplishment of personal empowerment questionnaire and the identification of each member's five premier empowerments in the group, the introduction of personal empowerments as a way to achieve life satisfaction, and the training of homework: the use of empowerments in a new form.

The third session: (the planting of positive emotions and the mention of blessings and good things in life) the familiarity with positive emotions and their role in the vitality and happiness, the mention of blessings and the positive things in daily life, the survey of amount of use of personal empowerments in individuals' behavior and the familiarity with positive emotions, and the presentation of homework: the mention of three positive things / three blessings in life.

The fourth session: (the personal legacy and the intention and purpose in life) the review of the task of previous session, the discussion about the importance of having purpose and meaning in life with referring to the symptoms of depression in individuals, the description of personal legacy personal and its application in life, the presentation of questions in the field of personal legacy to respond until the next session.

The fifth session: (the gratitude letter and visit (appreciation and thanks), and the survey of half training course) the survey of the

results of activities that are done during the previous weeks, the on the good memories, the move to the creation of appropriate interpersonal communication, the increasing of satisfaction of life through the pleasure of satisfy others, the training of art appreciation and gratitude, the implementation of all tests of the first session, and homework: the implementation of technique of letter writing and the gratitude visit.

The Sixth session: (positive social relationships and happiness in life) the introduction to positive social relations, the role of positive relationships in life, happily, the training and the provision of homework: the application of technique of constructive and active respond.

The seventh session: (work with contemplation and calm (the avoidance precipitance)) the familiar with how to stabilize pleasures, work with reflection and calm and its role in life satisfaction and the presentation of provide homework: how to work with contemplation

The eighth session: (the happiness celebration and the stabilization of happiness) the feedback of training course, the holding of happiness celebration, the implementation of conducted tests in the first session, the study of follow-up of training effects in the next month.

Data analysis

The collected data were analyzed using Covariance statistics method. The covariance statistics method was used to determine the effect of pre-test variable (positive thinking training) on the dependent variable (post-test scores of self-efficacy and emotion regulation). Also, the assumption of homogeneity of regression slopes and variances were surveyed before the covariance analysis. Levene's test was used to survey the assumption of homogeneity of variances. Furthermore, the Kolmogorov-Smirnov test was used to determine the normal distribution of scores in two variables. SPSS statistical software (version 21) were used to statistically analyze all data. Its significance level was set at $P < 0.05$. All data presented as mean \pm SD as well.

Results

All frequency data has shown in Tables 1-4. In addition descriptive variable are presented in Table 5.

Table 1. The frequency distribution of demographic characteristics of the sample

Groups	Education	F	Percent
The experimental group	Diploma	7	46.7%
	Associate's degree	1	6.7%
	Bachelor's degree	4	26.7%
	Master's Degree	3	20%
The control group	Diploma	8	53.3%
	Associate's degree	1	6.7%
	Bachelor's degree	4	26.7%
	Master's Degree	2	13.3%
Total	Diploma	15	50%
	Associate's degree	2	6.7%
	Bachelor's degree	8	26.7%
	Master's Degree	5	16.7%

Table 2. The frequency distribution of demographic characteristics of the sample

Groups	Marital status	F	Percent
The experimental group	Married	5	33.3%
	Single	10	66.7%
The control group	Married	4	26.7%
	Single	11	73.3%
Total	Married	9	30%
	Single	21	70%

Table 3. The frequency distribution of demographic characteristics of the sample

Groups	Employment status	F	Percent
The experimental group	Self-Employed	5	33.3%
	Employee	7	46.7%
	Unemployed	3	20%
The control group	Self-Employed	6	40%
	Employee	5	33.3%
	Unemployed	4	26.7%
Total	Self-Employed	11	36.7%
	Employee	12	40%
	Unemployed	7	23.3%

Table 4. The frequency distribution of demographic characteristics of the sample

Age	Experimental group	Control group	Total
Number	15	15	30
Mean	31.67	30.07	30.87
SD	6.10	7.96	7.02
Middle	31	31	31
Minimum	18	18	18
Maximum	41	45	45

Table 5. The results of descriptive indicators of variables

variables		Groups	Number	Mean	SD
Self-efficacy	Pre-test	Experimental	15	64	9.21
		Control	15	60.33	9.44
	Post-test	Experimental	15	71.73	6.02
		Control	15	62.73	10.86
	Follow up	Experimental	15	69.60	5.73
		Control	15	61.33	10.34
Emotion regulation	Pre-test	Experimental	15	50.07	8.32
		Control	15	44.47	5.50
	Post-test	Experimental	15	55.47	7.45
		Control	15	43.07	6.85
	Follow up	Experimental	15	53.20	7.80
		Control	15	43.20	6.52

The results of homogeneity of regression slopes showed (Table 6) a lack of interaction between group and pre-test scores, in the post-test and follow up phases. Therefore, this assumption was confirmed and regression slopes were homogeneous (self-efficacy variable: post-test: $F=3.82$, $P\text{-value}=0.06$, Follow up: $F=3.60$, $P\text{-value}=0.07$; emotion regulation variable: post-test: $F=3.53$, $P\text{-value}=0.07$; Follow up: $F=1.89$, $P\text{-value}=0.18$).

The results showed that that there was no difference between variances of two group in the pre-test and follow up phases (Table 7). Therefore, this assumption was confirmed (the result of Levene's test for self-efficacy variable: post-test: $F=2.65$, $P\text{-value}=0.11$, Follow up: $F=1.56$, $P\text{-value}=0.22$; emotion regulation variable: post-test: $F=0.40$, $P\text{-value}=0.53$; Follow up: $F=0.57$, $P\text{-value}=0.45$).

According to the results of Table 8, the obtained statistics were smaller than the critical value at 0.95 (1.96). Hence, the scores distribution were closed to the normal distribution and there had no significant difference with it.

The results in Table 9 showed that the random variable (pre-test) had a significant relationship with dependent variables (post-test and follow up). There was a significant factor effect between subjects in self-efficacy variable (Post-test: $F=9.66$, follow up: $F=8.56$) and in emotion regulation variable (Post-test: $F=23.25$, follow up: $F=12.91$) after the adjustment of pre-test scores. Therefore, the results showed that there was a significant difference between post-test and follow up scores in

Table 6. The assumption of homogeneity of regression slopes

Variance Sources		#SS	df	*MS	F	Sig
Self-efficacy	Post-test	78.87	1	78.87	3.82	0.06
	Follow up	58.80	1	58.80	3.60	0.07
Emotion regulation	Post-test	52.38	1	52.38	3.53	0.07
	Follow up	22.74	1	22.47	1.89	0.18

*Sum of squares; *Mean square

Table 7. The results of assumption of homogeneity of variances

Variables		F	Df ₁	Df ₂	Sig
Self-efficacy	Post-test	2.63	1	28	0.11
	Follow up	1.56	1	28	0.22
Emotion regulation	Post-test	0.40	1	28	0.53
	Follow up	0.57	1	28	0.45

Table 8. The assumption of normal distribution of scores

Variables		Kolmogorov- Smirnov test	Sig
Self-efficacy	Post-test	0.67	0.75
	Follow up	0.68	0.73
Emotion regulation	Post-test	0.57	0.89
	Follow up	0.49	0.96

Table 9. The results of covariance analysis related to the life expectancy and coping skills

variable	#DV	#CS	*SS	df	**MS	F	Sig	*#E
Self-efficacy	Post-test	Pre-test	1377.5	1	1377.5	47.4	0.01	0.63
		Group	280.74	1	280.74	9.66	0.01	0.26
	Follow up	Pre-test	1231.2	1	1231.2	45.6	0.01	0.62
		Group	230.37	1	230.77	8.56	0.01	0.24
Emotion regulation	Post-test	Pre-test	996.79	1	996.79	61.4	0.01	0.69
		group	277.12	1	277.12	23.5	0.01	0.46
	Follow up	Pre-test	1113.8	1	1113.8	89.8	0.01	0.76
		Group	160.14	1	160.14	12.9	0.01	0.32

#Dependent variable; #Change source; *Sum of squares; **Mean square, **Effect size of Eta

two groups. In addition, the results showed that the rate of self-efficacy and emotion regulation increased in the experimental group after the conducted courses of positive thinking training.

Discussion

The aim of the present study was to examine the effectiveness of positive thinking training on self-efficacy and emotion regulation in men with hemophilia. The results of this study showed that positive thinking intervention resulted in increased significantly self-efficacy in men with hemophilia. We confirmed the outcomes of the previous studies that were on the basis of effectiveness of positive thinking training on self-efficacy [26,27]. Positive thinking training can increase the possible of more positive personal impressions of own increases resulted in that the people to be able to accept more responsibility for their validity and to achieve a full understanding of themselves. Researchers believe that positive thinking plays an important role to cope with stressful events of life [28,29]. Positive people have the confidence and stability when they are faced with a challenge (even if progress is difficult or slow), but the pessimists are hesitant and unstable. This difference may be more in difficult circumstances such as hemophilia disease. Positive patients believe that hardness can run a successful manner. This difference in attitude toward hardness and disease affects hemophilia patients' self-efficacy [30]. On the other hand, the findings of the present study demonstrated that the positive thinking training had the beneficial effects on emotion regulation. These results are confirmed by other evidence [31,32].

We can acknowledge in the analysis and interpretation of this part of the study that emotion and behavior interact with each other. The emotion regulation with control of attention and emotional-cognitive consequences cause to change altering cognitive systems function (such as memory, attention, awareness) and then emotion regulation. In the other words, emotion regulation has a major effect on mental health, motivational processes and appropriate response to the problems in daily life as one of human's the important psychological aspects and affect individuals' various actions. Although emotions have a biological basis, people are able to influence the intensity, duration and type of their emotional experiences.

Conclusion

The positive thinking training as an essential strategy and high value approach may count as an important tool to tackle with stressful situations of life and consequently leads to improve health and peace of spirit and mind in society. The results of this study may use in counseling centers, mental health clinics, etc. Therapists can encourage others using positive psychology strategies, which can help them to understand and improve patients' strengths.

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Conflict of interest

The authors declare no conflict of interest.

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