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Effect of Two Therapies: Compassion-Focused and Positive-Oriented on the Body Image among Female Adolescents with a History of Self-Injury

Fatemeh Kashanian[1], Anahita Khodabakhshi-Koolaee[2*], Davood Taghvaei[3], Ghoudsi Ahghar[4]

[1]PhD. Candidate, Department of Psychology, Arak branch, Islamic Azad University, Arak, Iran
[2]Associate Professor of Psychology, Department of Psychology & Educational Sciences, Faculty of Humanities, Khatam University, Tehran, Iran/ visiting Associate Professor of Psychology, Arak branch, Islamic Azad University, Arak, Iran
[3]Associate Professor, Department of Psychology, Arak branch, Islamic Azad University, Arak, Iran
[4]Professor, Academy of Scientific Studies in Education, Ministry of Education, Tehran, Iran/ Visiting Professor of Psychology, Arak branch, Islamic Azad University, Arak, Iran

Corresponding Author Address: Khatam University, No.30, Hakim Azam St., North Shiraz St., Mollasadra Ave., Tehran, Iran

Tel: 0098-9122343717

Email: anna_khodabakhshi@yahoo.com

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Abstract

Background: Self-injury in adolescents refers to intentional behaviors that are not extrinsically motivated or do not have pre-determined intentions and impose costs on one's body image.
Objectives: This study aimed to compare the effectiveness of compassion-focused therapy and positive-oriented therapy on the body image of female adolescents with a history of self-injury.
Methods: This semi-experimental study with a pre-test-post-test design was conducted on 45 female high school students in district 4 of Tehran in the year of 2021. Participants were randomly divided into three groups (two intervention groups and one control group). The data were collected using a demographic information checklist and the Multidimensional Body-Self Relations Questionnaire–Appearance Scale (MBSRQ-AS) developed by Cash et al. (2000). The collected data were analyzed through multiple analysis of variance (MANCOVA) with SPSS software 26.
Results: The data revealed a statistically significant difference between the mean body image and the sub-scales scores in the three groups after the intervention appearance (F=18.37; P=0.001; Eta=0.620), appearance orientation (F=0.99; P=0.001; Eta=0.599), body areas satisfaction (F=11.87; P=0.001; Eta=0.659), fitness orientation (F=15.68; P=0.001; Eta=0.603), preoccupation with weight (P =23.04; P=0.001; Eta=0.540), and body satisfaction (F=16.69; P=0.001; Eta=0.613). The Bonferroni post hoc test showed no significant difference in the effectiveness of two therapies in the participants' body image (P>0.05).
Conclusion: Considering the effectiveness of both compassion-focused and positive-oriented interventions on the body image, it is suggested that these interventions be used in female adolescents with a history of self-injury to reduce anxiety and improve mental well-being.

Keywords: compassion-focused therapy, positive-oriented therapy, self-Injury, body image, female adolescents

Introduction

Adolescence is the transition stage of human physical and mental development that occurs between childhood and adulthood. This transition involves biological changes such as sexual, social, and psychological maturation. During this period, the adolescent may engage in many unhealthy behaviors and psychological-emotional trauma

[1]. Non-suicidal self-injury is very common in adolescents, which refers to body tissue damage without suicidal intent [2]. Self-injury refers to intentional self-injurious behavior that is not extrinsically motivated. It is often performed without any predetermined intention and brings many health costs to human societies [3]. Self-injury includes different types of behaviors performed directly or indirectly with different psychological and interpersonal intentions and with or without suicidal intent [4].

Epidemiological findings have shown a high prevalence of 9-19% of self-injurious behaviors among adolescents [5]. Etiological studies in Western Europe show that about 10% of students have engaged in self-injurious behavior during their studies [6]. Some studies have indicated that high-risk and self-injurious behaviors increase significantly during adolescence [7]. Stänicke et al. (2018) defined self-injury as intentional and non-fatal physical injury that is socially unacceptable and is used to reduce communication with psychological stress [8]. Self-injury rarely begins before puberty and usually appears for the first time between the ages of 14 and 24 [9].

In Iran, more than 17% of Iranian female students in senior high school have engaged in self-injurious behaviors at least once, and 11.1% of them more than once [10]. In other qualitative studies, Mohebi et al. (2018) interviewed female adolescents with a history of self-harm. They grouped the reasons for this behavior into 9 factors: Emotional-cognitive characteristics, incompatible relationships, adolescent problems in the family, feeling relaxed after committing self-injury, forgetting problems, impressing others, proving to be great and strong, and feeling remorse and regret [11]. A review of the literature shows that self-injurious behaviors are related to stressful events in life and negative emotions such as depression, anger, stress, and dissatisfaction with body image [12,13]. Dissatisfaction with body image is highly prevalent among adolescents, and girls are more dissatisfied with their body image and fitness compared to boys [14].

People who have a negative body image are disturbed in many areas of life, and as a result, their quality-of-life decreases. These people are constantly worried about an exaggerated imaginary defect in their appearance and engage in obsessive-compulsive behaviors such as checking their physical appearance in the mirror or hiding the appearance defect and repetitive behavior of facial makeup [15]. There is also a significant relationship between dissatisfaction with body investment and self-harm [16]. Scars from burn injuries adversely affect body image. Patients with borderline symptoms with non-suicidal self-injuries (NSSIs), which often result in scars, have body image disruption [17]. There is a relationship between positive body image and other psychological components such as self-compassion, positive affect, and negative affect. A study showed that female students who had a more favorable body image had higher self-compassion and positive feelings [18].

Despite the remarkable progress that has been made in the therapeutic interventions, people with self-injurious intentions still experience anxiety and mood disorders with a higher prevalence and frequent relapses. These issues highlight the inadequacy of existing treatment interventions and the need to introduce new treatments with greater effectiveness and durability to address the challenges faced by these people and reduce human and social costs caused by self-harm behaviors [19]. Compassion-focused therapy is one of the therapies developed by extending cognitive-behavioral therapy. This therapy can reduce pain, suffering, worry, and anxiety [20,21]. In this therapy, clients learn not to avoid painful feelings and not to suppress them. This therapy focuses on four areas of previous experiences, basic fears, and ways to feel safe, and unforeseen and unintentional outcomes [22].

Furthermore, studies have shown that positive-oriented therapy helps to identify and improve positive emotions and increase the psychological well-being of people. This therapy can help clients to prevent and adapt to life problems in clinical and non-clinical populations [23]. Positive thinking is effective in improving the psychological health of adolescents with high-risk behaviors [24].

The bitter experiences of childhood and living in an unsafe environment, and parental negligence have increased the prevalence of self-harm and suicidal behaviors in Iran [11,25]. Moreover, such behaviors impose substantial costs on the medical and health system of the country [26] and are not

compatible with the cultural values and norms of the Iranian community. Thus, a detailed analysis of the application of psychological interventions to prevent and treat self-injury of adolescents in educational settings and schools is essential. Many adolescents consider self-harm to be a cry for help [11]. Creating a positive sense of body image in schools with a preventive approach can help these adolescents. To this end, the present study sought to examine the effectiveness of compassion-focused therapy and positive-oriented therapy in improving body image in female adolescents with a history of self-injury.

Methods

This quasi-experimental study was conducted using a pre-test-post-test design with a control group. The research population consisted of all female students studying in senior secondary school (10^{th}, 11^{th}, and 12^{th} grades) in District 4 of Tehran in the academic year 2020-2021. The participants were selected through multi-stage cluster random sampling. First, a list of public high schools for girls in District 4 Tehran was taken from the regional education department. Then, 5 schools were randomly selected from among the schools in the district. Next, 6 classes were selected from these schools, and the data were collected from all the students in these classes. In the next step, the participants were selected based on the respondents' low scores on the Multidimensional Body-Self Relations Questionnaire– Appearance Scale (MBSRQ-AS) and high scores in The Self-Harm Inventory (SHI) were entered to intervention. The sample size was estimated using Fleiss's sample size, estimation equation was σ=1.61, d^2=4.507, Power=0.9, and α=0.05. In the mentioned equation, σ is the standard deviation that shows the degree of dispersion, and d is the confidence interval showing the degree of negligibility of the sample= 2.12. The sample size was estimated to be 12.07 persons based on the following equation. However, 15 persons were selected in each group to ensure the sampling adequacy:

$$n = \frac{2\left(\frac{1}{61}\right)2\left(\frac{1}{96}\right)\left(\frac{1}{28}\right)2}{4.507} = 12.07$$

The inclusion criteria were: (1) Having experienced self-injury more than once in the last six months based on the MBSRQ scores and The Self-Harm Inventory (SHI), (2) Parents living together (not being a child of divorce), ad (3) Regular attendance in therapy sessions (4) Willingness to participate in the study. The exclusion criteria were: (1) The absence of more than two sessions and (2) participating in other psychological programs at the same time, (3) Receiving similar training in the last few months.

Instruments

A. Multidimensional Body-Self Relations Questionnaire– Appearance Scale (MBSRQ-AS): The questionnaire was developed by Cash et al. (2000) and has 69 items with 6 subscales and one overall scores: Appearance Evaluation, Appearance Orientation, Body Areas Satisfaction, Fitness orientation, Overweight Preoccupation and Self-Classified Weight. The items are scored on a 5-point Likert scale (1 = totally disagree to 5 = totally agree). This tool can be administered to adolescents and adults. The minimum score is 69 and the maximum is 345. The scoring is such that those who have a more favorable mental image get higher scores. The psychometric properties of the questionnaire have been confirmed in numerous studies. The developers of the questionnaire have reported its reliability with Cronbach's alpha coefficient of 0.95 for the whole questionnaire and the corresponding values for its subscale were above 0.74 [27-29]. Laus et al. (2020) reported Cronbach's alpha coefficient of 0.84 for the whole tool. The corresponding values for the subscales varied from 0.69 to 0.76 [30]. In Iran, Khodabandeloo et al. (2019) reported that the reliability analysis of the total score of MBSRQ-AS and its subscales suggested good internal consistency (Cronbach's alpha coefficient for the whole scale was 0.83) [31].

B. The Self-Harm Inventory (SHI): The inventory was developed by Sansone et al. (1998). It contains 22 items that assess direct and indirect self-injurious behaviors. The response to each item is Yes or No. A no response is scored 0 and a yes response is scored 1. A high score indicates more intensity and frequency of self-injurious behaviors [32]. Lundahl et al. (2021) reported the reliability of the instrument to be 0.74 and 0.78, respectively [33]. In Iran, the inventory was validated by Izakian et al. (2017) and its reliability was estimated as 0.74 through Cronbach's alpha coefficient [34].

Procedure

A list of public high schools for girls in District 4 of Tehran was taken from the regional education department. Since this study was conducted during the COVID-19 epidemic, required arrangements were made with the school teachers through the principals, and the instruments were completed by the selected students in the Student Educational Network (SHAD), an educational platform launched by the Ministry of Education to organize the students' distance learning. The teacher in each class helped students answer the items in the two instruments. After screening 300 students of five schools, a total of 85 students who met the inclusion criteria were students in 6 classes. Afterward, 45 students were random blocking approach assigned to three equal groups, each with 15 students. The students in the two intervention groups attended compassion-focused therapy and positive-oriented therapy sessions 2 days per week. The students in the compassion-focused therapy group attended the intervention sessions on Mondays and Wednesdays from 6 to 7 p.m. and the students in the positive-oriented therapy group attended the intervention sessions on Sundays and Thursdays from 6 to 7 p.m. [35]. All of session due to Covid-19 outbreak held on the internet by Shad system that implement by Education ministry in Iran. The content of the intervention programs is displayed in Tables 1 and 2.

Table 1: The Content of the Compassion-Focused Therapy Sessions

Sessions	Content
1	Establishing therapeutic relationships, introducing the group members, defining self-harm and psychological vulnerability, and conceptualizing compassion-focused therapy
2	Teaching the group members to approach things with an empathic attitude and practice empathy
3	Creating more and more diverse feelings in connection with the group members' issues to make them pay more attention to their health and happiness
4	Accepting one's and others' mistakes and forgiving them to speed up changes
5	Accepting the upcoming changes and enduring challenging conditions due to changes in life and people facing different challenges
6	Increasing the members' knowledge about body image and creating valuable and sublime feelings so they can deal with the living environment efficiently.
7	Teaching responsibility as one of the aspects of compassion-focused therapy to create new and efficient feelings and create satisfaction in the members
8	Teaching compassion skills to the members in the areas of compassionate attention, compassionate reasoning, compassionate behavior and imaging, compassionate feeling, and perception.
9	Reviewing the exercises of the previous sessions and helping the members to play the role of the critic, criticized, and compassionate self
10	Reviewing the exercises of previous sessions to help the members use various strategies to cope with different and changing life conditions, and administering the posttest

Table 2: The Content of the Positive-Oriented Therapy Sessions

Sessions	Content
1	Introducing the elements of the training program (the therapist, the clients, and frameworks) to make the group members familiar with the process and goals
2	Identifying personal capabilities and using them, implementing relaxation techniques
3	Asking the members to remember three positive events/blessings (a dairy of blessings)
4-5	Personal legacy and thank you letters and visits
6-7	Responding actively and constructively, doing tasks calmly (avoiding haste)
8	Utilizing distinct strengths in new ways along with enjoyable understanding and grading of optimism and optimistic thinking and optimistic thinking assignments
9	Reviewing the content of the previous session, rating the level of hope and discussing hope, and writing about the best possible self in the future
10	Reviewing the content of the previous session, administering the post-test

As a requirement to comply with the ethical protocols and protect the participants' rights, the researcher provided the participants with some information about the objectives of the study and the research procedure. The participants were ensured that their participation would be voluntary and they could leave the study if they wished so. They were also assured that their personal information would remain confidential and that research data would be published anonymously. After signing an informed consent form, the participants responded to the items in the self-report questionnaires administered to them in the pre-test and post-test stages. At the end of the interventions and data analysis procedure, five free intervention sessions were held for the students in the control group and they were motivated to attend the sessions. The protocol for this study was approved under the code of ethics IR.IAU.ARAK.REC.1400.007 by the Islamic Azad University, Arak Branch. The data collected were analyzed through multivariate analysis of variance (MANCOVA) and Bonferroni post hoc test with SPSS software 26.

Results

Table 3 shows the demographic data for the participants in the three groups.

Table 3: The Descriptive Statistics for the Participants' Demographic Data

Variable	Categories	Compassion-focused therapy group	Positive-oriented therapy group	Control group
		Frequency (%)	Frequency (%)	Frequency (%)
Students' educational level	10th grade	5 (34%)	4 (26%)	5 (34%)
	11th grade	6 (40%)	7 (48%)	6 (40%)
	12th grade	4 (26%)	4 (26%)	4 (26%)
Parental education	Academic	4 (26%)	5 (34%)	5 (34%)
	Non-academic	11 (74%)	10 (66%)	10 (66%)
Parental occupation	Public employee	3 (20%)	4 (26%)	2 (13%)
	Self-employed	12.80(%)	11 (74%)	13 (87%)
History of self-harm in late 6 months	Once	11 (74%)	12 (80%)	12 (80%)
	Twice and more	4 (26%)	3 (20%)	3 (20%)
Age	Student's age	17.00±5.19	17.12±6.08	17.09±5.87
	Parents' age	44.93±8.16	44.25±5.81	45.03±7.10

Table 4 shows the descriptive statistics for the body image and its subscales in the three groups:

Table 4: The Descriptive Statistics for the Body Image and its Subscales

Variable	Group	Number	Pre-intervention scores	Post-intervention scores
			Mean ± SD	Mean ± SD
Appearance Evaluation	Compassion-focused therapy group	15	12.55±0.85	14.20±1.22
	Positive-oriented therapy group	15	11.89±1.18	16.83±3.45
	Control group	15	10.24±0.62	10.11±1.17
Appearance orientation	Compassion-focused therapy group	15	11.59±1.25	10.14±1.61
	Positive-oriented therapy group	15	11.00±1.77	9.87±1.43
	Control group	15	11.34±2.10	11.40±1.38
Body Areas Satisfaction	Compassion-focused therapy group	15	9.12±0.67	12.44±2.18
	Positive-oriented therapy group	15	7.19±0.43	13.56±1.32
	Control group	15	10.02±1.15	9.98±1.10
Fitness orientation	Compassion-focused therapy group	15	13.50±1.50	9.00±0.49
	Positive-oriented therapy group	15	14.14±1.39	10.17±1.65
	Control group	15	13.16±1.76	12.89±1.45
Preoccupation with weight	Compassion-focused therapy group	15	14.71±2.56	11.45±0.23
	Positive-oriented therapy group	15	13.96±4.13	10.00±1.89
	Control group	15	11.39±2.65	11.14±1.87
Self-Classified Weight	Compassion-focused therapy group	15	10.19±1.23	17.63±0.55
	Positive-oriented therapy group	15	12.45±2.66	14.34±3.00
	Control group	15	12.49±4.78	11.99±2.18
Multidimensional body-self relations	Compassion-focused therapy group	15	71.66±8.06	73.86±7.28
	Positive-oriented therapy group	15	70.63±11.56	74.77±12.74
	Control group	15	68.64±13.06	67.51±9.15

Multivariate analysis of covariance (MANCOVA) was run to compare the participants' scores in the three groups. The assumptions for MANCOVA were checked using Kolmogorov–Smirnov test, Levene's test and Box's M test. Since the results were not significant, MANCOVA was run as shown in Table 5:

Table 5: MANCOVA Results for the Participants' Body Image and its Subscales

Dependable variables	Sum of squares	df	F	P-value	Effect size	Test power
Appearance Evaluation	26.349	1	18.37	0.001	0.620	0.996
Appearance orientation	56.762	1	0.99	0.001	0.599	0.996
Body Areas Satisfaction	34.189	1	11.87	0.001	0.659	0.996
Fitness orientation	11.923	1	15.68	0.001	0.603	0.996
Preoccupation with weight	67.730	1	23.04	0.001	0.540	0.996
Body satisfaction	109.723	1	16.69	0.001	0.613	0.996

The MANCOVA results in Table 5 show that the intervention programs (positive-focused therapy and compassion-focused therapy) (by controlling the pre-test effect as a confounding factor on the post-test) significantly improved each dimension of multidimensional body-self relations.

Table 6: The Results of MANCOVA

Test	Statistic	F-value	Sig.	Effect size	Test power
Pillai's trace test	0.987	81.472	0.001	0.687	1.000
Wilks' lambda test	0.083	81.472	0.001	0.687	1.000
Hotelling's trace test	74.062	81.472	0.001	0.687	1.000
Roy's largest root	74.062	81.472	0.001	0.687	1.000

As shown in Table 6, the Wilks' lambda (F=81.472; P=0.001) is significant. After controlling the pretest effects, the results indicated a significant difference between the participants in the intervention groups and the control group in terms of the variables after the intervention. Accordingly, it can be suggested that there is a significant difference in at least one of the dependent variables. The effect size shows that 68.7% of the differences between groups could be attributed to the effect of the intervention programs. Thus, an issue of interest is whether the dependent variable (body image) is affected separately from the independent variable (two intervention methods, i.e. positive-oriented therapy and compassion-focused therapy). To this end, the multivariate analysis of covariance (MANCOVA) was run as shown in Table 7:

Table 7: MANCOVA Results for the Dependent Variables on the Posttest

Dependable variables	Sum of squares	df	F	P-value	Effect size	Test power
Multidimensional body-self relations	2787.877	1	72.343	0.001	0.574	1.000

The MANCOVA results in Table 7 indicate that the intervention programs (positive-focused therapy and compassion-focused therapy) (by controlling the pre-test effect as a confounding factor on the post-test) significantly affected the participants' body image.

Table 8: Bonferroni test to Compare the Participants' Mean Scores in the Three Groups

Variable	Group	Positive-oriented therapy group		Compassion-focused therapy group		Control group	
		Mean difference	Sig.	Mean difference	Sig.	Mean difference	Sig.
Body image	Positive-oriented therapy group	-	-	1.009	0.322	3.088	0.01
	Compassion-focused therapy group	-1.009	0.322	-	-	2.660	0.001
	Control group	-3.088	0.001	-2.660	0.001	-	-

The data from the Bonferroni post hoc test in Table 8 indicate that both positive-oriented therapy and compassion-focused therapy were effective on the dependent variable in the post-test phase. However, there was no significant difference between the impact of the two therapies on the participants' self-image (P=0.05).

Discussion

The present study compared the effectiveness of positive-oriented therapy and compassion-focused therapy in improving the body image perceived by female adolescents with a history of self-harm. The results indicated that both therapies significantly improved the favorable body image in female adolescents with a history of self-injury. Similarly, Lewis reviewed 24 studies that addressed the impact of compassion-focused therapy on body image. The findings showed that this therapy consistently encourages people to be more kind and also receive compassion from others [36]. Thus, it can reduce concerns related

to body image and eating disorders. In an experimental study, the researcher examined the effect of weekly self-compassionate letter writing on body image concerns. The results showed that self-compassion-focused therapy improved women's self-compassion and self-esteem and reduced their concerns about their body image [36]. Moreover, Wasylkiw et al. concluded that there is a relationship between self-compassion and self-esteem with body image in women. Thus, a high level of self-compassion in people leads to fewer worries about their body image [37].

Recent studies have suggested that positive body image with variables such as body appreciation should protect the body against threats. Self-compassion may be one such variable. People with a higher level of self-compassion tend to act more consciously, kindly, and carefully when their capabilities are threatened. As a result, self-compassion has an inverse relationship with the lack of physical appreciation and physical threats in people. Thus, self-compassion may help maintain an appreciation of women's bodies during body-related threats [38]. In another study, women who participated in a self-compassion meditation training program reported less body image distress (BID) after completing the program [39]. Amy et al. (2020) showed that the body image of young female participants improved after practicing self-compassion meditations. The results showed that, after completing the treatment sessions, women in both meditation groups showed a significant increase in self-compassion and body appreciation and a significant decrease in body shame [40]. Another study examined the effectiveness of self-compassion and self-esteem writing tasks in reducing body image concerns. The results showed that the young female students in the intervention group showed more self-esteem and fewer body image concerns compared to the control group [41]. Positive-oriented therapies provide them with a better sense of body image by creating hope and happiness in adolescents. These therapies help people to respect their bodies and appreciate their appearance. Those therapists also reduce negative feelings toward body image [42].

Van Vliet and Genivieve indicated that the Compassion-focused therapy (CFT) could be useful for adolescents with non-suicidal self-injury (NSSI). CFT is a form of cognitive-behavioral therapy designed to help persons relate to themselves with greater compassion, warmth, understanding and kindness. for this reason, Compassion-focused therapy (CFT) is helpful psychological intervention for people with non-suicidal self-injury [43]. In addition, Nawaz et al. (2021) showed that psychological interventions and can be effective in reducing self-injurious behaviors and it is better to use these interventions continuously [44].

Overall, self-compassion leads to fewer emotional problems in people. It also leads to lower levels of self-harm or suicidal thoughts. Lack of self-compassion promotes highlighting negative life events and increases self-injurious behaviors in adolescents [2]. Besides, having a positive attitude towards life helps people to deal with life's problems properly.

There were limitations in conducting this study. Since this study was conducted during the COVID-19 epidemic and given the requirements for compliance with health protocols, the meetings were held online. Thus, the interventions could be less effective compared to face-to-face programs. Moreover, due to the spread of the Coronavirus, it was not possible to conduct a follow-up phase to check the retention effects of the interventions. Thus, researchers interested in this field can examine the effectiveness of the two therapies among other adolescents with self-harm behavior (tendency to consume drugs and alcohol, high-risk driving, early sexual relations, etc.). The results of the present study also showed that treatment programs were effective in increasing the empathy of female adolescents with a history of self-injury. Thus, this group of clients' needs to receive psychological services in addition to pharmaceutical and medical treatment in health centers.

Conclusion

This study compared the effectiveness of compassion-focused and positive-oriented therapies in improving body image in female adolescents with a history of self-injury. The results showed that both therapies can lead to an increase in body image in female students. Given the cost-effectiveness and efficiency of these interventions in groups and schools, they can be

implemented in schools and educational centers for awareness-raising and preventive purposes.

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Conflict of interest
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