Research Paper

Effectiveness of the Strength-based Intervention on Subjective Well-being and Psychological Capital in Female Students With the Oppositional Defiant Disorder

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ABSTRACT

Background: It is important to recognize and use the strengths of children with oppositional defiant disorder (ODD). This study assessed whether strength-based intervention is effective on subjective well-being and psychological capital in children with ODD.

Methods: This research was a quasi-experimental study with a pre-test and post-test design with a control group. The statistical population included 30 students with ODD in discreet six, which were selected through multi-stage clustering in Tehran during the academic year 2022. Then, the individuals were randomly assigned to the experimental and control groups (each group: n=15). The subjective well-being and Luthans' psychological capital (PCQ) questionnaires were administered. For the experimental group, a strength-based intervention was administered in eight sessions of 75 minutes per week, while the control group received no treatment. The data were analyzed using MANOVA and SPSS software, version 26.

Results: The strength-based intervention had positive effects on subjective well-being ($F_{1, 28}$=23.42, P<0.001) and psychological capital ($F_{1, 28}$=28.12, P<0.001) in children with ODD.

Conclusion: This type of approach builds on clients' strengths, seeing them as resourceful and resilient when they are in adverse conditions. This study encourages new evidence for the efficacy of a strength-based intervention.

Keywords: Strength-based, Psychological well-being, Female, Students, Oppositional defiant disorder

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1. Introduction

An individual with oppositional defiant disorder (ODD) exhibits recurrent patterns of aggressive, defiant, disobedient, and hostile behavior toward authority figures for at least six months [1, 2]. A lifetime prevalence of 10.2% and a prevalence of 0.4 to 13.4% in different countries indicate ODD as one of the most prevalent disorders from preschool age [3]. The ODD list included ten items that covered irritable, headstrong, and hurtful factors, but did not include spiteful symptoms and included symptoms that were not listed in the Diagnostic and statistical manual of mental disorders. 5th (DSM-5) as ODD symptoms (such as ignoring parents and supervisors, destroying or damaging others' property, and insulting peers) [2]. Subjective well-being (SWB) and irritability are closely related. There is an association between irritability and mental disorders, such as social adaptive disorders and mood disorders [4, 5]. Thus, irritability may predict some aspects of SWB for ODD adolescents [6].

SWB assessments of ODD children are rarely considered when investigating and monitoring children's situations. SWB is a multi-layered and multidimensional construct consisting mainly of life satisfaction and emotional experiences (positive and negative emotions) [7]. However, in reality, the concept of SWB includes a range of more specific judgments that a person makes about different aspects of his life situation and different areas of his life [8]. According to interpersonal perspectives of psychological symptoms, ODD children's poor interpersonal relationships often play a critical role in the process of how children's behavioral problems develop into severe emotional outcomes, which reflect dysfunctional regulation of emotional processes, including aggression, moodiness, and negativity [9].

Moreover, these behavioral difficulties cause the absence of adequate psychological support from peers and family, exacerbate their hostility and lower their SWB [10]. Children with ODD can develop emotional disturbances, conduct disorder (CD), and antisocial personality disorder in adulthood [11]. Previous findings reveal the importance of focusing on ODD children's feelings of happiness as well as depression and highlight the critical role of improving interpersonal functioning for children with ODD in protecting children from developing emotional impairments. Moreover, among all interpersonal relationships, the high quality of the father-child relationship needs to be most valued for Chinese families of children with ODD [9]. Furthermore, another study found that ODD is associated with lower quality of life across a variety of domains [12].

Student psychological capital (PsyCap) may be a promising area of further investigation for schools, policymakers, clinicians, and researchers to identify positive psychological resources in youth that may buffer poor mental health and promote well-being [13]. PsyCap currently comprises four constructs: hope, efficacy, resilience, and optimism, which are commonly ascribed to the acronym hope, efficacy, resilience, and optimism (HERO) [14]. The theoretical underpinnings of PsyCap are rooted in positive psychology and stress research. More specifically, PsyCap adopts Fredrickson's broaden-and-build theory, which asserts that the experience and awareness of positive emotions broaden an individual's thought-action repository, from which psychological resources are built [13, 14]. Fukushima et al. examined the moderating effects of PsyCap at the individual and community levels and found that PsyCap at the community level regulates psychological happiness [15]. Also, PsyCap may indirectly affect an individual's behavior and state through intermediate variables [16].

This disorder is more common in boys than girls before puberty, but after puberty, the sex ratio is likely to be equal. Girls are more likely to be diagnosed with ODD, while boys are more likely to be diagnosed with CD [17]. It was found that girls with ODD/CD had higher rates of comorbid mental health problems than boys with ODD/CD in a Finnish study of inpatient adolescents [18]. In another study performed by Munkvold et al., boys and girls with symptomatic ODD were more likely to have co-occurring emotional symptoms, hyperactivity, inattention, and peer difficulties than their peers without symptomatic ODD. As a result, the authors' findings are inconsistent with the gender paradox hypothesis, which holds that girls with ODD are more likely to have co-occurring mental health difficulties compared to boys [19]. Considering that there are some clinical differences between boys and girls regarding ODD, it is critical that the patient's gender is considered when identifying and treating this disorder [20].

Therefore, it is crucial to pay attention to the variables that promote PsyCap and SWB in this group of children, before they become problematic difficulties for their families and communities. Psychosocial maladjustment may eventually result from untimely interventions if internalization and externalization issues are not addressed promptly. These studies underline the importance of structured early interventions, such as strength-based intervention ones [21], useful to promote learning and scholastic well-being. Indeed, they are more vulnerable and at risk for school failure, and can develop psychological illnesses in comparison with typically develop-

ing peers. This research is based on a broad concept of human strengths, based on which the use of any strength can cause human well-being and strengthen self-esteem [22]. In addition, this conception emphasizes that various strengths should be observed simultaneously and in interaction with each other [23]. Selvaraj et al. indicated that developing positive psychological strengths, such as hope, efficacy, resilience, and optimism within college students significantly increased their positive mental health [22].

In a study, the strength-based student guidance was implemented among ninth graders, and in the test group, the student's scores in PsyCap, strengths, and resources, as well as student guidance increased positively and were more than in the control group. A statistically significant change was found in the test group regarding their strengths and resources, and a very significant change in the experience of student guidance was observed [23]. Luthans et al. (2010) pointed out that increasing positive expectancy could develop optimism. In strength interventions, participants were encouraged to reflect on their past successes and thereby expect more positive outcomes in the future [24]. Snyder (2000) proposed that hope is developable by improving people's processes of goal setting; thus, they are able to overcome obstacles by anticipating them and making new plans. In strength interventions, participants will improve their goal-setting and anticipatory abilities by working on their future action plan outlining how they will use their strengths more to become better and overcome obstacles [25].

According to the literature review, the impact of PsyCap and SWB among children with ODD has not been extensively studied to prevent the onset of psychopathological and chronic diseases with serious general effects on people [23-25]. Moreover, most studies have considered mothers' and families' mental health [26] and used parenting behavior management training's effect on mothers in reducing oppositional and aggression symptoms in their children with ODD [27]. Most studies have examined the problems that this group causes, but a few studies have examined the mental health of this group. Additionally, the majority of studies have concentrated on males, for whom this disorder seems to be most prevalent, while they have ignored females. This research was done to assess whether training strength-based intervention can have positive effects on SWB and PsyCap among girls with ODD.

2. Methods

This research was a quasi-experimental study with a pre-test and post-test design with a control group. The statistical population included students with ODD studying in a guidance school in district six in Tehran during the academic year 2022-2023. A multi-stage clustering method was used for sampling. The sample size consisted of 20 students with ODD per group, based on G-Power software with an effect size of 0.95, an alpha of 0.05, and a test power of 0.90. However, during the process of intervention and completion of the post-test, some were excluded from the study. Inclusion criteria included having ODD (introduced by the teacher and counselors and DSM-5 criteria for ODD), the age of 13-15 years, attending the first and second years of guidance school, the consent of students and parents to participate in the study, and no acute or chronic physical and psychological disease (according to their health records and counseling). In addition, exclusion criteria included absence in two training sessions, lack of cooperation, and failure to perform the tasks specified in the educational course.

In the present study, the following research tools were used:

Subjective well-being questionnaire

This questionnaire was designed by Keyes and Magyar-Moe [28] and includes three sub-scales: emotional well-being (12 items), psychological well-being (18 items), and social well-being (15 questions). Items refer to all of the various types of evaluations, both positive and negative, that people make about their lives. It includes reflective cognitive evaluations, such as life satisfaction and work satisfaction, interest and engagement, and affective reactions to life events, such as joy and sadness. The correlation of this questionnaire with the happiness questionnaire of Lyubomirsky and Lepper [29] was equal to 0.78 and with its subscales, which include emotional well-being, psychological well–being, and social well-being respectively equal to 0.76, 0.64, and 0.76. Internal consistency of the questionnaire based on Cronbach's α coefficient was equal to 0.80 and that of its subscales was respectively equal to 0.86, 0.80, and 0.61 [30].

Luthans's psychological capital questionnaires (PCQ)

The PCQ was developed by Luthans and Avolio [31]. It consists of four subscales of self-efficacy, hope, resilience, and optimism. Each subscale includes six items and each item is measured on a six-point Likert scale (strongly disagree to strongly agree: Zero to five). To

measure the PsyCap score, we initially measured each sub-score separately and then the total score was calculated by the sum of these scores. The minimum and maximum attainable scores range from zero to 120. Farrokhi and Sabzi calculated the correlation of each subscale score with the total score to determine the validity. They reported that the coefficients of self-efficacy, hope, resilience, and optimism were 0.84, 0.78, 0.66, and 0.65, respectively. The coefficient of the total scale was 0.89, which indicated the optimal reliability of the scale [32]. According to the current research, Cronbach's α coefficient of self-efficacy, hope, resilience, and optimism scales were 0.82, 0.83, 0.70, respectively, and 0.71 and the total scale was 0.84.

Intervention program

To implement the study, District Six of Education in Tehran was randomly selected by referring to the Tehran Education Department. After the random selection of four middle schools in the selected district, they were grouped by grade. Teachers and counselors then introduced students to the symptoms of ODD, which are described in the DSM-5. A total of 106 students from the selected schools were introduced in the first stage. The student's parents were invited to attend the meeting to ascertain whether their children had ODD. Approximately 55 students were diagnosed with ODD after the screening. Forty students were randomly divided into two experimental groups and a control group (n=20 in each group). After selecting the sample size, the pre-test step was implemented on the individuals. Then, they were randomly (a random number table) assigned to the experimental and control groups (n=20 per group) (Figure 1). Before implementing the protocol, as a pre-test, the questionnaires were applied. Then, the experimental group received strength-based intervention during eight 75-minute training sessions per week, by a clinical therapist, while the control group did not receive any intervention. After the intervention sessions, the individuals in both groups completed the same questionnaires again. It should be noted that in the present

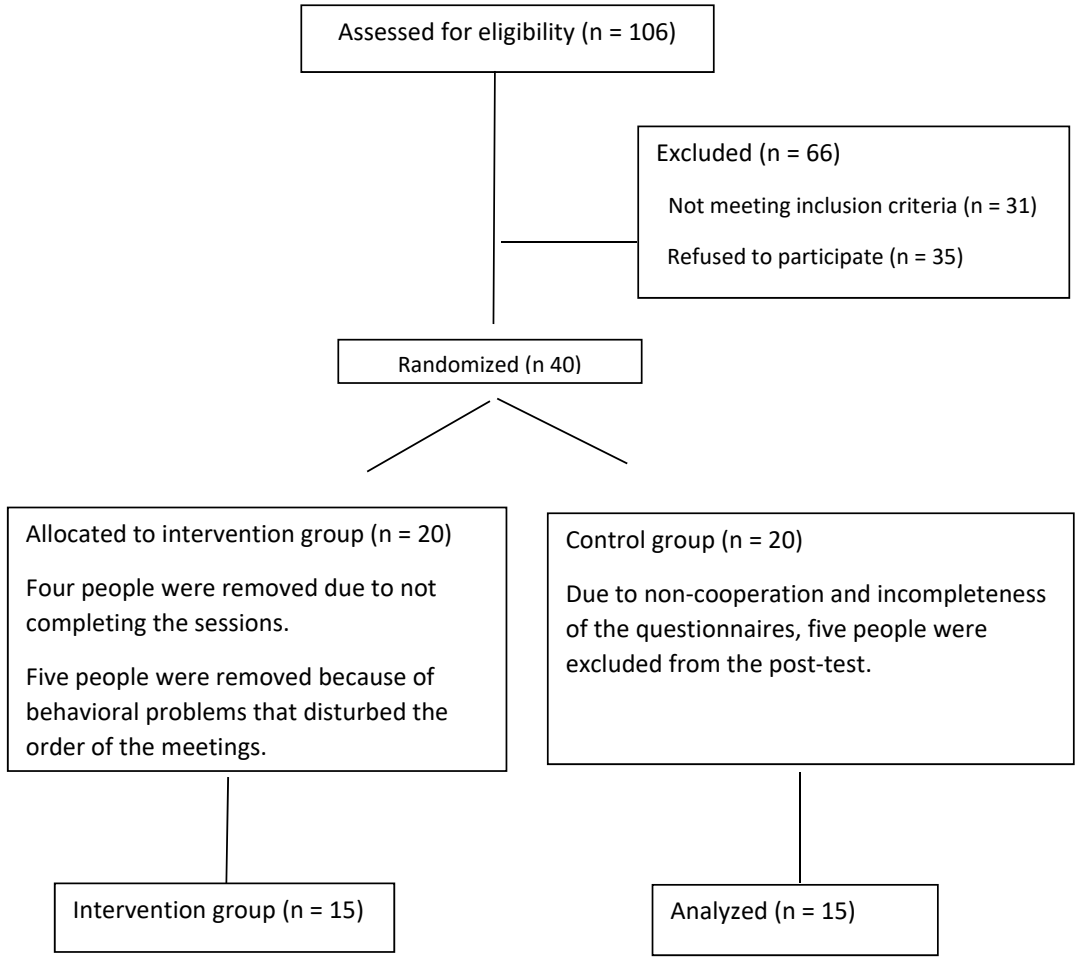

Figure 1. Consort model

study, a strength-based teaching protocol [33] was used. To adhere to ethics in the study, the consent of students was gained to participate in the intervention program, and they were informed of all steps of the intervention. In addition, the control group was assured that would receive the intervention after the research process. Finally, the intervention of the experimental group was done based on Table 1.

Statistical analyses

In this study, the Kolmogorov-Smirnov test was used to evaluate the normal distribution of variables, Levene's test was used to examine the homogeneity of variances, and regression analysis was used to examine the slope of the regression line. Eventually, the analysis of the covariance (due to the separation of the effect of pre-test scores) was used to evaluate the effectiveness of teaching strength based on the PsyCap and SWB of the students with ODD. Statistical results were analyzed using SPSS software, version 26.

3. Results

There were 106 school students involved in the study. The final sample comprised 30 students from grades seven to nine. The average age of the experimental group was 13.71±1.05 years and that of the control group was 13.43±1.30 years. The populations ranged from 13 to 15 years of age (48% aged 13 years, 32% aged 14 years, and 20% aged 15 years). Approximately two people (6.66%) had a very poor economic situation, three people (10%) had a poor economic situation, seven people (33.23%) had an average economic situation, seven people (33.23%) had a good economic situation, and 11 people (66.36%) were in very good economic status. The proportion of children living with both parents was approximately 83%, 7% of them with both their mothers and fathers and 10% with just their mothers.

As shown in Table 2, the mean SWB score for experimental and control groups in the pre-test was 83.15±8.34 and 85.66±8.09 and in the post-test was (89.27±8.46), (86.12±7.38), respectively. Also, the mean PsyCap score in the experimental and control groups in the pre-test was 71.32±7.65 and 70.43±7.41 and in the post-test was 93.26±7.65 and 71.13±6.54, respectively.

There was a significant correlation between the pre-test and post-test SWB (r=0.83) and PsyCap (r=0.77) in children with ODD (P<0.05 for both). According to the obtained data, the assumption of linearity was established for both SWB and PsyCap variables of children with ODD. Moreover, Levene's test result was insignificant for SWB and PsyCap ($F_{1, 28}$=0.91, P=0.16 and $F_{1, 28}$=1.08, P=0.12, respectively). Therefore, the assumption of homogeneity of variances was confirmed. The significance level for Kolmogorov–Smirnov's test was greater than 0.05, which supports the assumption that the distribution of variables is normal.

The experimental and control groups had significant differences based on the dependent variables at a level of P<0.001 (Table 3). Thus, it was possible to conclude

Table 1. Lesson plan for the strength-based intervention [25]

Sessions	Content
1. Character strengths	Introduction and definition of character strengths. Why are the character strengths useful? Familiarization with character strengths. Before the training, participants were asked to complete a preparatory assignment to discover their three most dominant strengths (strength identification). After the value-in-action (VIA) test via character.org, everyone marks down their five signature strengths. Interpreting VIA test results: What kind of positive feedback have you received at home or school? How would others describe your character? Which characteristics do you appreciate in yourself?
2. Talents	Which cartoon or fiction figure is like you?
3. Skills	Familiarization with talents. To this end, they received a stack of strength cards with 24 strengths applicable in the working context and some blank cards that could be filled individually.
4-6. Values	Using these cards and several guiding questions that could be answered individually or by a third person, participants were triggered to search for their talents. Which task do you find easy to accomplish? Working with the cards in pairs. As a homework assignment, we asked participants to choose a partner who would check one's progress concerning using and developing individual strengths.
7. Resources	Search your own skills task. Group discussion about skills one has learned during life from others and in different contexts. Skills appreciated at work, using future work skill pictures.
8. Interests	The most important thing in my life is a task. Familiarization with values: Own values. Naming one's own three most important values. Value practices. Contemplation task: What do you value and find meaningful and essential, worth investing in? What kind of person would you like to be? What do you want to accomplish in life?

Table 2. Mean±SD of variables in the experimental and control groups in the pre-test and post-test stages

Variables	Groups	Mean±SD	
		Pre-test	Post-test
Subjective well-being	Experimental	83.15±8.34	89.27±8.46
	Control	85.66±8.09	86.12±7.38
Psychological Capital	Experimental	71.32±7.65	93.26±7.65
	Control	70.43±7.41	71.13±6.54

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that at least one of the dependent variables (SWB and PsyCap) differed significantly between the two groups.

In Table 4, the F statistic is significant for SWB (P<0.001, $F_{1, 28}$=23.42) and PsyCap (P<0.001, $F_{1, 28}$= 28.12). These results indicate that there are significant differences between groups. Therefore, -the strength-based intervention was effective and increased SWB and PsyCap children with ODD. Also, the largest effect size was determined by the PsyCap variable (0.783), which indicates that 78% of the variance between the experimental and control groups in the levels of PsyCap variability was the result of the independent variable (strength-based intervention). Thus, the lowest effect was related to SWB in children with ODD (0.668), indicating that 67% of the total variance was attributed to an independent variable (strength-based intervention).

4. Discussion

The main aim of this study was to assess whether strength-based intervention is effective on SWB and PsyCap in children with ODD. Overall, the results agreed with the main objective of the study and confirmed the proposed question. Samples demonstrated significant increases in SWB and PsyCap after finishing the strength-based intervention. Numerous studies [21, 34] have demonstrated the positive effects of strength-based interventions on SWB and PsyCap in different sample groups. However, Katajisto et al. [21] found a significant change in the test group regarding strengths and resources and a very significant change in the experiences of students and reported that it is possible to increase PsyCap through strength-based guidance. Morris et al. [34] identified the experiences of educators attempting to improve strength-based practice while identifying the challenges of pursuing that goal in the post–COVID-19 educational change. Studies on children with ODD have used other approaches to increase useful interpersonal

Table 3. Results of multivariate analysis of covariance (MANCOVA) on variables

Test Statistic	Value	F	df	df Error	P	Effect Size	Eta
Pillai's Trace	0.852	72.36	2	28	0.001	0.64	1
Wilks' Lambda	0.148	72.36	2	28	0.001	0.64	1
Hotelling's Trace	5.74	72.36	2	28	0.001	0.64	1
Roy's Largest Root	5.74	72.36	2	28	0.001	0.64	1

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Table 4. Results of analysis of covariance in the MANCOVA context

Dependent Variable	Source	Type III Sum of Squares	df	Mean Square	F	P	Eta
Subjective well-being	Group	8341.39	1	8341.39	23.42	0.001	0.668
Psychological Capital	Group	1802.21	1	1802.21	28.12	0.001	0.783

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relationships and increase SWB, PsyCap, and social competence.

Zabihi Hesari et al. showed that social skill training significantly led to an increase in SWB and social competence, and a decrease in alexithymia in children with ODD [35]. Farazmand and Aghapour found that cognitive-emotional training can be effective in enhancing PsyCap in students with ODD by integrating social and emotional techniques [36]. These findings are also in line with Javaheri's research, indicating that introductions and interventions to increase PsyCap in students can help them have more effective problem-solving strategies [37]. Suranata et al. compared the use of cognitive behavior with strength-based approaches to increase resilience and recommended integrating cognitive behavior and strength-based approaches [38]. By creating an optimistic perspective and avoiding thoughts that cause negative emotions [39], and focusing on individual strengths [36], a strengths-based approach to psycho-education may be an effective way to increase PsyCap in students.

To explain these findings, a strength-based approach is growing along with the development of science in the field of positive psychology, which is followed by research on human strength and factors related to mental health and well-being [40]. PsyCap comprising the positive psychological resources of HERO has strong empirical associations with increased well-being and reduced mental health symptoms in adult samples [24]. In other words, when well-being is higher among samples, their higher levels of PsyCap were more strongly related to lower levels of depressive symptoms. Positive psychological strengths, such as resilience and hope may help individuals to cope with emerging challenges and foster mental health and well-being [41]. The strength approach is full of these variables and is defined as something that helps individuals to overcome challenges in life (resilience) or something that makes life more satisfying for themselves and others (a combination of hope, efficacy, resilience, and optimism). The recognition and development of individual strengths occur through a process of internal dialogue. This internal dialogue process occurs through a process of self-monitoring and self-assessing/judging and leads to the recognition or neglect of the strengths. Individual strengths are not fixed traits but grow from a dynamic process. This strengths-based approach has the advantage of focusing on strengths rather than problems, helping individuals to have a mindset that they have control over certain situations and do not place themselves as victims of the situation [42]. The most important thing under this approach is familiarization with personal values to overcome challenges. There are, however, several factors that may influence the results of this study. The first factor is the fact that the test group interacted face-to-face, which resulted in a more cohesive atmosphere. Students have engaged optimally in psycho-educational activities using worksheets and reflection sheets, which were intended to increase their involvement. In addition, strength-based approaches need to go beyond identifying strengths and explore how individuals can use them in their contexts, especially to strengthen PsyCap, through the use of a strength-based approach.

The Strength approach emphasized the value of individualizing experiences for ODD children, reducing feelings of isolation, and encouraging the development of ODD children's strengths. These findings support the claims made by Carmona-Halty et al. that positive relationships with educators cultivate positive well-being in students. Additionally, to some degree, this may be attributed to the internal, personal positive psychological resources or strengths possessed by individuals, such as hope, self-efficacy, resilience, and optimism [43]. Developing PsyCap enables persevering toward goals and redirecting paths when necessary (hope), making a positive attribution about now and the future (optimism), sustaining and bouncing back and even beyond when beset by problems and adversity (resilience), and having the confidence to engage in the necessary effort to succeed at challenging tasks (efficacy) [44]. When the students' levels of well-being are high, the association between PsyCap and psychological distress can be strengthened because when they act using an optimal state of mental health, they have a better psychological capacity to fully take advantage of PsyCap to reduce their anxiety, depression, and stress [45].

5. Conclusion

An approach based on strengths significantly increased the SWB and PsyCap of children with ODD. This topic may be further explored in future research, focusing on how to use PsyCap based on individual strengths. In recent years, strength-based approaches have become increasingly popular. These approaches are based on positive psychology theories. A scientific study was conducted to determine the impact of this intervention on children who suffer from ODD for the first time. There is still a lot of research to be done on its use.

Nevertheless, this study had some limitations, such as a small sample size. In the future, the sample size should be increased, and the gender distribution should be bal-

anced. It is possible that the effect of the intervention was affected by a single district and the city, and the generalizability of the strength-based approach was limited. Additionally, all variables were measured by self-reporting, which could have contributed to common method bias. It was also difficult to verify the duration effect of the intervention because there was no follow-up. It is therefore critical to test the effects of intervention duration in future research on strength-based approaches through follow-ups of one to three months. A placebo effect was not neutralized for the control group.

Ethical Considerations

Compliance with ethical guidelines

The current study was approved by the Islamic Azad University, Rudehen Branch (Code: IR.IAU.R.REC.1401.111).

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Authors' contributions

Conceptualization: Mohsen Ghorbani and Fatemeh Talebi; Methodology, resources, and data duration: Elahe Khodadadi, Fatemeh Sadat Mohtashami and Muhammad Kamran; Formal analysis and writing the original draft: Mohsen Ghorbani and Sahar Froumandi; Supervision: Mohsen Ghorbani, Fatemeh Talebi and Sahar Froumandi; Writing, review, editing: Mohsen Ghorbani and Sahar Froumandi.

Conflict of interest

The authors declared no conflict of interest.

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