

Comparing the Effectiveness of Logotherapy and Mindfulness on Social Adjustment of Soldiers

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ABSTRACT

Objective: The present study was conducted to compare the effectiveness of logotherapy and mindfulness on the social adjustment of soldiers.

Methods: In terms of purpose, this study was applied research and employed a quasi-experimental method with a pretest-posttest-follow-up design along with a control group. The sample members were randomly assigned to two experimental groups and one control group (15 participants in each group). The Bell Adjustment Inventory (1961) was used as the measurement instrument in this study. Based on existing protocols, the required training was provided to the experimental groups, while no intervention was administered to the control group. The data were analyzed using SPSS version 26.

Results: Data analysis showed that both logotherapy and mindfulness had a significant effect on the social adjustment of soldiers ($p < 0.05$). However, no significant difference was found between the effectiveness of these two interventions ($p > 0.05$).

Conclusions: The findings suggest that both logotherapy and mindfulness are effective approaches for improving the social adjustment of soldiers. Since no significant difference was observed between the two methods, both interventions can be used as suitable psychological strategies to enhance soldiers' social adjustment. Therefore, counselors and mental health professionals working in military settings may benefit from applying these interventions to promote psychological well-being and better social functioning among soldiers.

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Introduction

Although adaptation to the environment is considered one of the most important goals of all organismic activity, a new environment with its own specific rules and demands may create maladjustment and incompatibility in all individuals. Soldiers, due to the particular conditions of military life, are especially likely to experience such difficulties (Wood, 2019). Adjustment involves both changing and being changed, and it represents an effort to manage tensions through effective means (Terzio, 2017). Accordingly, adjustment can be understood as a continuous adaptation to change and the establishment of a relationship between the individual and the environment in a way that allows for maximum self-development and social well-being while respecting external realities (Tarazi et al., 2023). Adjustment does not mean mere conformity with the group; rather, it means recognizing that each individual must pursue personal goals within social and cultural frameworks. Therefore, adjustment is a relative concept, and individuals achieve it to varying degrees (Seyedi & Seyedi, 2022).

In addition to adapting to the norms of society as a whole, every individual must also adjust to the group or organization with which they interact (Tarazi et al., 2023). Organizations possess specific rules and norms that distinguish them from other social groups (Farsijani et al., 2022). One of the most important organizations in any society is its defense institutions or armed forces, which operate according to unique regulations and possess distinctive characteristics aligned with their function of protecting society (Marin et al., 2023). Soldiers who enter the armed forces typically differ substantially in their personal characteristics, and when they begin military service, they often show different reactions to this new environment (Elena, 2023).

The military service environment, due to its particular situational demands, may give rise to various maladaptive reactions among soldiers. Therefore, the need for counseling and psychoeducational interventions aimed at enhancing soldiers' adjustment appears unavoidable. In general, military service is considered a difficult period in the lives of young men, and harsh conditions may become even more severe when individuals fail to adapt to their environment, potentially leading to serious consequences such as suicide (Minshall, 2024). Some soldiers experience intense loneliness when confronted with their problems, and this may increase sensitivity to external stimuli, distress, and depression (Plass et al., 2024).

Given the psychological challenges that soldiers experience in military settings, psychological interventions designed to improve well-being and mental health may represent an effective step toward increasing adjustment and, consequently, reducing problems arising from the stressful conditions of military service (Clarke, 2020). In this regard, one intervention that may be particularly useful because of its emphasis on expanding the individual's understanding of the self and the surrounding world is logotherapy (Karmani, 2019). For individuals who have undergone unfavorable circumstances and are experiencing poor psychological states, logotherapy can provide a philosophical perspective through overcoming the past and transcending the transient aspects of life (Costello, 2015). This therapeutic approach, as a distinct branch of existential psychotherapy, is directed toward helping individuals, especially during critical stages of life. Its central assumption is that life possesses unconditional meaning and that this meaning can be found and discovered by anyone, anywhere, and at any time (Heydari & Meshkinyazd, 2020).

Logotherapy seeks to broaden the individual's field of vision so that hidden meaning and value can be recognized within problems and difficulties; as a result, the person becomes more capable of courageously accepting and confronting them (Malik et al., 2023). The goal of logotherapy is to enable individuals to overcome the "tragic triad" of life—pain, guilt, and suffering—so that they can discover their own unique meaning (Rahgozar & Jimenez, 2020). This approach clarifies the boundaries of human freedom and responsibility and can be effective in breaking dysfunctional cycles of psychological distress (Delavari & Nasirian, 2015). Numerous researchers have concluded that meaning in life is a fundamental factor in emotional health and is systematically associated with various psychological dimensions such as personality, physical and mental health, coping with stress and pressure, religion, and religious activities. One of the roots of vulnerability in individuals is meaninglessness and lack of purpose (Lavin et al., 2013). In this therapeutic approach, individuals can become aware of the meaning of life through confronting different forms of existential emptiness. For this reason, logotherapy is especially applicable to people facing difficult tasks, experiencing hopelessness, or trying to cope with the limitations of life (Marco et al., 2022). In practice, logotherapy creates a small world reflecting the real world, in which participants engage with the aim of self-discovery and recognition of shared existential concerns. It is a journey of self-exploration intended to develop the ability to be with one's authentic self,

broaden one's perspective on self and the world, and clarify what gives meaning to present and future life (Wang, 2016).

The results of several studies have shown that logotherapy is effective in increasing social adjustment in different groups (Ejhei et al., 2012). Conditions prevailing in military barracks differ substantially from ordinary life, as individuals face restrictions and deprivations beyond those encountered in normal circumstances. They must not only adapt themselves to these conditions but also strengthen their capacity for endurance during this period. Therefore, the application of logotherapy may have a substantial impact on soldiers' mental health (De-Barg et al., 2020).

Among the interventions that appear capable of promoting soldiers' mental health is mindfulness-based training (Goudarzi et al., 2018). Mindfulness is a form of meditation rooted in Eastern religious traditions and teachings. It refers to being aware of one's thoughts, emotions, feelings, and behaviors, and it is regarded as a specific form of attention (Mousavi et al., 2020). It is also considered a way of being, involving responding to the continuous flow of life events and experiences with patience, openness, and compassion, and doing so consciously rather than impulsively, judgmentally, or reactively toward mental states and processes (Wolf & Serpa, 2019). Mindfulness, through components such as acceptance of reality, presence in the current moment, and avoidance of rumination, pursues goals such as enhancing well-being, increasing awareness of self and environment, and regulating the mind (Shoman-Olivier, 2020).

Mindfulness is an important underlying factor in achieving psychological relief. It is an effective method for quieting both external pressures and internal mental strain. Being mindful means directing one's awareness away from the past and future and toward the present moment. When a person is fully present, reality is perceived in both its internal and external dimensions, and the individual realizes that the mind is constantly engaged in rumination and inner dialogue due to its ongoing judgments and interpretations (Hassanpour et al., 2022). Individuals with higher levels of mindfulness are more aware of their daily activities and become more familiar with the automatic features of their minds, such as the tendency to escape the present moment and become preoccupied with the past and future. They cultivate moment-to-moment awareness, which makes them less vulnerable to psychological harm (Shari et al., 2016). In contrast, individuals with wandering minds tend to lose the ability to perceive reality accurately, focus more on weaknesses

and darker aspects of life, and suffer from unpleasant emotions such as depression and anxiety, ultimately experiencing greater psychological آسیب (Chessin et al., 2016).

Given the accumulated body of knowledge on each of the study variables, the main question of the present research is whether there is a significant difference between the effectiveness of logotherapy and mindfulness in improving the social adjustment of soldiers.

Material and Methods

The present study was applied in terms of purpose and experimental in terms of data collection. It employed a quasi-experimental pretest-posttest-follow-up design with a control group. The statistical population of this study consisted of all soldiers stationed in military garrisons in Shiraz in 2023. Because the purpose of the study was to examine therapeutic approaches among soldiers, a convenience sampling method (non-probability sampling) was used.

The sampling procedure was as follows: after coordination with one of the military garrisons in Shiraz and obtaining the necessary permissions from the relevant unit, 45 soldiers who met the inclusion criteria were selected. They were then randomly assigned to three groups: a mindfulness-based intervention group, a logotherapy group, and a control group, with 15 participants in each group. In the first session, participants received an introduction to the study procedure. Next, the pretest was administered to all groups. The two experimental groups then received the relevant interventions, while the control group received no intervention. After completion of the intervention sessions, all three groups completed the posttest. Two months later, a follow-up assessment was conducted for all groups. Finally, the results of the three assessments (pretest, posttest, and follow-up) were compared.

Inclusion criteria were as follows: age between 18 and 28 years; willingness to participate in the study; ability to read and write; no concurrent psychiatric treatment during the previous 6 months. Exclusion criteria were as follows: absence from more than two sessions; failure to cooperate or complete assigned session tasks; unwillingness to continue participation in the research process.

Interventions

The psychological interventions used in this study were implemented based on two treatment protocols: logotherapy and mindfulness-based training.

Table 1. Logotherapy Protocol

Session	Objective	Activities
1	Identifying initial problems	Introduction, group member acquaintance, and explanation of group rules
2	Reviewing current problems	Review of the expectations and goals of both the participant and the therapist regarding treatment
3	Homework review	Discussion of participants' experiences in carrying out assignments, including difficulties and barriers
4	Reviewing the activity chart	Examination of the activity chart and major life domains
5	Focusing on triggers	Identifying triggers that maintain the dysfunctional anxiety cycle and barriers to activity
6	Identifying negative thoughts	Recognition of negative thoughts and rumination
7	Problem solving	Training in problem-solving skills and avoidance reduction
8	Reviewing secondary issues	Discussion of participants' problems and successes in identifying secondary issues
9	Reviewing previous week's assignment	Increasing participants' awareness of the risk of relapse
10	Relapse prevention skills	Reviewing skills necessary for relapse prevention and extending short-term behavioral activation to other life contexts

Table 2. Mindfulness-Based Training Protocol

Session	Objective	Activities
1	Automatic guidance/automatic pilot	Establishing rapport with group members, introducing mindfulness, explaining session structure and group rules, setting goals, and practicing mindful eating with raisins
2	Awareness of breathing	Reviewing the previous session and homework, explaining correct breathing, and practicing the three-minute breathing space
3	Barriers	Reviewing the previous session and homework, addressing barriers to practice, body scan meditation, three-minute breathing space, and beginner's mind practice
4	Pleasant events	Reviewing the previous session and homework, seeing and hearing meditation, pleasant events calendar, three-minute breathing space, and sitting meditation
5	Unpleasant events	Reviewing the previous session and homework, unpleasant events calendar, walking meditation, and sitting meditation
6	Negative cognitions	Reviewing the previous session and homework, walking meditation, and introduction to negative cognitive patterns
7	Acceptance: thoughts are not reality	Reviewing the previous session and homework, sitting meditation, retelling the story of the king and his three sons, reading the "Guest House" poem, depression-release meditation, three-minute breathing space, and the cinema and train-of-thought metaphors
8	Optimal self-care: planning for the future	Reviewing the previous session and homework, sitting meditation and three-minute breathing space, preparing a list of warning signs and enjoyable activities and skills, reviewing all sessions and exercises, and planning for the future

Measure

Bell Adjustment Inventory: The Bell Adjustment Inventory was developed in 1961. Bell introduced two forms of the questionnaire: one for school and university students and another for adults. In the present study, the adult form was used. The questionnaire consists of 160 items scored on a three-option scale: Yes, No, and I do not know.

Bell (1962) reported reliability coefficients of 0.91 for home adjustment, 0.81 for health adjustment, 0.88 for social adjustment, 0.91 for emotional adjustment, 0.85 for occupational adjustment, and 0.94 for the total test score. The instrument has also demonstrated strong validity

in distinguishing normal from neurotic groups and has shown correlation with the Eysenck Personality Test.

In Iran, the questionnaire was first translated and revised by Bahrami Ehsan (1992) and administered to 200 individuals selected randomly. Its reliability was calculated using Cronbach's alpha based on 80 items covering all measurable sections, including total adjustment, home adjustment, health adjustment, social adjustment, emotional adjustment, and occupational/educational adjustment. The resulting alpha coefficient was 0.89. In the study by Tamannaefar et al. (2013), the questionnaire reliability was reported as 0.92 using Cronbach's alpha.

The items related to different dimensions of adjustment are distributed throughout the questionnaire. Each item is answered by selecting one of the three response options: Yes, No, or I do not know. In this test, only Yes or No responses receive scores. Based on the standardized scoring table, selected responses are assigned either 0 or 1. The individual's adjustment score is equal to the sum of the points obtained from all items. In addition to the total score, scores for each adjustment dimension can also be calculated, indicating the individual's level of adjustment in that domain.

It should be noted that the norms differ for male and female samples. Since the present study included only men, scoring was interpreted as follows: 0-2: very aggressive, 3-6: aggressive, 7-15: average, 16-20: withdrawn and above 20: very withdrawn. In this study, the following items were scored "Yes" = 1: 4, 15, 17, 21, 29, 32, 50, 52, 59, 72, 77, 78, 99, 107, 119, 124, 132, 138, 144, 154. The following items were scored "No" = 0: 8, 37, 44, 63, 68, 83, 94, 102, 114, 128, 148, 158.

Data Analysis

For statistical analysis and data processing, both descriptive and inferential statistics were used. At the descriptive level, frequency, percentage, mean, and standard deviation were calculated. At the inferential level, the Kolmogorov-Smirnov test was used to examine the normality of variable distributions, and Levene's test was used to assess homogeneity of variances. Finally, to compare the effectiveness of logotherapy and mindfulness-based training on social adjustment, mixed analysis of variance (mixed ANOVA) and Bonferroni post hoc tests were employed. All analyses were conducted using SPSS version 26.

Ethical Considerations

The following ethical principles were observed in this study:

In the topic selection stage, originality of the research topic and avoidance of duplication were ensured.

In the literature review stage, scientific honesty and trustworthiness were observed, invalid sources were avoided, and the names of researchers who had previously studied the topic were properly cited.

In the instrumentation stage, attention was given to the standardization of the instrument, removal of ambiguities, consultation with specialists, and preliminary testing of the tool.

In the analysis, reporting, and publication stages, honesty in data analysis, confidentiality of information, integrity in preparing the research report, and acknowledgment of the organization and individuals who contributed to the study were maintained.

Results

Table 3 presents the means and standard deviations of the dependent variable, social adjustment, for the control, logotherapy, and mindfulness groups at the pretest, posttest, and follow-up stages.

Table 3. Means and Standard Deviations of the Dependent Variable in the Control and Experimental Groups

Group	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Follow-up Mean	Follow-up SD
Logotherapy	96.87	9.44	57.40	4.96	58.60	5.12
Mindfulness	97.33	10.72	54.80	7.01	54.47	6.97
Control	97.93	7.63	98.20	7.92	97.80	8.60

As shown in Table 3, there was no substantial difference between the mean scores of the experimental and control groups at the pretest stage. However, clear differences emerged between the experimental groups and the control group at posttest. The descriptive results at follow-up further indicate that, compared with the posttest stage, the mean scores did not change substantially in either the experimental groups or the control group. To determine the statistical significance of these findings, inferential analyses were conducted and are reported below.

Before testing the study hypothesis, the assumptions underlying the analysis were examined. The normality of the data distribution was assessed using the Kolmogorov-Smirnov test. The results indicated that the Type I error rate (p-value) for the study variables was greater than 0.05; therefore,

there was no basis for rejecting the null hypothesis of no difference between the normal distribution curve and the empirical data distribution. Accordingly, the data were considered to be normally distributed.

Analysis of covariance also assumes a linear relationship between the dependent variable and each covariate. To verify linearity between the covariate and the independent variable, the significance level of the covariate must be examined; if this value is less than 0.05, the linearity assumption is considered satisfied. In the present study, the pretest score for social adjustment was considered the covariate and the posttest score the dependent variable. Because the dependent variable showed a significance level below 0.05 across the groups under study, the assumption of linearity was considered met.

To test the research hypothesis, repeated-measures analysis of variance was conducted to compare the scores of the logotherapy and mindfulness groups across the three stages of assessment: pretest, posttest, and follow-up. The results are presented in the following tables.

Table 4. Multivariate Tests for Examining the Null Hypothesis

Test	Value	F	Hypothesis df	Error df	p	Effect Size
Pillai's Trace	0.219	3.789	2	27	0.035	0.219
Wilks' Lambda	0.781	3.789	2	27	0.035	0.219
Hotelling's Trace	0.281	3.789	2	27	0.035	0.219
Roy's Largest Root	0.281	3.789	2	27	0.035	0.219

The results in Table 4 show that all four multivariate tests were significant at the desired level, $F = 3.789$, $p < 0.05$. The reported effect size indicates that approximately 22% of the variance in the variable under study was attributable to the interventions implemented in this research. Based on these tests, which were calculated from the group $\times$ test interaction, the null hypothesis stating that there is no difference between the logotherapy and mindfulness groups across the three assessment stages (pretest, posttest, and follow-up) is rejected.

Table 5. Mauchly's Test of Sphericity

Mauchly's W	Chi-Square	df	Sig.	Greenhouse-Geisser Epsilon
0.189	44.915	2	0.0001	0.552

Because Mauchly's test was significant, the assumption of sphericity was violated. Therefore, the Greenhouse-Geisser correction was used in interpreting the within-subjects effects shown in Table 6.

Table 6. Tests of Within-Subjects Effects for Social Adjustment

Source	Analysis	Sum of Squares	df	Mean Square	F	Sig.
Test	Sphericity Assumed	33268.4	2	16634.2	899.2	0.0001
Test	Greenhouse-Geisser	33268.4	1.105	30116.7	899.2	0.0001
Test $\times$ Group	Sphericity Assumed	82.3	2	41.1	2.2	0.118
Test $\times$ Group	Greenhouse-Geisser	82.3	1.105	74.4	2.2	0.144
Error (Test)	Sphericity Assumed	1035.9	56	18.5		
Error (Test)	Greenhouse-Geisser	1035.9	30.9	33.4		

As shown in Table 6, the Greenhouse-Geisser statistic for the main effect of test was significant, $F = 899.2$, $p < 0.05$, indicating significant differences across the three measurement stages. However, the test $\times$ group interaction was not significant, $F = 2.2$, $p > 0.05$, indicating that there was no significant difference between the logotherapy and mindfulness groups in terms of social adjustment scores over time. Thus, although social adjustment changed significantly across assessment stages, the two intervention methods did not differ significantly in their effectiveness. To identify the specific location of these differences across time, Bonferroni post hoc comparisons were conducted.

Table 7. Bonferroni Test Results for Pairwise Comparisons in the Experimental Groups on Social Adjustment

Comparison Basis	Compared Conditions	Mean Difference	Standard Error	Sig.
Logotherapy Group	Pretest - Posttest	39.467	1.726	0.0001
Logotherapy Group	Pretest - Follow-up	38.267	1.731	0.0001
Logotherapy Group	Posttest - Follow-up	-1.200	0.223	0.0001
Mindfulness Group	Pretest - Posttest	42.533	2.109	0.0001
Mindfulness Group	Pretest - Follow-up	42.867	1.968	0.0001
Mindfulness Group	Posttest - Follow-up	-42.533	2.109	0.0001
Pretest	Logotherapy Group - Mindfulness Group	-0.467	3.690	0.900
Posttest	Logotherapy Group - Mindfulness Group	2.600	2.219	0.251
Follow-up	Logotherapy Group - Mindfulness Group	4.133	2.235	0.075

The Bonferroni post hoc results presented in Table 7 indicate that, within the logotherapy group, there were significant differences between pretest and posttest social adjustment scores ($p < 0.05$), between pretest and follow-up scores ($p < 0.05$), and between posttest and follow-up scores ($p < 0.05$).

Similarly, within the mindfulness group, significant differences were found between pretest and posttest scores ($p < 0.05$), between pretest and follow-up scores ($p < 0.05$), and between posttest and follow-up scores ($p < 0.05$).

However, the between-group comparisons showed no significant difference between the logotherapy and mindfulness groups at pretest ($p > 0.05$), posttest ($p > 0.05$), or follow-up ($p >$

0.05). Therefore, the findings indicate that there was no significant difference between the effectiveness of logotherapy and mindfulness in improving soldiers' social adjustment.

Overall, these analyses demonstrate two main findings. First, logotherapy and mindfulness did not differ significantly in their effectiveness with respect to social adjustment. Second, although both interventions were effective in improving social adjustment, the follow-up findings suggest that the intervention effects were not fully stable over time, as significant changes were observed after the intervention phase. Thus, the results of the present study support the conclusion that both logotherapy and mindfulness are effective methods for enhancing the social adjustment of soldiers.

Discussion

Regarding the significant effectiveness of logotherapy and mindfulness on social adjustment, as well as the absence of a significant difference between the magnitude of their effects, the findings of the present study are broadly consistent with the combined results of previous research, including studies by Zarei (2023), Tarazi et al. (2023), Najafi et al. (2022), Mohammadi and Kamali (2018), Golmohammadian et al. (2017), Joz et al. (2024), Hee-Nam and Park (2017), Hosseini-Tabaghdehi (2022), Soureh (2022), Barzegari et al. (2021), Li et al. (2024), Wang et al. (2022), and Wood (2019).

To explain the significant effects of logotherapy and mindfulness, as well as the lack of a difference between them in improving soldiers' social adjustment, both theoretical foundations and prior empirical findings were considered. Although adaptation to the environment is one of the most fundamental aims of all organismic activity, a new environment with specific and often restrictive rules may create maladjustment and incompatibility in many individuals, particularly soldiers, who experience such difficulties due to the unique conditions of military life (Wood, 2019). Adjustment requires both changing and being changed, and it represents an effort to regulate tension through effective means (Terzio, 2017). In this sense, adjustment refers to the ongoing adaptation to change and the establishment of a relationship between the individual and the environment in such a way that maximum self-development and social well-being become possible while external realities are acknowledged (Tarazi et al., 2023). Adjustment does not simply mean conforming to the group; rather, it involves recognizing that personal goals must be pursued within social and cultural

frameworks. It is also a relative concept, and individuals achieve it to varying degrees (Seyedi & Seyedi, 2022).

In addition to adapting to the general norms of society, each individual must also adapt to the specific group or organization with which he interacts (Tarazi et al., 2023). Organizations have their own unique rules and norms that distinguish them from other social groups (Farsijani et al., 2022). One of the most important organizations in any society is its defense or armed forces, which operate under specific regulations and possess distinctive characteristics aligned with their societal function of protection and defense (Marin et al., 2023). Individuals entering military service differ substantially in their personal backgrounds and characteristics, and consequently they exhibit different reactions when confronted with the new realities of conscription and military life (Elena, 2023).

Military service is typically a period of at least two years in a young man's life and is often associated with separation from home and entry into a new social environment. Entering such a setting requires a high level of social adjustment (Wood, 2019). When soldiers are unable to adapt to new environmental, cultural, and even legal conditions, and when they fail to adjust to their new duties, roles, and responsibilities, they are likely to experience various forms of emotional, psychological, and behavioral tension. Under such circumstances, passing through this period may become highly difficult and problematic. This reality highlights the necessity of identifying, designing, and implementing educational and therapeutic programs aimed at strengthening social adjustment in this group. The present study addressed this objective through the frameworks of mindfulness and logotherapy.

The findings of the present study indicated that mindfulness-based intervention played an effective role in improving the social adjustment of the participating soldiers. Mindfulness involves open awareness of present experiences and an intentional observation of reactive habits as they arise. This process reduces reactivity and enhances the individual's ability to adapt to new social conditions. Through increasing the participating soldiers' awareness of their new circumstances, as well as their thoughts and emotions regarding those circumstances, mindfulness created a foundation for strengthening social adjustment. This finding, namely the effectiveness of mindfulness in improving social adjustment, is consistent with numerous domestic and

international studies, including those by Hosseini-Tabaghdehi (2022), Soureh (2022), Barzegari et al. (2021), Li et al. (2024), and Wang et al. (2022).

Because acceptance, tolerance, and letting go are among the central features of mindfulness, it may be argued that training in these capacities enhances social adjustment not only in general populations but also in individuals confronted with new environmental and social conditions (Soureh, 2022). The implementation of mindfulness training and the internalization of its concepts among soldiers appear to have had specific effects on their psychological structures when facing threats and difficult psychological and social situations. More specifically, mindfulness seems to have facilitated their capacity for social adaptation and endurance in challenging circumstances. When individuals encounter new social conditions, their emotional and psychological security often decreases, which in turn reduces their adaptive capacity (Hosseini-Tabaghdehi, 2022).

As a result of these pressures, the period of military service can become extremely difficult for soldiers. Mindfulness characteristics represent a combination of cognitive and emotional responses that are cultivated when attention is directed toward the present moment. Commitment to mindfulness-related qualities can produce substantial intrapersonal and interpersonal effects. These characteristics overlap with one another and contribute to improvements in related capacities and in interactions with others (Barzegari et al., 2022). Furthermore, the mental exercises and meditative practices associated with mindfulness were able to reduce emotional and psychological tension among soldiers, thereby contributing to their social adjustment.

In practical terms, implementing the mindfulness program increased the social adjustment of the soldiers who participated in the study. Wang et al. (2022) noted that mindfulness-based treatment deals extensively with cognitive distortions arising from worry. One advantage of mindfulness-based intervention is that it strengthens an individual's capacity to regulate and accept negative emotions and the bodily changes associated with them through the addition of mindful practices to treatment. This, in turn, increases its effectiveness in social adjustment by facilitating adaptation to new conditions. The present study supports this interpretation.

Mindfulness meditation also improves the management of distress among individuals dealing with emotional and psychological disturbances arising from internal experiences or environmental changes (Soureh, 2022). The mindfulness program encouraged participants to move away from reactive and ruminative mental states, which may explain the reduction in negative emotions and

the increase in adaptive capacity observed in this study. During the treatment process, participants had often suppressed their feelings regarding the stressful conditions of military service and had become increasingly alienated from those feelings, leaving little room for new experiences to be integrated into awareness. As a result, they had developed pessimistic thoughts, exhaustion with life, hopelessness, loneliness, and emotional and psychological uncertainty. Mindfulness training engaged the soldiers' attention, insight, and awareness, and by changing the way they attended to their surroundings and to ongoing experiences, it not only made their perspective toward their new conditions more positive, but also reduced emotional insecurity and facilitated adjustment to new social conditions. Klaini et al. (2022) similarly argued that mindfulness interventions, by strengthening present-moment awareness and using relaxation exercises such as meditation, yoga, and deep breathing, provide a basis for adaptation to intrapersonal, interpersonal, and environmental changes. This was confirmed in the present study through improved social adjustment among soldiers.

Li et al. (2024), in explaining how and why mindfulness promotes adjustment at psychological, interpersonal, and social levels, argued that changes in perception, muscle relaxation skills, and effective coping skills for stressful events enhance self-control and make acceptance of new and even difficult conditions more possible. Mindfulness exercises emphasize calmness, mental stillness, self-compassion, and awareness, all of which play an important role in calming the mind, reducing stress, and decreasing negative automatic thoughts. In turn, these processes enhance psychological safety and improve functioning in relation to new roles and responsibilities.

More broadly, military service and exposure to new environmental and social conditions can cause an individual to become overly preoccupied with the past and future. In such a mental and psychological state, the person lacks awareness of thoughts, behaviors, emotions, and feelings, is absent from the present moment, and reacts judgmentally to events, thereby becoming overwhelmed with worry and anxiety and less capable of self-management. Strengthening mindfulness among soldiers therefore appears to enhance their social adjustment. In other words, the present findings suggest that mindful soldiers, rather than reacting impulsively to new social circumstances, process events in a more realistic manner. Because they perceive internal and external realities with less distortion, they interpret and process military environmental and social

conditions as less distressing than they might otherwise seem and show greater capacity to cope with a wide range of thoughts, emotions, and experiences.

In addition to the effect of mindfulness on improving soldiers' social adjustment, the findings also demonstrated that logotherapy played an effective role in this domain. The results of the present study showed that logotherapy substantially increased soldiers' capacity to adapt to the new environmental conditions they had entered. This finding is consistent with numerous domestic and international studies reporting the effectiveness of logotherapy in improving social adjustment across different groups, including Zarei (2023), Najafi et al. (2022), Mohammadi and Kamali (2018), Golmohammadian et al. (2016), Joz et al. (2024), Suarez et al. (2023), and Hee-Nam and Park (2017).

Meaning-making is the central generative principle of logotherapy, and beyond enhancing emotional and psychological health, it significantly increases an individual's ability to cope with and adapt to various conditions (Zarei, 2023). As noted in earlier studies, logotherapy promotes a renewed focus on life goals and rekindles personal meaning and purpose. In this way, it facilitates and accelerates feelings of worth, enjoyment of the present moment, and purposeful engagement in activities. Helping soldiers discover meaning and connect with a spiritual or existential source appears to have facilitated their acceptance of new conditions.

New circumstances may motivate individuals to reflect on the meaning of life and the meaning of their suffering. From this perspective, meaning-centered change through logotherapy may be one of the strongest ways of dealing with traumatic events and new environmental and social conditions. The soldiers who participated in this study, through identifying the meaning embedded in their new military role, developed a stronger sense of purpose in their presence within that context and became better able to cope with its associated difficulties. In implementing this therapeutic program, the therapist challenged the subjective world and worldview of the participating soldiers and guided them away from perceived sorrow and suffering associated with being in that environment toward the perception of meaning. This process appears to have played an effective role in increasing happiness, motivation, and willingness to move forward. Joz et al. (2024) similarly emphasized that logotherapy helps individuals, rather than perceiving suffering in stressful conditions as pointless, to experience a form of meaning through suffering. Such a

process facilitates adaptation to new conditions and increases the likelihood of navigating them in a healthy and constructive manner.

The meaning individuals attribute to their lives guides their existence and provides significance to their goals and actions (Najafi et al., 2022). Therefore, when living in a new, demanding, and constantly changing environmental and social context fails to integrate with a person's meaning system, it may gradually undermine existing beliefs and goals and create the need for a renewed search for meaning (Hee-Nam & Park, 2017). Efforts toward meaning-making in the inner world of soldiers therefore appear to have strengthened their social adjustment, particularly after they were able to discover or understand the meaning embedded in their new experiences.

Because exposure to difficult new environmental and social conditions can create existential insecurity, the development of structured existential interventions that strengthen meaning-centered coping may be particularly effective. This type of existential treatment appears both feasible and acceptable for distressed individuals and can improve their social adjustment (Zarei, 2023). Logotherapy deepens the individual's engagement with life and facilitates the discovery of valuable meanings embedded within it. Helping soldiers discover such meaning allowed them to change the way they viewed suffering and, by placing it within a positive and valuable framework, to cope more effectively with the hardships of military service.

Meaning- and purpose-based treatment helps individuals understand that although they may not be able to change the inevitable events of life, they can learn to change how they cope with and respond to them (Suarez et al., 2023). For this reason, the therapeutic process directs the individual along a continuum between despair and flourishing, guiding him toward flourishing through meaning. Helping the soldiers in this study discover the purpose of military service by reviving creative values through work, service to others, experiential values, and attitudinal values led their lived experience toward worth and meaning.

Although both mindfulness and logotherapy played significant roles in improving the social adjustment of the soldiers who participated in this study, the results showed no difference in the extent of their effectiveness. Both mindfulness and logotherapy are insight-oriented approaches that focus on restructuring individuals' worldviews. Mindfulness enabled soldiers to view military service as a new engagement full of learning opportunities and to derive greater benefit from the experience rather than focusing exclusively on when it would end. This process facilitated coping

with hardship and increased readiness to adapt to new environmental and social conditions. The enhancement in social adjustment produced by this insight-oriented and action-oriented program was substantial enough that logotherapy did not demonstrate superiority over it.

Similarly, logotherapy enabled soldiers to approach the suffering embedded in their new role not by becoming immersed in sorrow and regret, but by becoming absorbed in the meanings and values contained within that experience. This process helped them perceive their new role as one of the many roles of life that can be rich and meaningful through increased learning, skill development, and spiritual values such as helping and caring for others. Its effective role in increasing soldiers' social adjustment is therefore understandable. Both approaches possess broad philosophical and conceptual foundations, and this likely explains why they had nearly equal effects on strengthening soldiers' social adjustment, with neither demonstrating superiority over the other.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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