

Review Paper

The Effectiveness of Psychological Interventions in Improving Psychological Well-being of Persons With Visual Impairment: A Meta-analysis Study

Alireza Malekitabr¹, Anahita Khodabakhshi-Koolae^{2*}, Mohammad Reza Falsafinejad³, Samira Vakili¹

1. Department of Counseling, Faculty of Humanities and Social Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran.

2. Department of Psychology and Educational Sciences, Faculty of Humanities, Khatam University, Tehran, Iran.

3. Department of Assessment and Measurement, Faculty of Psychology and Educational Sciences, Allameh Tabataba'i University, Tehran, Iran.



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ABSTRACT

Objective: It is essential to determine detailed studies to understand the effectiveness, mechanisms, moderators, and cost-effectiveness of psychological intervention programs on psychological well-being in visually impaired people.

Methods: This systematic review focused on studies that evaluated the interventions to promote psychological, emotional, and social well-being. The data were collected by searching Google Scholar, Elsevier, Science Direct, PubMed, and Scopus databases using the keywords, "psychological well-being in visually impaired people", "effectiveness of psychological interventions in people with visually impaired (VI)", "depression in blind people", "stress in visually impaired people", "effectiveness of cognitive behavioral therapy (CBT)", "behavioral approach", "rational emotive behavior therapy", "schema therapy", "cognitive therapy", "mindfulness", "orientation", "acceptance and commitment therapy (ACT)", "music therapy", "rational emotive behavior therapy (REBT)", "narrative therapy", "compassion therapy", "adventure", "play therapy", "meaning therapy", and "group counseling" on visually impaired people. Each keyword was searched separately. The search was conducted on the documents that were published from 2003 to 2023. In the final step, 25 records were analyzed in the study.

Results: Most studies focused on adolescents and young adults. A total of 44 components were assessed; the psychological components included distress, stress, anxiety, self-concept, assessment of decisive behavior, and psychological well-being in seven studies; the emotional components included depression and aggressive behavior in 6 studies, and the social components included communication skills and empathic orientations, social participation and social anxiety, social anxiety, quality of life (QoL), creative skills, interpersonal openness, and self-esteem in 12 studies. The highest number of interventions conducted focused on CBT in 6 studies followed by REBT interventions conducted in 3 cases.

Conclusion: Visually impaired people need effective and early interventions in life due to their limited vision. Since thinking, feeling, and action are intertwined in arousing a person, it seems that cognitive therapies can improve visually impaired people's psychological well-being. The results also indicated CBT and REBT are more effective than other interventions.

Keywords:

Psychological well-being, Visual impairment (VI), cognitive behavioral therapy (CBT), Meta-analysis

*** Corresponding Author:**

Anahita Khodabakhshi-Koolae, Associate Professor.

Address: Department of Psychology and Educational Sciences, Faculty of Humanities, Khatam University, Tehran, Iran.

Tel: +98 (21) 89174000

E-mail: a.khodabakhshid@khatam.ac.ir

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Highlights

- Persons with visual impairment (VI) encounter psychological and social problems, poor participation in social activities, a lack of independent life, and even incompatibility with urban space and public transportation.
- Previous studies have shown that psychological, social, and emotional interventions can help improve social skills, positive self-concept, and empathy in visually impaired persons, besides, reducing depression, loneliness, and anxiety in them.
- The current study was conducted with the method of meta-analysis so that researchers can check whether these psycho-social interventions have changed the psychological well-being of people with VI. And the effect of which method has been more positive?

Plain Language Summary

The present research uncovered that cognitive behavioral therapy (CBT) was the foremost factor, but it may not have a positive impact on a few psychological elements. Therapeutic modalities, such as rational emotive behavior therapy (REBT) had a positive impact. Given that considering, feeling, and action are interlaced in the behavior of an individual, it appears that cognitive-behavioral treatments, such as CBT and REBT can have a positive effect on psychological well-being in individuals with VI.

Introduction

Visual impairment (VI) is defined as a visual acuity of <6.12 that cannot be treated or corrected to normal with regular glasses or lenses (Evans & Rowlands, 2004). The term blindness is also used for complete or nearly complete loss of vision (Burton et al. 2020). VI affects all aspects of a person's life and is associated with reduced functional ability (Park et al., 2015). This impairment is a crucial public health concern worldwide and has an irreparable impact on the mental and economic health of individuals, as well as the well-being of families, society, and country (Otuka, 2021). Typically, emotional reactions, loss of self-confidence, and dependence on others are observed in visually impaired people (Szubielska, 2018). Visually impaired people face challenges in performing daily activities. Thus, it is unsurprising that stress, whether congenital or acquired with VI, is a major issue for affected people (Nyman et al., 2012). Studies have shown about 36 million people who are completely blind, 217 million people with moderate to severe VI, and 253 million people with (mild) VI around the world (Ezinne et al., 2022). In Iran, according to the released statistics, 600000 to 700000 people have been identified as having VI, of whom 115000 people are completely blind (Khodabakhshi-Koolae & Amoghli, 2024). Blindness and VI are problems and challenges that make affected people face many psychological and social problems (Bhagchandani, 2014). In addition to psychological and social problems, these people have poor participation in social activities, a

lack of independent life, and even incompatibility with urban space and public transportation (Aslan et al., 2012).

The consequences of VI that affect a person's physical and mental health are widespread and include a person's lack of independence and dependence on others in doing housework, personal affairs, and other routine life activities, loneliness and social isolation, non-participation in social and religious activities, difficulty in reading, lack of interest in and motivation for activities, restlessness, the occurrence of cognitive and functional disorders, decreased performance, increased dependence on others, low hope for the future, wishing for death, increased risk of accidents with vehicles, falling, and fractures (Lam et al., 2008). Moreover, people with VI experience stress and psychological distress in their daily lives due to having no access to information, social expectations, and the need for body movement and coordination with environmental situations (Lyngroth et al. 2023). People with VI often have limited physical and self-regulation abilities. However, doing yoga and mindfulness activities can improve the physical and mental health of affected people by reducing stress and improving their mood and well-being (Stone, 2022).

Depression, independent of the level of visual impairment, is another source of disability for visually impaired people (Rovner et al., 2002). These people show higher levels of depressive symptoms and loneliness than their sighted peers (Pinquart & Pfeiffer, 2011) and usually have more difficulty making new friends. Due to visual and social limitations,

people with VI have problems with their developmental tasks and maturity (Aghaee-Joshghani et al., 2023). Thus, they need early intervention and rehabilitation services that aim to improve daily life functioning, social participation, and possibly more general aspects of well-being such as quality of life (QoL) and psychosocial functioning (Koolae, 2017; Khodabakhshi-Koolae & Amogholi, 2024).

The term well-being does not have a single definition; however, the consensus is about the presence of positive emotions and states (e.g. satisfaction, happiness), positive functioning, feeling healthy and energetic, the absence of negative emotions (e.g. depression and anxiety), and satisfaction with life (Feldman, 2010). Depending on their area of interest, researchers may refer to well-being, which can involve physical, social, developmental, activity-based, emotional, psychological, life satisfaction, domain-specific satisfaction, engaging activities, and work (Marquès, 2012). This study was conducted to assess the factors affecting psychological, emotional, and social well-being.

Colleen et al. (2017) examined the most effective interventions that facilitate occupational engagement of older adults with age-related vision loss. The results showed that three interventions, including self-management programs, compensatory interventions (such as assistive devices and self-regulation strategies), and social support (such as relying on others, community resources, and peer support) were effective in facilitating occupational engagement of older adults with age-related vision loss.

Rees et al. (2017) showed that multidisciplinary rehabilitation services have a limited effect on the levels of depression symptoms of visually impaired people, but may improve other aspects of psychological well-being, such as QoL. Specifically designed psychoeducational programs improve a range of psychological outcomes and may be able to prevent depressive symptoms in people with VI.

Mullins conducted a realistic study of the conceptual implementation of therapy to reduce depression and cognitive distortions and improve problem-solving abilities for visually impaired and blind people. While the level of depression was not reduced significantly, the changes along with cognitive distortions indicated an increase in cognitive flexibility and a subjective sense of success and well-being. The resulting cognitive flexibility may predict more positive outcomes for behavioral health in the future. The results indicated that a flexible, innovative, and adaptive evidence-based approach is necessary to work with visually impaired people due to the many challenges faced by these people (Mullins, 2019).

Vander et al. (2016) in their systematic review study examined psychosocial interventions to improve mental health in visually impaired adults and did not observe any significant general effects on symptoms of anxiety, psychological distress, mental exhaustion, and mental health. The interventions had only modestly significant effects on depressive symptoms, and interventions delivered in the context of VI rehabilitation care (which may increase accessibility for people with VI) were more effective than interventions delivered in other settings (e.g. hospitals/clinical settings). The sample size of the studies was often small and the follow-up phase was short.

Given the prevalence of psychological distress in visually impaired people and the reciprocal relationship between depression and disability, it is vital to understand the impact of vision rehabilitation on mental health. Moreover, it is essential to determine whether psychological interventions can improve mental health or prevent psychological problems or whether it is required to integrate specific psychological interventions into rehabilitation programs. More detailed studies are needed to understand the effectiveness, mechanisms, moderators, and cost-effectiveness of psychological intervention programs on psychological well-being in visually impaired people. Given the growing variety of available interventions and increasing efforts to professionalize health care, there is a strong need for evidence on the effectiveness of interventions in achieving positive outcomes. Visually impaired people have the right to benefit from the most effective rehabilitation programs, and the importance of evaluating the effectiveness of interventions has been emphasized by the World Health Organization (WHO) and the United Nations Convention on the Rights of Persons with Disabilities (CRPD) (United Nations, 2006). To this end, the present study was conducted to provide a systematic analysis of studies to investigate the effectiveness of psychological interventions on the psychological well-being of visually impaired people and introduce the most effective interventions.

Materials and Methods

This systematic review analyzed the studies that addressed interventions to promote psychological, emotional, and social well-being. The research population included all documents related to the effectiveness of psychological interventions in the psychological well-being of visually impaired people using experimental or quasi-experimental designs with intervention and control groups and pre-test/post-test with or without follow-up. The data were collected by searching Google Scholar, Elsevier, Science Direct, PubMed, and Scopus databases using the keywords, “psychological well-being in visually impaired people”, “effectiveness of psychological interventions in people with VI”,

“depression in blind people”, “stress in visually impaired people”; “effectiveness of cognitive behavioral therapy (CBT)”, “behavioral approach”, “rational emotive behavior therapy”, “schema therapy”, “cognitive therapy”, “mindfulness”, “orientation”, “acceptance and commitment therapy (ACT)”, “music therapy”, “rational emotive behavior therapy (REBT)”, “narrative therapy”, “compassion therapy”, “adventure”, “play therapy”, “meaning therapy”, and “group counseling” on visually impaired people. Each keyword was searched separately. The search was conducted on the published documents from 2003 to 2023. In the end, 211 studies were extracted through the mentioned search engines, and 8 studies were selected from other databases, such as Magiran. After removing duplicates, 176 articles were analyzed and 10 irrelevant articles and 24 articles whose full texts were not available were excluded. Finally, 142 articles were analyzed, of which 25 articles met the inclusion criteria. The inclusion criteria included all cross-sectional studies that addressed the effectiveness of psychological interventions in the cognitive and social factors in visually impaired people using a pre-test and post-test or a repeated measurement design and a quantitative approach. The exclusion criteria included studies not relevant to the subject in question. Two researchers searched the articles simultaneously and to increase the validity and reliability of the research procedure, they evaluated the quality of the articles separately based on the inclusion and exclusion criteria. To select the articles, a list of titles and abstracts of all the articles available in the databases was prepared by the researcher and examined to determine and select relevant articles. Then, related articles were assessed independently. Finally, 25 articles that had inclusion criteria were enrolled in the systematic review study (Figure 1).

Results

Characteristics of the research population

Appendix 1 presents a summary of the reviewed studies. The data indicated that the number of participants in 23 studies (92%) of the studies varied from 16 to 120 persons. Moreover, the number of participants in 2 studies (8%) that adopted a single-subject design, varied from 1 to 2 persons. In 2 studies (8%), the participants were only female. In addition, 17 studies (68%) assessed both males and females, and 2 studies (8%) only examined male participants. Furthermore, 4 studies (16%) did not specify the gender of the participants. In 22 studies (88%), the participants' ages ranged from 6 to 24 years, and in 1 study (4%), the mean age of participants was 43 years. In addition, in 2 single-subject studies (8%), the participants were 77, 12, and 14 years old. The results also indicated that a vast majority of studies focused on adolescents and young adults.

Research design

The data revealed that 9 studies (36%) adopted a randomized controlled trial design, 14 studies (56%) used a quasi-experimental research design, and 2 studies (8%) adopted a single-case design with repeated measurements.

Psychological indicators

A total of 44 different psychological variables were assessed in the reviewed studies. The psychological components included psychological distress, stress, and anxiety (3 cases), self-concept (2 cases), assertiveness, and psychological well-being in 7 studies; the emotional components included depression (4 cases) and aggressive behavior (2 cases); and the social components (6 cases) included communication skills, empathic tendencies, social participation, and social anxiety (2 cases), QoL (3 cases), and creative abilities, interpersonal openness and self-esteem (12 cases).

Interventions

The reviewed studies assessed the effectiveness of various psychological interventions, such as assertiveness, emotional intelligence (2 cases), life skills, REBT (3 cases), music therapy, ACT, positive thinking, creative skills, logotherapy, computer games, spiritual therapy, training to facilitate independent mobility and orientation (2 cases), communication skills, stress management, choice theory training, a guide to treating depression symptoms, and cognitive behavioral therapy (5 cases). The interventions were conducted in 8 to 48 sessions and 10 studies had a follow-up of 2 to 18 months.

Discussion

Systematic review data indicated that the psychological interventions to improve psychological, emotional, and social well-being were mostly conducted on adolescents, especially students. However, one case study was conducted on a 77-year-old woman (Utoyo, 2015). The largest number of interventions focused on CBT in 6 articles. The results indicated that CBT was effective in promoting self-esteem and self-confidence and reducing depression and social anxiety (Utoyo, 2015; Elsherbiny, 2015; Soleimani Sefat et al., 2017; Eka et al., 2019). One study confirmed the effectiveness of cognitive-behavioral group therapy in improving self-concept in four aspects, including intellectual ability, work efficiency, physical attractiveness, and social skills, but did not find a positive effect on virtues and vices (Yaghotian et al., 2016). One study examined the impact of CBT on anxiety and found that the positive and motivating program (PAM) did not significantly reduce anxiety symptoms in visually impaired children, and the overall mean score in each group

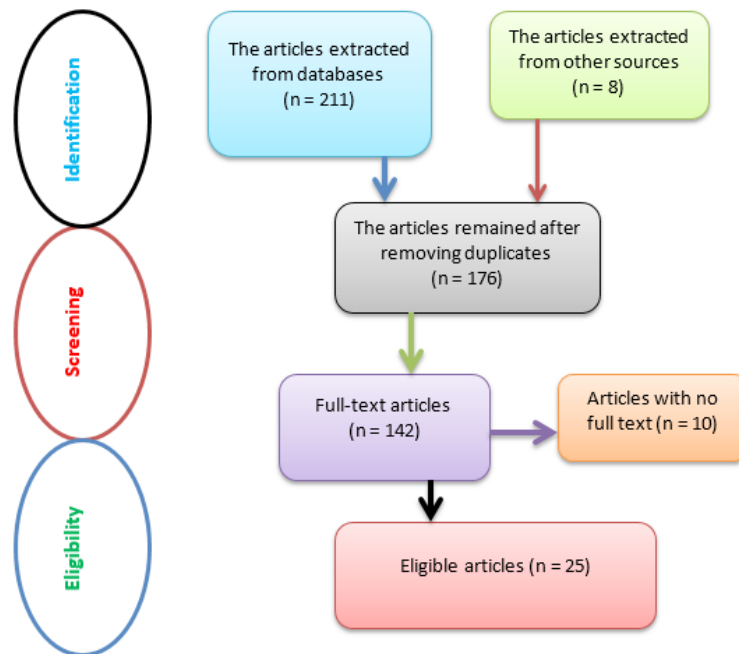


Figure 1. Preferred reporting items for systematic reviews and meta-analyses (PRISMA) flow diagram PRACTICE in
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remained virtually unchanged from T1 to T4 (Visagie et al., 2021). REBT was the second most frequent intervention used in 3 articles to reduce depression, anxiety, and worry and decrease the negative evaluation of people, leading to a positive effect on psychological variables in all three studies reviewed (Jalali et al., 2014; Liziana, 2018; Abiogu et al., 2020). Emotional intelligence-based interventions were also effective in reducing the level of aggression and improving psychological well-being as reported in 2 studies (Eniola, 2007; Eniola, 2013). Interventions aimed to facilitate independent mobility and orientation were also effective in improving the QoL, openness, and the meaning of life in 2 studies, but in the long term, they only had a positive effect on interpersonal openness (Kamali & Ashori, 2021; Elewiat & Keshky, 2022). Assertiveness training had no significant effect on improving social self-expression skills and reducing students' cognitive distortions (Kim, 2003). Life skills training in the form of group and individual CBT is an effective rehabilitation intervention for young and middle-aged adults who suffer from psychological distress associated with acquired visual impairment. The communication skills training program was able to improve the empathic tendencies and communication skills of visually impaired adolescents (Ueda, 2010). Music can also significantly reduce the level of aggression (Hashemian et al., 2015). The mentoring intervention with a focus on positive thinking and successful experiences can improve people's social participation (Heppel et al., 2015). Teaching the concepts of choice theory is effective in the hope and QoL of blind individuals (Khodabakhshi Koolaee et al., 2017). The data also indicated that ACT was effective in improving the self-esteem of adolescents with VI (Mirmohammadi et

al., 2021). Moreover, meaning therapy was effective in reducing the social anxiety of blind adolescents (Adulrahman, 2021). Spiritual interventions can also help improve the QoL and spiritual intelligence in visually impaired students (Gohari et al., 2023). The SEE game had more positive effects on academic self-concept and social well-being. No significant difference was observed between the coping strategies in the intervention and control groups (Lieveense et al., 2021). The stress management protocol reduced stress in both rounds of the intervention. However, stress was significantly reduced only in the second phase of the intervention (Paige & Elise, 2017). The results indicated that a research-made program stimulated the development of 8 aspects of the creative abilities of the participants (Kholoud et al., 2015). The intervention program improved communication skills, empathic tendencies, and communication skills of visually impaired adolescents (Yildiz & Duy, 2013).

In conducting this research, a linguistic bias was observed. Some articles published in different countries were not in English and only their English abstracts were available, which were eventually excluded, which ultimately reduces the generalizability of the results. Given the prevalence of psychological distress in visually impaired people and the reciprocal relationship between depression and disability, it is essential to understand the impact of vision rehabilitation on mental health. In addition, investigating the effectiveness of psychological interventions to increase the QoL and self-concept of people with visual impairments can help promote mental health and prevention and develop rehabilitation programs.

Conclusion

Visually impaired people need effective and early interventions in life due to their limited vision. The results indicated that CBT was the most frequently used intervention, but it cannot have a positive effect on some variables. Three studies reported that REBT had positive effects. Given that thinking, feeling, and action are intertwined in arousing a person, it seems that cognitive therapies can improve psychological well-being in visually impaired people, with cognitive behavioral therapy and rational emotional behavioral therapy (CBT and REBT) playing a more effective role.

Researcher's interpretation

Studies have shown that psychological interventions are effective in the psychological well-being of visually impaired people. According to the studies conducted by the researchers, their close connections with visually impaired people, and looking at the world from their perspective, psychological services provided by counselors along with group therapies with peers and non-peers can play an effective role in improving the psychological well-being of visually impaired people.

Ethical Considerations

Compliance with ethical guidelines

The article was registered in the [Iran National Committee for Ethics in Biomedical Research](#) (Code: IR.IAU.SRB.REC.1401.254). To comply with the ethical principles of voluntary participation, written informed consent was obtained from the participants for conducting and recording the interviews. The participants were also reassured of the confidentiality of their information.

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declared no conflict of interest.

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Appendix 1. A Summary of the reviewed articles

Author (y) Country	Research Design	Sample	Intervention	Follow-up	Instruments	Focus	Homogeneity of Variance	Data Analysis	Results
Kim (2003) South Korea	An experimental pre-test/post- test design with a control group	26 blind adolescents (14 males and 12 females) aged 13-19 were randomly assigned to the two groups.	The assertiveness training curriculum for adolescents with visual impairment (ATCAV)	-	Social skills rating System (SSRS), cognitive distortion scale (CDS), and role play	Assessing assertive behavior	-	ANCOVA for assertiveness ($F=0.43$; $P=0.52$) and cognitive distortions ($F=0.35$; $P=0.85$)	Assertiveness training had no statistically significant effect on improving students' social self-expression skills, as rated by students themselves, their parents, teachers, and supervisors, and assertiveness training had no statistically significant effect on reducing students' cognitive distortions.
Eniola (2007) Nigeria	A bi-factorial experimental pre-test/post- test design with control group	48 visually impaired male and female participants were randomly divided into three groups (two experimental groups and one control group, 16 people each).	Emotional intelligence tracing (EIT) and self- regulation training (SRT) in 10 weekly sessions of 60 minutes.	-	Aggression questionnaire (Buss & Perry, 1992)	Remediating aggressive behavior	-	ANCOVA ($F=16.43$; $P=0.05$)	Two intervention programs (EIT and SRT) were effective in participants exposed to the two interventions and improved their aggressive behavior compared to the control group.
Ueda & Tsuda (2010) Japan	A quasi- experimental design (pre-test/ post-test) with two experimental groups and a control group	37 men and women with VI with an mean age of 43 years, with skill training, group counseling, and individual cognitive therapy and a control group (42 people)	Life skills training with group counseling in ten 90-minute sessions; Teaching life skills with individual cognitive therapy sessions once a week for 45 minutes	-	Profile of mood states (POMS), Nottingham adjustment scale Japanese version (NAS-J)	Reducing psychological distress	-	Wilcoxon and Mann-Whitney U test	Group counseling combined with individual cognitive therapy can be an effective rehabilitative treatment for young and middle- aged adults suffering from psychological distress associated with acquired visual impairment.

Author (y) Country	Research Design	Sample	Intervention	Follow-up	Instruments	Focus	Homogeneity of Variance	Data Analysis	Results
Yildiz & Duy (2013) Turkey	A quasi-experimental design with pre-test and post-test with control group	16 adolescents (6 girls and 10 boys) with a mean age of 13.5 years	9-session psychological training program for interpersonal communication skills	4 months after the intervention	Child and adolescent KA-SI empathic tendency scale and communication skills scale	Empathic tendencies and communication skills of adolescents	Levene's test	Split-plot ANOVA (SPANOVA) (F=29.07; P=0.001)	The results confirmed the effectiveness of the psychological training program in improving the empathy and communication skills of visually impaired adolescents.
Eniola (2013) Nigeria	An experimental pre-test and post-test design with a 3x2x2 matrix, two experimental groups, and a control group of 40 people each.	120 blind boys and girls aged 12 to 21 years were selected using purposive sampling	Emotional intelligence training package (EITP) and locus of control training package held for 8 weekly sessions of 2 hours	-	Snellen chart and adapted version of Ryff scale of psychological well-being (AVRPWB)	Improving the psychological well-being of adolescents	-	Covariance analysis and Duncan's test (F=21.02; P=0.05)	The results indicated a significant effect on the mental health of visually impaired adolescents in both experimental and control groups. Besides, the participants who received emotional intelligence training reported a higher level of psychological well-being than those who received the locus of control training.
Jalali et al. (2014) Iran	A quasi-experimental design (with pre-test/post-test and follow-up) and control group	60 short-sighted persons (male and female) (20 to 30 years old) in two experimental and control groups. 30 people each. Selected via purposive sampling with random replacement in the two groups.	Rational emotive behavior therapy (REBT)	One month	Jones irrational beliefs inventory of depression, anxiety, stress (DASS21), Eysenck personality questionnaire (EPQ)	Assessing psychological well-being (depression, anxiety, and stress)	-	Paired samples t-test (t=10.99; P<0.001)	The educational intervention led to a reduction in irrational beliefs and thoughts (at the level of depression, anxiety, and stress) and an increase in the self-esteem of the participants in the experimental group.

Author (y) Country	Research Design	Sample	Intervention	Follow-up	Instruments	Focus	Homogeneity of Variance	Data Analysis	Results
Hashemian et al. (2015) Iran	A random experimental pre-test/post-test design with a control group	56 male and female high school students in two groups of 28 with random sampling and random replacement	Music therapy and traditional music sessions 12 90-min sessions per week	-	Bass and Perry aggression questionnaire and Rutter child behavior questionnaire	Improving learning, social adaptation, muscle coordination, emotional stability, and emotional stimulation	Kolmogorov-Smirnov test & t-test	ANCOVA ($F=12.781$; $P=0.001$)	Music can significantly reduce the level of aggression.
Heppe et al. (2015) Netherlands	A randomly controlled experimental design (pre-test, post-test, and follow-up) with two experimental groups and one control group	120 adolescents aged 15 to 22 in two experimental groups and one control group	A mentoring intervention focusing on positive thinking and successful experiences for 12 face-to-face training sessions for one year	18 months after the intervention	Visual activities and perception (VAP); degree of peer activity list (DPAL), social network mapping scale, Rosenberg self-esteem scale, De Jong Gierveld Loneliness scale, Nottingham adjustment scale, cognitive emotion regulation questionnaire (CERQ), basic psychological need satisfaction and need frustration scale (BPNFS)	Social participation	-	ANOVA	The results confirmed the improvement of social participation in three areas (work/school, leisure activities, and social relations).
Kholoud et al. (2015) Jordan	A randomized quasi-experimental pre-test/post-test design: Two intervention groups (7 males and 18 females) and two control groups (7 males and 9 females)	41 male and female students aged 9 to 10 in fourth and fifth grade with VI	A researcher-made creativity training program held two 45-min sessions per week for 3 months.	-	A researcher-made creativity inventory and semi-structured interviews with each participant for 30 minutes	Developing creative skills	-	Three-way MANOVA Psychological dimension ($F=23.604$; $P=0.001$) Flexibility ($F=83.056$; $P=0.001$) Originality ($F=116.66$; $P=0.001$) Critical thinking ($F=78.68$; $P=0.001$) Curiosity ($F=79.14$; $P=0.001$) Fantasy ($F=99.98$; $P=0.001$) Complexity ($F=101.58$; $P=0.001$) Risk-taking ($F=66.26$; $P=0.001$)	The intervention simulated the 8 creative dimensions in the participants. No significant difference was observed between males and females in overall dimensions and sub-dimensions. Creativity is a mental process that is distributed among ordinary people regardless of their gender

Author (y) Country	Research Design	Sample	Intervention	Follow-up	Instruments	Focus	Homogeneity of Variance	Data Analysis	Results
Utoyo (2015) Indonesia	A single case study with repeated measures (baseline, mid-test, and post-test)	A 77-year-old woman suffering from depression Eight 120-min sessions (two sessions per week)	Manual for treating depressive symptoms (relaxation, cognitive restructuring, and problem-solving techniques)	-	The Indonesian version of the Beck Depression Inventory and Geriatric Depression Scale (GDS)	Assessing depression	-	Mini-mental status examination (MMSE)	VI-based psychological therapy can reduce depression in persons.
Elsherbiny (2015) Oman	A quasi-experimental design with two experimental and control groups of 12 people each	24 male and female students aged 19 to 24	Cognitive behavioral intervention (behavioral and cognitive techniques) (CBT), 17 sessions for 15 weeks (3.5 months), each session lasting 60 minutes	-	Social avoidance and distress scale	Improving self-esteem and self-confidence	-	t-test (t=10.5; P=0.01)	A statistically significant difference was observed between the experimental and control groups in social avoidance after the CBT intervention. The CBT intervention was effective in reducing the social avoidance of blind students.
Yaghothian et al. (2016) Iran	A quasi-experimental pre-test/post-test design with control group	20 visually impaired male students (primary and middle school). Random sampling in two experimental and control groups of 10 people each.	Cognitive behavioral therapy in nine 90-min weekly sessions	-	Beck's self-concept questionnaire	Assessing 5 aspects of personality: intellectual ability, work efficiency, physical attractiveness, and social skills, and virtues and vices.	K-M for pre-test (Z=0.47; P=0.97) K-M for post-test (Z=0.77; P=0.58)	ANCOVA for self-concept (F=22.56; P<0.0001) ANCOVA for virtues and vices (F=0.03; P<0.85)	CBT was significantly effective in self-concept in four aspects of intellectual ability, work efficiency, physical attractiveness, and social skills among the participants in the experimental group, but it did not affect virtues and vices.

Author (y) Country	Research Design	Sample	Intervention	Follow-up	Instruments	Focus	Homogeneity of Variance	Data Analysis	Results
Khodabakhsh-Koolaei et al. (2017) Iran	A quasi-experimental pre-test/post-test design with control group	30 blind and partially sighted people aged 20 to 40 years, simple random sampling in two experimental and control groups of 15 people (8 females and 7 males in each group)	Training intervention based on choice theory in eight 90-min sessions for 2 months	-	QoL and adult hope scale	Assessing the QoL and hope	K-M for hope (Z=0.79; P=0.55) K-M for pre-test (Z=0.63; P=0.82) K-M for post-test (Z=1.22; P=0.1) K-M for QoL (Z=1.22; P=0.1) K-M for pre-test (Z=1.03; P=0.23) K-M for post-test (Z=1.22; P=0.1)	ANCOVA for hope (F=35.17; P<0.001) ANCOVA for QoL (F=22.50; P<0.001)	Teaching the concepts of choice theory was effective in the hope and QoL of blind people.
Soleimani Serfat et al. (2017) Iran	A quasi-experimental pre-test/post-test design with control group	30 visually impaired high school and pre-university male students, purposive random sampling in two experimental and control groups (15 students in each group)	Ten 90-minute group CBT sessions (twice a week)	-	Beck Depression Inventory	Reducing depressions	Levene's test (F=0.849; P=0.386) K-M (Z=0.569; P=869)	ANCOVA (F=23.221; P=0.01)	CBT was significantly effective in improving the depression of male students with VI in the experimental group.
Paige & Elise (2017) USA	A single-group pre-test/post-test design without a control group	36 blind persons over 18 years old (16 males and 20 females) with a mean age of 48 years. Intervention: twice a year (first intervention with 36 people and second intervention with 11 people)	Stress management protocol for 8 weekly sessions	-	Calgary symptoms of stress inventory (C-SOSI) Outcome rating scale (ORS)	Measuring stress	-	t-test and Cohen's D effect size	Stress reduction was observed in both intervention phases. However, stress was significantly reduced only in the second phase of the intervention.

Author (y) Country	Research Design	Sample	Intervention	Follow-up	Instruments	Focus	Homogeneity of Variance	Data Analysis	Results
Liziana et al. (2018) Nigeria	A randomized experimental pre-test/post-test design with a control group	65 blind students (33 students in the experimental group (16 males and 17 females) and 32 students in the control group (14 males and 18 females)	REBT intervention for twelve weekly 60-min sessions	A two-week follow-up session for 2 months	Beck depression inventory	Reducing depression symptoms	Levene's test (F=0.29; P=0.59)	Independent samples t-test for primary analysis, paired samples t-test, and repeated measures ANOVA for intragroup and intergroup differences (F=52.74; P<0.001)	The REBT intervention resulted in a significant reduction in depression among blind students. That is, using evidence-based REBT techniques can help overcome depressive thinking, beliefs, and feelings in people with special needs.
Eka et al. (2019) Indonesia	A single-case study with a multiple-baseline design	Two visually impaired female 7th and 8th-grade students aged 12 and 14 years	CBT, 11 observation sessions (3 1A baseline, 5 intervention, and 3 2A baseline sessions)	-	Goal attainment scaling (GAS)	Reducing social anxiety	-	Visual graphs, t-test, and Z-score	CBT was effective in reducing the social anxiety of blind students.
Abiogu et al. (2020) Nigeria	A randomized experimental pre-test/post-test design with a control group	56 students with visual impairment (34 males and 22 females) aged 13 to 21 years, Twelve 60-min sessions for 12 weeks Random replacement	v-REBT	One follow-up session 6 months after the intervention	Personal value scale and AV 2ABS	Reducing the negative personal value system in people with VI	Leven's values on pre-test (F=1.256; P=0.299) post-test (F=0.693; P=0.757), and follow-up (F=0.787; P=0.705)	ANCOVA for post-test (F=76.229; P<0.001) ANCOVA for follow-up (F=130.286; P<0.001)	Rational emotive behavior therapy had a significant effect on reducing the negative personal value system of visually impaired students.

Author (y) Country	Research Design	Sample	Intervention	Follow-up	Instruments	Focus	Homogeneity of Variance	Data Analysis	Results
Mirramahmadi et al. (2021)	A quasi-experimental pre-test/post-test design with a control group and follow-up	28 female students aged 14 to 20 years (14 members in each group)	8 ACT sessions (two 75-min sessions per week)	2-month follow-up	Cooper-Smith self-esteem questionnaire (CSSEQ)	Evaluating self-esteem	Levene's test	MANCOVA and paired samples t-test	ACT was effective in improving self-esteem in adolescents with Visual Impairment.
Kamali & Ashori (2021) Iran	A quasi-experimental pre-test/post-test design	24 male and female students selected via random cluster sampling.	8 orientation and mobility sessions: Two 45-60 min sessions per week	-	WHOQOL-BREF	Evaluating the QoL (psychological health, physical health, environmental health, and social relations)	Shapiro-Wilk test (F=0.73; P>0.05) Levene's test (F=0.56; P>0.05)	ANCOVA (F=12.75; P>0.002) MANCOVA	The results indicated a significant increase in the QoL and all subscales (physical health, mental health, social relations, and environmental health) in the experimental group compared to the control group.
Adurrahman (2020) Saudi Arabia	A quasi-experimental pre-test/post-test design with control group	20 male and female students aged 13-20 (each group with 10 students) Twenty-four 50-60 min sessions (3 sessions per week)	Logotherapy	2 months	A researcher-made social anxiety scale	Reducing social anxiety in blind adolescents	Mann-Whitney U test for the participants' age (Z=1.604; U=29) and social anxiety (Z=0.076; U=49)	Mann-Whitney U test (Z=3.785; U=0.001) Wilcoxon (Z=0.409; W=23.50)	Meaning therapy was effective in reducing social anxiety in blind adolescents.
Livense et al. (2020) Netherlands	A randomized controlled trial with pre-test/post-test and control group	64 male and female children aged 6 to 8 placed into the intervention and control group. A 4-6 week intervention	A ten-level SEE computer game (10-20 minutes)	3 months after the intervention	Self-concept questionnaire, stress and coping questionnaire for children, QoL questionnaire social validity scale	Investigating psychosocial consequences (self-concept and coping strategies) in blind children	-	ANOVA for coping strategies (F=0.86; P=0.42), social wellbeing (F=4.31; P=0.01), and academic self-concept (F=28.78; P=0.001)	The SEE game had more positive effects on academic self-concept and social wellbeing. There was no significant difference between the coping strategies adopted by the two groups.

Author (y) Country	Research Design	Sample	Intervention	Follow-up	Instruments	Focus	Homogeneity of Variance	Data Analysis	Results
Visagie et al. (2021) South Africa	CBT-based early intervention and prevention programme	52 students aged 9 to 14 with visual impairment (28 males and 24 females), 27 participants in immediate intervention and 25 participants in delayed intervention	CBT-based positive and motivating program Ten 45-min sessions in 5 weeks	Four measurement occasions: pre-test, post-test, 3 months after the early intervention, and 3 months after the delayed intervention	3ORCADS & PSWQ-C	Assessing anxiety and worries	-	ANOVA for the early and prevention interventions on 4 measurement occasions	The results showed that the PAM program did lead to a significant reduction in anxiety symptoms in visually impaired children, and the average overall score in each group practically remained unchanged from T1 to T4.
Elewlat & Keshky (2022) Saudi Arabia	A quasi-experimental design with repeated measures	18 blind female students (9 blind and 9 partially sighted) Four-month intervention with 4-stage evaluation (2 months after the intervention, at the end of the intervention, and follow-up 2 months after the intervention)	Mobility and orientation program: Three 6-min sessions per week for 4 months	2 months	The short version of Ryff's psychological well-being scale, the meaning in Life questionnaire	Assessing mental health, openness, and meaning in life	-	T-test with repeated measures	A significant difference was observed in psychological well-being, openness, and the meaning of life between the baseline, post-intervention, and follow-up phases. But except openness, other indicators decreased in the post-intervention phase.
Gohari et al. (2023) Iran	A quasi-experimental pre-test/post-test design	32 visually impaired students were selected via convenience and purposive sampling: 5 females and 11 males in the intervention group and 6 females and 10 males in the control group.	12 spirituality therapy sessions for 2 months (2 sessions per week)	-	King spiritual intelligence scale	Assessing the QoL and spiritual intelligence	Levene's test (F=0.764; P<0.05)	Univariate ANCOVA for QoL (F=4.833; P<0.05) and spiritual intelligence (F=178.943; P<0.05)	Spiritual intervention can help improve the QoL and spiritual intelligence in visually impaired students.

Abbreviations: ANCOVA: Analysis of covariance; VI: Visual impairment; MANOVA: Multivariate analysis of variance; WHOQOL-BREF: WHO QoL-rational emotive behavior therapy; 3ORCADS & PSWQ-C: Revised child anxiety and depression scale and Penn state worry questionnaire for children.