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Comparison of the Effectiveness of Cognitive Hypnotherapy and Successful Intelligence Training on the Cognitive Empowerment of Male 12th Grade Students in District 4 of Tehran

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A B S T R A C T

Purpose: The purpose of this study was to compare the effectiveness of cognitive hypnotherapy and successful intelligence training on the cognitive empowerment of male 12th grade students in District 4 of Tehran.

Methods and Materials: The research design was semi-experimental, with a pretest-posttest and follow-up design. The statistical population of the study consisted of all male 12th grade students in the second cycle of secondary education who visited educational counseling centers in District 4 of Tehran in 2022. The sampling method was convenience sampling, and 45 students were selected, with 15 students in each of the two experimental groups (cognitive hypnotherapy and successful intelligence training) and one control group. Data were collected using the Cognitive Empowerment Questionnaire by Haji Hosseini and Haji Hosseini (2018), the Cognitive Hypnotherapy Intervention by Aladdin (2011), and the Successful Intelligence Training Protocol by Shoushtari, Malekpour, Abedi, and Ghamarani (2016).

Findings: The results indicated that although the average score on the cognitive empowerment scale was higher in the successful intelligence training group than in the cognitive hypnotherapy group, this difference was not statistically significant.

Conclusion: This study highlights the effectiveness of cognitive hypnotherapy and successful intelligence training in enhancing cognitive empowerment and psychological well-being, offering valuable insights for educational and psychological interventions.

Keywords: *cognitive hypnotherapy, successful intelligence training, cognitive empowerment.*

1. Introduction

Students hold a special position in the future transformations of society, and consequently, education plays a crucial role as the source of training specialized human resources for the future (Enayati Shabkolai et al., 2023; Fan & Wang, 2020; Omale, 2024; Safikhani, 2022). Essential components for dealing with challenges among students, which require serious attention, include cognitive empowerment and working memory (Baniasadi, 2024; Meltzer, 2018; Roghani et al., 2022). Cognitive empowerment refers to helping individuals in such a way that they can achieve their potential for change (Lardier et al., 2019; Saeedzade & Rahmani, 2022; Speer et al., 2019). The outcomes of empowerment include positive self-confidence, the ability to achieve goals, a sense of control over life and the processes of change, and a hopeful outlook toward the future. Psychological empowerment is a cognitive state characterized primarily by a sense of control, competence, and intrinsic goal-setting (Alwali, 2024; Juyumaya, 2022; Pourjaberi et al., 2023; Rahmawati, 2023; Schermuly et al., 2023). This construct is a highly significant concept that has been widely used in industrial psychology. Many studies have been conducted on this concept, and in the latest research, the four conceptual dimensions of this variable, based on Spritzer's work, are defined as competence, meaningfulness, impact, and self-determination (Corey, 2017). Competence refers to the extent to which an individual can perform expected activities based on their skills and ideas. The individual must have enough self-confidence to perform their activities correctly, considering the environmental conditions. Meaningfulness refers to whether what the individual does aligns with their goals, which are derived from their thoughts and beliefs. Impact refers to the extent to which an individual can influence decision-making processes and management components such as planning, control, organizing, and guiding all related activities. Finally, self-determination refers to the individual's confidence in the method they use to perform their work. At this level, the individual trusts their ability to carry out tasks according to their method, while managing time and required speed (Nwachukwu et al., 2022).

All experts in psychology and educational sciences agree that adolescence is the most sensitive, critical, and important stage of human development. In this period, individuals reach maturity, seek to discover their identity, and strive for independence and separation from the dependencies of childhood (Holling et al., 2007). For these reasons, adolescents in this stage often lack psychological stability, and this is when most behavioral, cognitive, emotional, and psychological problems emerge. Adolescence is accompanied by many physical and psycho-social changes, during which individuals face intense pressures and emotions, including anxiety-related emotions (Simpson et al., 2020).

Among many interventions aimed at improving mental, behavioral, and cognitive health, hypnotherapy has gained attention as an emerging and complementary treatment (Fisch et al., 2017). This approach is based on the assumption that most psychological disorders stem from negative forms of self-hypnosis, where negative thoughts are critically accepted, often without awareness. Hypnotherapy includes several fundamental methods such as relaxation, guided imagery, cognitive restructuring, systematic desensitization, and teaching hypnotic skills. One type of hypnotherapy is cognitive hypnotherapy, which combines hypnotherapy with cognitive-behavioral therapy techniques and concepts, developed by Asan Aladdin (Holler et al., 2021). Cognitive-behavioral therapy integrates cognitive and behavioral approaches. In this model, patients are assisted in identifying distorted thinking patterns and ineffective behaviors. To enable individuals to change these distorted and ineffective thoughts, structured discussions and assignments are used (Cowden, 2016).

In cognitive hypnotherapy, the goal is to change thoughts, beliefs, emotions, and ultimately an individual's behavior. Cognitive hypnotherapists guide the individual's attention in many cases, shifting their focus from negative aspects of life (which are often accurate) to positive and adaptive aspects (which are potentially correct). This method can lead to a reduction in negative self-talk and cognitions or even their replacement with positive thoughts, contributing to better mental health and improved behavior (Muñiz et al., 2022). Cognitive hypnotherapy includes fundamental techniques such as cognitive restructuring, relaxation, systematic desensitization, guided imagery, and hypnotic skill training. By accessing the unconscious mind, it can eliminate the negative consequences of self-hypnosis and transform an individual's thoughts and perspectives in such a way that their emotions and feelings improve (Holler et al., 2021; Muñiz et al., 2022).

Another component that contributes to improving the psychological and cognitive well-being of individuals, especially students, is successful intelligence. Successful intelligence is a combination of analytical abilities

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(analyzing, evaluating, comparing, thinking, and problem-solving), creative intelligence (creating new ideas and coping with new methods for solving problems), and practical intelligence (applying knowledge to solve everyday social problems). It helps individuals adapt, choose, and modify their environment to achieve their goals, taking into account their cultural and social context (Sternberg et al., 2020). The underlying concept of successful intelligence is that intelligent individuals are those who better understand their strengths and weaknesses, emphasize and enhance their strengths, and simultaneously seek to address or correct their weaknesses. These strengths and weaknesses are broadly related to the three types of abilities: analytical, creative, and practical, in successful intelligence (Ergin et al., 2020).

Sternberg and Grigorenko (2003) explain how individuals with successful intelligence, by maintaining a balance between their analytical, creative, and practical thinking abilities, adapt to, change, and choose their environment. According to Sternberg, these abilities are flexible and can be improved through education and enrichment programs (Sternberg et al., 2020). Therefore, successful intelligence training, by providing an open space with access to abundant and diverse information, can challenge students' past ideas and thoughts, leading them toward generating innovative ideas and fresh perspectives (Azid & Md-Ali, 2020). Based on the reviewed information, it can be stated that Sternberg's successful intelligence training is one of the strongest and most referenced programs that, by providing opportunities for enriching students, can be effectively used (Azid & Md-Ali, 2020).

Considering the importance of cognitive empowerment in students, and given the cognitive, behavioral, and psychological challenges adolescents face at this stage of life, as well as the researcher's investigation of 12th-grade students in District 4 of Tehran, it has been shown that these students face numerous psychological, cognitive, behavioral, and other problems. For instance, students in this grade, due to personal, academic, and family stressors, demonstrate reduced ability to strive and overcome obstacles, hardship, and pressure. They also lack focus and motivation to achieve their goals. Furthermore, due to academic difficulties during the COVID-19 pandemic and the country's recent economic challenges, they exhibit a lack of positive self-confidence, a sense of control over life and change processes, and a lack of hope for the future. In terms of working memory or active memory, they demonstrate difficulties in directing behavior in complex activities such as reading comprehension, math, and academic abilities. Therefore, given the existing problems, this study aims to determine whether there is a significant difference between the effectiveness of cognitive hypnotherapy and successful intelligence training on the cognitive empowerment of male 12th-grade students in District 4 of Tehran. Additionally, the study seeks to identify which intervention has a greater impact on students' cognitive empowerment.

2. Methods and Materials

2.1. Study Design and Participants

This study adopted a quasi-experimental design with a pre-test, post-test, and follow-up approach. The research population consisted of male students in the 12th grade of secondary education who visited educational counseling centers in District 4 of Tehran during the academic year 2022. A convenience sampling method was employed to select participants. Among the students who visited the counseling centers, 45 individuals were chosen, with 15 students assigned to each of the experimental groups (cognitive hypnotherapy and successful intelligence training) and 15 students placed in the control group. The participants were matched based on their baseline cognitive empowerment scores to ensure comparability across groups.

2.2. Measures

2.2.1. Cognitive Empowerment

The primary tool for assessing cognitive empowerment was the Cognitive Empowerment Questionnaire developed by Hajihassani and Hajihassani (2018). This questionnaire measures various dimensions of cognitive empowerment, including feelings of competence, meaning, self-concept, belongingness, and trust. The reliability of the questionnaire was confirmed through Cronbach's alpha, which yielded values ranging from 0.85 to 0.91 for its subscales, indicating high internal consistency. Furthermore, the construct validity of the questionnaire was established through exploratory and confirmatory factor analysis, demonstrating good fit indices and appropriate factor loadings (Saeedzade & Rahmani, 2022).

2.3. Interventions

2.3.1. Cognitive Hypnotherapy

The cognitive hypnotherapy intervention focused on enhancing cognitive empowerment through techniques that

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address negative thought patterns, emotional regulation, and memory improvement. The intervention protocol was conducted over six weekly sessions, each lasting 60 minutes. The first session introduced participants to the concept of hypnosis, teaching them how to enter a relaxed state and use self-hypnosis techniques to manage stress and anxiety. In subsequent sessions, students were guided through cognitive restructuring exercises aimed at identifying and challenging negative beliefs related to their abilities, self-worth, and academic performance. Relaxation techniques, such as progressive muscle relaxation and deep breathing exercises, were incorporated to help students manage emotional responses to stressful situations. Throughout the sessions, suggestions were provided to enhance students' cognitive processing abilities, encouraging positive self-talk and goal-setting strategies. The final sessions focused on reinforcing the skills learned in earlier sessions and integrating these techniques into their daily routines. The intervention was designed to help students enhance their sense of control over their thoughts and behaviors, ultimately improving their cognitive empowerment and emotional regulation (Golden, 2012).

2.3.2. Successful Intelligence Training

The successful intelligence training intervention aimed to foster students' analytical, creative, and practical intelligence through structured activities and exercises. Over six weekly sessions, each lasting 90 minutes, students engaged in exercises designed to promote critical thinking, problem-solving, and adaptability to new situations. The first session introduced the concept of successful intelligence, encouraging students to identify their strengths and weaknesses in analytical, creative, and practical thinking. In the following sessions, students worked on tasks that required them to analyze complex problems, develop creative solutions, and apply these solutions in real-world contexts. They were encouraged to work in groups to simulate collaborative problem-solving situations, fostering both analytical and creative thinking. The practical intelligence aspect was addressed by engaging students in exercises where they had to adapt their problem-solving strategies to the cultural and social contexts of their lives. Each session included both individual and group activities that challenged students to think critically about academic and personal challenges they faced, with the aim of improving their ability to make informed decisions and adapt effectively to their environments. The final session involved a review of the skills learned and strategies for continuing to apply successful intelligence beyond the intervention. This training was designed to empower students to think more flexibly and creatively while enhancing their cognitive and emotional resilience in various life situations (Baramake et al., 2024).

2.4. Data Analysis

The data were analyzed using SPSS-26 software. Descriptive statistics, including means and standard deviations, were used to summarize the characteristics of the participants and the results of the pre-test, post-test, and follow-up assessments. To assess the effectiveness of the interventions, inferential statistical techniques were applied, including paired t-tests to compare within-group differences across the three time points and analysis of covariance (ANCOVA) to compare the effectiveness of the two experimental groups with the control group. A significance level of 0.05 was used for all statistical tests. The analysis also involved examining the long-term effects of the interventions by comparing the follow-up results with post-test scores to assess the sustainability of the changes in cognitive empowerment.

3. Findings and Results

The results presented in Table 1 show the mean and standard deviation scores for the study variables in the pre-test and post-test phases across three different groups: control group, experimental group 1 (cognitive hypnotherapy), and experimental group 2 (successful intelligence training). In the control group, the mean scores for the cognitive empowerment scales remained relatively stable from pre-test to post-test. In the experimental group 1 (cognitive hypnotherapy), a slight increase in the mean scores was observed in the post-test phase. However, the experimental group 2 (successful intelligence training) demonstrated a significant increase in the mean scores for cognitive empowerment scales between the pre-test and post-test phases. The Kolmogorov-Smirnov test for normality indicated that the data for each variable were normally distributed at a 95% confidence level for all groups.

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Table 1

Descriptive indices (mean, standard deviation) and Kolmogorov-Smirnov test for assessing normality of research variables across three groups

Group	Variable	Time	N	Mean	Standard Deviation	K-S	Significance
Control	Perceived Competence	Pre-test	15	28.93	5.10	1.32	0.03
		Post-test	15	29.26	5.16	0.56	1.54
	Perceived Meaningfulness	Pre-test	15	37.13	7.92	1.57	0.02
		Post-test	15	37.46	8.01	0.98	1.66
	Self-Concept	Pre-test	15	27.86	7.50	0.85	0.44
		Post-test	15	28.20	7.45	1.65	0.56
	Sense of Belonging	Pre-test	15	30.60	6.73	1.01	1.56
		Post-test	15	30.86	6.79	1.12	1.08
	Trust	Pre-test	15	48.66	8.90	1.32	0.66
		Post-test	15	48.93	8.87	1.78	0.47
Cognitive Hypnotherapy	Perceived Competence	Pre-test	15	28.66	4.96	1.02	0.78
		Post-test	15	29.53	4.65	0.23	1.12
	Perceived Meaningfulness	Pre-test	15	36.80	7.97	0.54	0.18
		Post-test	15	37.73	7.99	0.69	0.78
	Self-Concept	Pre-test	15	27.40	7.23	1.41	1.45
		Post-test	15	28.20	7.34	1.38	1.61
	Sense of Belonging	Pre-test	15	30.86	6.80	1.08	1.32
		Post-test	15	31.60	6.96	1.07	1.74
	Trust	Pre-test	15	49.49	8.94	1.46	0.37
		Post-test	15	49.80	8.93	0.81	0.54
Successful Intelligence Training	Perceived Competence	Pre-test	15	28.33	5.02	0.48	1.16
		Post-test	15	32.93	4.11	1.32	1.94
	Perceived Meaningfulness	Pre-test	15	37.13	7.89	1.12	1.32
		Post-test	15	40.66	7.43	1.45	1.51
	Self-Concept	Pre-test	15	27.00	7.20	1.67	1.45
		Post-test	15	32.73	6.27	1.32	1.62
	Sense of Belonging	Pre-test	15	30.53	6.81	1.64	1.48
		Post-test	15	34.66	6.64	1.54	1.36
	Trust	Pre-test	15	49.33	8.92	0.89	1.21
		Post-test	15	52.20	8.73	0.61	1.34

Furthermore, based on the F value obtained from Levene's test, there is no significant difference at the observed level. Therefore, the null hypothesis, which assumes the homogeneity of variances, is accepted. Additionally, the results indicated that the Box's M test for the group variable is not significant. Thus, the assumption of the homogeneity of the covariance matrix has been correctly satisfied for this assumption.

Table 2

Results of ANCOVA for the effectiveness of cognitive hypnotherapy on cognitive empowerment

Dependent Variable	Sum of Squares	Degrees of Freedom	Mean Squares	F Value	Significance Level	Eta Squared
Perceived Competence	1.77	1	1.77	5.07	0.034	0.181
Perceived Meaningfulness	0.78	1	0.78	3.29	0.082	0.125
Self-Concept	0.64	1	0.64	2.77	0.109	0.108
Sense of Belonging	1.05	1	1.05	4.44	0.046	0.162
Trust	1.17	1	1.17	3.67	0.068	0.138

Based on the results presented above and the F values obtained in Table 2, there is a minimal but significant difference between the mean scores of the cognitive empowerment variable between the cognitive hypnotherapy experimental group and the control group. Thus, there is a significant difference in the cognitive empowerment scale between the experimental group, which underwent cognitive

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hypnotherapy, and the control group, with the experimental group performing better (sig < 0.05).

Table 3

Results of ANCOVA for the effectiveness of successful intelligence training on cognitive empowerment

Dependent Variable	Sum of Squares	Degrees of Freedom	Mean Squares	F Value	Significance Level	Eta Squared
Perceived Competence	67.51	1	67.51	27.86	0.001	0.548
Perceived Meaningfulness	24.35	1	24.35	18.65	0.001	0.448
Self-Concept	322.19	1	322.19	15.59	0.001	0.404
Sense of Belonging	46.02	1	46.02	28.53	0.001	0.554
Trust	11.87	1	11.87	18.05	0.001	0.440

Based on the results presented above and the F values obtained in Table 3, there is a significant difference between the mean scores of the cognitive empowerment variable between the successful intelligence training group and the control group. Therefore, there is a significant difference in the cognitive empowerment scale between the experimental group, which underwent successful intelligence training, and the control group, with the experimental group performing better (sig < 0.05). According to the results of the ANCOVA test, both cognitive hypnotherapy and successful intelligence training methods performed better on the cognitive empowerment scale compared to the control group, with these differences being statistically significant. The subsequent results compare the cognitive empowerment scores of the cognitive hypnotherapy and successful intelligence training groups.

Table 4

Results of the independent T-test for comparing the mean cognitive empowerment in the effectiveness of cognitive hypnotherapy and successful intelligence training

Group 1	Group 2	Mean ± Standard Deviation	Mean Difference	p-value
Cognitive Empowerment	Cognitive Hypnotherapy	176.86 ± 35.69	193.20 ± 32.45	16.33

According to the information presented in Table 4, it can be concluded that, based on the p-value, since it is greater than 0.05, the null hypothesis (H0) is not rejected at a 99% confidence level. That is, although the mean of the cognitive empowerment scale is higher in the successful intelligence training group compared to the cognitive hypnotherapy group, this difference is not statistically significant. Therefore, the second sub-hypothesis of the research is not confirmed.

4. Discussion and Conclusion

The results indicated a minimal but statistically significant difference between the mean scores of the cognitive empowerment variable between the cognitive hypnotherapy experimental group and the control group. Therefore, there is a significant difference in the cognitive empowerment scale between the experimental group, which underwent cognitive hypnotherapy, and the control group, with the experimental group performing better (sig < 0.05). Additionally, a significant difference was found between the mean scores of the cognitive empowerment variable between the successful intelligence training group and the control group. Therefore, there is a significant difference in the cognitive empowerment scale between the experimental group, which underwent successful intelligence training, and the control group, with the experimental group performing better (sig < 0.05).

According to the results of the ANCOVA test, both cognitive hypnotherapy and successful intelligence training methods showed better performance on the cognitive empowerment scale compared to the control group, with these differences being statistically significant. Furthermore, although the mean score of the cognitive empowerment scale was higher in the successful intelligence training group compared to the cognitive hypnotherapy group, this difference was not statistically significant.

Based on the findings, it can be concluded that cognitive empowerment and working memory are essential components that need serious attention in dealing with issues faced by students. The results of empowerment include

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positive self-confidence, goal achievement ability, a sense of control over life and the processes of change, and also a sense of hope for the future. This construct is a very important concept that is widely used in industrial psychology. Working memory is one of the influential theoretical constructs in the field of neuro-cognition, and its primary function is to maintain accessible information in the absence of sensory input. The term working memory refers to a system responsible for manipulating and temporarily storing information. It is considered a comprehensive system that connects various long-term and short-term memory actions and subsystems.

Cognitive hypnotherapy integrates several fundamental methods, including cognitive restructuring, relaxation, systematic desensitization, guided imagery, and hypnosis skill training. By entering the unconscious mind, it is possible to change a person's thoughts and perspectives in such a way that their emotions and feelings improve, thus eliminating the negative consequences of self-hypnosis.

Another component that contributes to enhancing the psychological and cognitive well-being of individuals, particularly students, is successful intelligence. The underlying concept of successful intelligence is that intelligent individuals are those who better understand their strengths and weaknesses, emphasize their strengths, and work on correcting or compensating for their weaknesses. These strengths and weaknesses are widely related to three types of abilities: analytical, creative, and practical, in successful intelligence. Therefore, successful intelligence training, by creating an open space with access to vast and diverse information, can challenge students' past ideas and direct them toward generating original ideas and offering new perspectives (Azid & Md-Ali, 2020; Baramake et al., 2024; Sternberg, 2004).

Looking at the review of what has been discussed, it can be said that Sternberg's successful intelligence training is one of the strongest and most cited programs, which, by providing an opportunity to enrich students, can be used as an effective program.

One of the primary limitations of this study is its reliance on a relatively small sample size, which may limit the generalizability of the findings. Additionally, the study focused on a specific population of students, which may not represent the broader population, thus restricting the external validity. Furthermore, the use of self-report measures for assessing cognitive empowerment and related constructs may introduce bias, as participants may overestimate or underestimate their abilities or experiences. Lastly, the study employed a short-term intervention, and long-term effects of cognitive hypnotherapy and successful intelligence training on cognitive empowerment remain uncertain.

Future research could explore the long-term effects of cognitive hypnotherapy and successful intelligence training on cognitive empowerment, assessing the sustainability of these interventions over extended periods. It would also be beneficial to include a more diverse sample across different age groups, educational levels, and cultural backgrounds to determine the generalizability of the results. Additionally, future studies could incorporate objective measures, such as behavioral assessments or neurocognitive tests, to complement self-reported data and provide a more comprehensive understanding of the impact of these interventions. Furthermore, comparative studies could examine the effectiveness of these interventions in different contexts, such as in the workplace or clinical settings.

The findings of this study have important implications for educational and psychological interventions aimed at enhancing students' cognitive empowerment. The positive effects of cognitive hypnotherapy and successful intelligence training suggest that these methods can be integrated into educational curricula to foster greater self-confidence, goal achievement, and hope for the future among students. Implementing these approaches could help address cognitive and emotional challenges faced by students, particularly those struggling with academic or personal issues. Moreover, the results highlight the potential of using cognitive hypnotherapy and successful intelligence training as tools for enhancing psychological well-being and promoting lifelong learning skills, which are crucial for success in both academic and professional environments.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Each participant received an informed consent form to understand the study's objectives.

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