The Effectiveness of Schema Therapy on Health Anxiety and Health Resilience in Individuals Attending Neurological and Psychiatric Clinics

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Abstract

The aim of the present study was to determine the effectiveness of schema therapy on health anxiety and health resilience in individuals attending neurological and psychiatric clinics. The research method was quasi-experimental, utilizing a pretest-posttest design. The statistical population included adults attending neurological and psychiatric clinics in Sari city during the first three months of the year 2022. The research sample consisted of 30 individuals attending these clinics, who were conveniently selected and then randomly assigned to either the experimental group or the control group, with 15 participants in each group. Data collection tools included questionnaires on health anxiety and health resilience. Subsequently, the experimental group received 10 sessions of schema therapy, each lasting 120 minutes. Findings indicated that the mean scores of health anxiety and health resilience variables in the posttest of the experimental group were significantly different from the pretest. Therefore, schema therapy was effective in reducing health anxiety and enhancing health resilience among individuals attending neurological and psychiatric clinics.

Keywords: Schema therapy, health anxiety, health resilience, neurological and psychiatric clinics.

1. Introduction

Generally, psychologists in neurological and psychiatric clinics assist patients through therapeutic counseling; in other words, they play a supportive role in solving mental health issues. For instance, any of us may seek a psychologist's help when we experience feelings, thoughts, or behaviors that seem out of control, which can impact the quality of our lives, emotions, and relationships. We may also seek help in the face of acute issues for which we have no specific coping plan, such as severe illness, divorce, the death of a loved one, and psychological issues

in the workplace. Additionally, the use of alcohol or drugs can harm our health, emotions, relationships, and responsibilities, in which case the psychologist is the compassionate person who should help us organize our thoughts and feelings.

Health anxiety is a multidimensional construct encompassing emotional aspects (worry about health), behavioral aspects (reassurance seeking to alleviate fear of illness), cognitive aspects (preoccupation with bodily symptoms and sensations), and the strong belief of being ill, which is part of the concerns and worries about health despite medical evidence to the contrary (1). Health anxiety is characterized by persistent and severe worries about health, and those incapacitated by health anxiety are diagnosed with illness anxiety disorder (2). Health anxiety is a new diagnosis in the latest American psychiatric classification, somewhat replacing the disorder previously known as hypochondriasis (3).

Anxiety about health and fear of illness symptoms may stem from physiological arousal; thus, patients might misinterpret symptoms arising from increased autonomic system activity as signs of illness, leading to health anxiety. Health resilience refers to individuals who are more resistant to psychological stress and less prone to illness than most people. These individuals typically feel more control over their lives, have a greater sense of commitment to their actions, and are open to new ideas and changes (4). Resilience brings about a specific internal attitude that affects how people face various life challenges. Polak (1989), based on Kobasa's concept of resilience, introduced the concept of health resilience, which is more closely related to health and illness contexts. Health-related resilience indicates to what extent an individual is committed to health-related activities, perceives their health as controllable, and sees health stressors as opportunities for personal growth rather than threats (5, 6). Individuals with high health resilience, while positively assessing events, use effective coping strategies to deal with diseases, maximize their resources, and tend to reassess health stressors as beneficial for growth and learning, not as harmful or threatening (7). Contrada (2001) showed that individuals with high resilience assess stressful events more positively and controllably than those with low resilience. Studies by Wineman (2007 showed that individuals' resilience could reduce stress and enhance adaptation and mental health. Stress and difficult conditions in nursing jobs can have serious negative effects on an individual's

physical and psychological efficiency, severely disrupting their physical and social health (8).

Schema therapy was first introduced by Young and colleagues (1990) as an integrated treatment predominantly based on concept formation. Moreover, schema therapy combines the fundamental principles of cognitive-behavioral therapy, attachment theory, Gestalt, object relations, structuralism, and psychoanalysis into a single treatment model. In schema therapy, besides raising awareness, cognitive, emotional, interpersonal, and behavioral changes are also emphasized. The aim is for individuals to use more adaptive coping styles instead of maladaptive ones, enabling them to fulfill their basic emotional needs. This involves focusing on the role of emotions in the change process and employing techniques related to early attachments and interpersonal behaviors (9, 10). Recent studies indicate that schema therapy is more effective compared to other approaches. It has the ability to address problems ignored by cognitive approaches, such as dysfunctional patterns in close relationships and changing problematic childhood memories (11-13). Therefore, the current research seeks to answer the question: Is schema therapy effective in reducing health anxiety and enhancing health resilience among individuals attending neurological and psychiatric clinics?

2. Methods and Materials

2.1. Study Design and Participants

The research method was quasi-experimental, utilizing a pretest-posttest design. The statistical population included adults attending neurological and psychiatric clinics in the city of Sari during the first three months of the year 2022. The research sample consisted of 30 individuals attending these clinics, who were conveniently selected and then randomly assigned to either the experimental group or the control group, with 15 participants in each group. Data collection tools included questionnaires on health anxiety and health resilience.

2.2. Measures

2.2.1. Health Anxiety

The Health Anxiety Questionnaire, a short form developed by Salkovskis and colleagues (2002), is designed to assess health anxiety. This questionnaire consists of 18 questions and includes three components: general health worry, disease contraction, and disease consequences,

measured on a four-point Likert scale with items such as "If I feel something in my body or notice a change, I rarely worry about the cause." The score given by respondents to the 18-item questions of the Health Anxiety Questionnaire represents health anxiety. Each item has four options, each describing the individual's perception of health and illness in a statement. The respondent must select the statement that best describes them. Scoring for each item ranges from 0 to 3, with higher scores indicating greater health anxiety. To calculate the score for each subscale, add up the scores of the items belonging to that subscale. To calculate the overall questionnaire score, add up the scores of all the questionnaire items. The score range for this questionnaire is between 0 and 54, with higher scores indicating higher levels of health anxiety and vice versa. Total your scores from the above 18 statements. The minimum possible score is 0, and the maximum is 54. A score between 0 and 18 indicates low levels of health anxiety, a score between 18 and 36 indicates moderate levels of health anxiety, and a score above 36 indicates high levels of health anxiety. Validity concerns whether a measurement tool measures what we think it does. In the study by Nargesi et al. (2017), the content, face, and criterion validity of this questionnaire were assessed as suitable. Reliability refers to the degree of consistency of a measurement tool in measuring whatever it is supposed to measure, i.e., how consistently a measuring instrument produces the same results under the same conditions. The Cronbach's alpha coefficient calculated in the study by Nargesi et al. (2017) for this questionnaire was estimated to be above 0.7 (14).

2.2.2. Health Resilience

The Health Resilience Questionnaire is a self-report questionnaire consisting of 24 items and 4 subscales: health value, internal health locus of control, external health locus of control, and perceived health competence, developed by Giehardt et al. (2001). Each item of the questionnaire is a statement referring to the individual's health status. In the studies by Giehardt and colleagues (2001), the Cronbach's alpha coefficients for the subscales of health value, internal health control base, external health control base, and perceived health competence were reported as 0.79, 0.66, 0.67, and 0.69, respectively, in a sample of the general population, and 0.78, 0.65, 0.58, and 0.76, respectively, in a student sample. In the study by Tarshabi and colleagues (2010), Cronbach's alpha obtained for the entire questionnaire was 0.58, 0.71, and 0.82 for the subscales.

The test-retest reliability coefficient for the entire scale was 0.91, and for the subscales, it was 0.74 and 0.91, all significant at the 0.95 level. To determine the scale's validity, evidence related to construct validity was examined, and a factor analysis was performed to assess construct validity. The results of the factor analysis of the scale based on four main factors showed that this scale is saturated with the four main factors of health value, internal health control location, external health control location, and perceived health competence. This questionnaire uses a 5-point Likert scale (strongly disagree: 1, disagree: 2, neither agree nor disagree: 3, agree: 4, strongly agree: 5). Questions 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, and 22 are scored inversely. This questionnaire consists of 4 subscales: Health Value (HV; questions: 1-2-3-4-5-6), Internal Health Locus of Control (IHLOC; questions: 7-8-9-10-11), External Health Locus of Control (EHLOC; questions: 12-13-14-15-16-17-18), and Perceived Health Competence (PHC; questions: 19-20-21-22-23-24). The total score of all questions gives the overall test score for health resilience. The highest score an individual can achieve on this questionnaire is 120, and the lowest score is 24. A higher score indicates greater health resilience, and a lower score, close to 24, indicates lower resilience (9, 12, 15).

2.3. Intervention

The experimental group received 10 sessions of schema therapy, each lasting 120 minutes (10).

Session 1: Introduction and Assessment

The first session is dedicated to building rapport with the participants and providing an overview of schema therapy. The therapist introduces the concept of schemas and explains how they can affect health anxiety and resilience. An initial assessment is conducted to understand the participants' current health anxieties, resilience levels, and identify dominant maladaptive schemas.

Session 2: Identifying Maladaptive Schemas

Participants are guided to identify specific maladaptive schemas contributing to their health anxiety. Through reflective exercises and discussions, individuals learn to recognize patterns of negative thinking and behaviors related to these schemas. The therapist provides education on the origin of these schemas and their impact on current functioning.

Session 3: Linking Schemas to Health Anxiety

The focus of this session is on understanding the connection between identified maladaptive schemas and

health anxiety. Participants explore how their schemas trigger or exacerbate their anxieties about health. Techniques such as cognitive restructuring are introduced to challenge and reframe negative thoughts.

Session 4: Emotional Awareness and Regulation

Participants engage in exercises to increase emotional awareness and learn strategies for emotional regulation. The therapist introduces techniques for managing intense emotions triggered by health-related fears, including mindfulness and grounding techniques.

Session 5: Experiential Techniques

This session employs experiential techniques such as imagery rescripting and chair work to address and modify deep-rooted emotional responses linked to maladaptive schemas. Participants are encouraged to confront and reprocess past experiences that have contributed to their current anxieties.

Session 6: Building Health Resilience

The therapist focuses on strategies to build health resilience. Participants learn about resilience factors and engage in activities designed to strengthen these factors, including problem-solving skills, positive relationship building, and fostering a positive self-image.

Session 7: Adaptive Coping Strategies

Participants are introduced to adaptive coping strategies for managing health anxiety. This includes developing a healthier lifestyle, engaging in regular physical activity, practicing relaxation techniques, and establishing a supportive social network.

Session 8: Behavioral Experiments

The session involves designing and conducting behavioral experiments to test the validity of participants' fears and beliefs about health. These experiments aim to provide new, corrective experiences that challenge maladaptive schemas.

Session 9: Schema Mode Work

Participants explore different schema modes that get activated in response to health-related stress. The therapist helps individuals understand how these modes influence their behavior and emotions and teaches strategies for shifting to more adaptive modes.

Session 10: Consolidation and Future Planning

The final session is dedicated to consolidating the skills learned throughout the therapy and planning for the future. Participants set personal goals related to managing health anxiety and maintaining health resilience. The therapist provides guidance on continuing to apply schema therapy techniques independently.

2.4.   Data Analysis

This study adopted analysis of covariance (ANCOVA) for data analysis using SPSS-22.

3.   Findings and Results

Table 1 information indicates that the mean scores of health anxiety and health resilience in the posttest of the experimental group are different and have changed compared to the pretest.

Table 1

Mean and Standard Deviation of Pretest and Posttest Scores for Health Anxiety and Health Resilience

Variables	Group	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD
Health Anxiety	Control	39.87	5.68	37.37	5.93
	Experiment	38.35	5.57	29.35	4.53
Health Resilience	Control	49.78	6.69	51.61	6.37
	Experiment	50.12	6.91	62.27	7.41

Given the significance level of the Kolmogorov-Smirnov test (p>0.05), it can be stated that the data for both variables in the pretest and posttest are normally distributed. Since the distribution of research variables in the pretest and posttest was normal, and the measurement scale of the variables was interval, the parametric test of analysis of covariance was used to analyze the data.

Furthermore, given that the Levene's F-test for the equality of variances of the research variables in the posttest in the experimental and control groups among groups is not significant (p>0.05), the scores of the research groups in the posttest have equal variances. Thus, another condition for performing the covariance test is met.

Table 2

Analysis of Covariance (ANCOVA) Results for Schema Therapy on Health Anxiety

Source	Sum of Squares	Degrees of Freedom (df)	Mean Square	F-value	Significance Level (p)	Power
Pretest	21.837	1	21.837	0.521	0.481	0.126
Group	296.183	1	296.183	8.356	0.006	0.653
Error	756.623	27	28.023			
Total	1138.000	29				

Table 3

Analysis of Covariance (ANCOVA) Results for Schema Therapy on Health Resilience

Source	Sum of Squares	Degrees of Freedom (df)	Mean Square	F-value	Significance Level (p)	Power
Pretest	39.912	1	39.912	0.623	0.512	0.145
Group	358.478	1	358.478	9.456	0.008	0.712
Error	829.569	27	30.724			
Total	1269.000	29				

As observed in Table 2, the effectiveness of schema therapy on health anxiety among individuals attending neurological and psychiatric centers for differences between groups (control and experimental) after adjusting the means of both groups based on the pretest score is statistically significant. Therefore, it can be concluded that schema therapy is effective in reducing health anxiety. Also, the means of the two groups indicate that the scores of the subjects in the experimental group have decreased in the posttest compared to the control group. Therefore, it can be concluded that schema therapy has been effective in reducing health anxiety among individuals attending neurological and psychiatric clinics.

As seen in **Error! Reference source not found.**, the effectiveness of schema therapy on health resilience among individuals attending neurological and psychiatric centers for differences between groups (control and experimental) after adjusting the means of both groups based on the pretest score is statistically significant. Therefore, it can be concluded that schema therapy is effective in enhancing health resilience. Also, the means of the two groups show that the scores of the subjects in the experimental group have increased in the posttest compared to the control group. Therefore, it can be concluded that schema therapy has been effective in enhancing health resilience among individuals attending neurological and psychiatric clinics.

4. Discussion and Conclusion

The findings showed that the mean scores of the health anxiety variable in the posttest of the experimental group were significantly different from the pretest. Therefore, schema therapy has been effective in reducing health anxiety among individuals attending neurological and psychiatric clinics. The results of this study are consistent with the findings of previous studies (3, 6, 11-15).

In explaining this finding, it should be noted that health anxiety is a widespread cognitive disorder that forms through a misperception about bodily symptoms and changes, resulting from an individual's beliefs about illness or health. Individuals with severe health anxiety are not only worried about diseases but also about their inability to control worries related to illness and health. This worry about worry may encourage some individuals to seek treatment for health anxiety, as coping methods for stresses and psychological anxieties can somewhat improve mental conditions. In schema therapy, the focus is on increased awareness and understanding of the role of schemas in maintaining problematic situations and also on modifying the activation and operation of schemas (6, 14). Therefore, by targeting schemas through various techniques and exercises in schema therapy, maladaptive schemas of these individuals are modified. With the modification of underlying beliefs and cognitions that cause feelings of insecurity, their perception of security increases. Thus, schema therapy corrects individuals' perceptions, imaginations, and beliefs, enabling them to use more adaptive coping styles in relation to their environment and different situations, placing them on the path to environmental adaptation.

Furthermore, the findings showed that the mean scores of the health resilience variable in the posttest of the experimental group were significantly different from the pretest. Therefore, schema therapy has been effective in enhancing health resilience among individuals attending

neurological and psychiatric clinics. The results of this study align with the previous research (3, 6, 8, 11-15).

Schema therapy addresses the deepest level of cognition, targeting early maladaptive schemas and assisting individuals in overcoming these schemas through cognitive, experiential (emotional), behavioral, and interpersonal strategies. The primary goal of this psychotherapeutic model is to create psychological awareness and increase conscious control over schemas, with the ultimate goal being the improvement of schemas and coping styles. Therefore, schema therapy helps these individuals by changing the deepest cognitions to overcome maladaptive schemas that make their complementary attitudes negative and aids them in developing more adaptive attitudes. Schemas always cause a bias in an individual's interpretation of events, appearing as misunderstandings, distorted attitudes, incorrect assumptions, and unrealistic goals and expectations. The human tendency for cognitive consistency leads to misinterpretation of situations in a way that strengthens schemas, emphasizing data consistent with the schema and disregarding or devaluing data that contradicts it (6, 15). Although schemas are stable, they can be controlled through learning. Health-related resilience is a personality trait that, through control, combativeness, and commitment, enables individuals to adapt to serious and chronic health problems (6).

The study on the effectiveness of schema therapy on health anxiety and health resilience has several limitations that warrant attention. First, the small sample size and the specific demographic characteristics of participants limit the generalizability of the findings to broader populations. Additionally, the intervention's reliance on self-reported measures might introduce biases in reporting health anxiety and resilience levels. The short duration of the therapy and the lack of long-term follow-up assessments may not fully capture the enduring impact of schema therapy on health anxiety and resilience. Furthermore, the study did not include a comparison with other therapeutic interventions, making it challenging to ascertain the unique effectiveness of schema therapy.

Future research should aim to address the limitations of the current study by incorporating larger and more diverse samples to enhance the generalizability of the findings. Comparative studies that evaluate the effectiveness of schema therapy against other evidence-based treatments for health anxiety and resilience can provide deeper insights into its relative efficacy. Longitudinal studies with extended follow-up periods are crucial for assessing the long-term sustainability of the therapy's benefits. Additionally, incorporating objective measures alongside self-reported data could enrich the understanding of the therapy's impact on health anxiety and resilience.

The findings from this study suggest several implications for clinical practice. Mental health professionals working in neurological and psychiatric settings could integrate schema therapy into their treatment repertoire for individuals with significant health anxiety, leveraging its structured approach to address underlying maladaptive schemas. Training and professional development opportunities in schema therapy for clinicians could enhance their skills in delivering this intervention effectively. Additionally, healthcare settings might consider incorporating schema therapy as part of holistic treatment plans, potentially including it in wellness programs aimed at preventing the onset or exacerbation of health anxiety among at-risk populations. This approach underscores the importance of early intervention and the adoption of comprehensive strategies to foster health resilience in clinical settings.

Authors' Contributions

Arezo Alizade Moghaddam played a pivotal role in conceptualizing the study's design and methodology. She also led the drafting of the manuscript, ensuring the research question was clearly addressed, and the findings were accurately reported.

Tahmineh Vaslehchi was instrumental in coordinating the research project. She was responsible for data analysis and interpretation, applying her expertise in statistical methods to validate the study's results. Additionally, Tahmineh managed the submission process and correspondence during the publication phase.

Zahra Azimi Takami contributed significantly to the literature review, gathering relevant studies and theoretical frameworks to establish a solid foundation for the research. Her efforts were crucial in situating the study within the broader context of psychological interventions for health anxiety and resilience.

Fatemeh Azimi Takami was key in the data collection process, overseeing the recruitment of participants, and ensuring the integrity of the data gathered. She also played a role in the initial data analysis, working closely with Tahmineh to prepare the data for further statistical examination.

Sakineh Kiani focused on the practical aspects of implementing the schema therapy sessions. Her clinical expertise was vital in designing the intervention protocol, delivering the therapy sessions to participants, and providing insights into the therapeutic process for inclusion in the discussion of the study's findings.

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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Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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