Comparison of the Effectiveness of Online Narrative Therapy and Cognitive Behavioral Therapy on Mental Health and Adherence to Treatment in Cancer Patients with Low Psychological Hardiness

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Article Info

ABSTRACT

Objective: Cancer is among the diseases that can cause various psychological issues for its sufferers, necessitating the discovery of effective methods to assist these individuals. This research aimed to compare the effectiveness of online narrative therapy and cognitive-behavioral therapy on mental health and adherence to treatment in cancer patients with low psychological hardiness.

Methods and Materials: This was a quasi-experimental study conducted using a pre-test-post-test design with two experimental groups and one control group. The study population comprised all cancer patients attending hospitals in Tehran in 2022. The sample consisted of 45 patients selected through purposive sampling and randomly assigned to three groups: online narrative therapy, cognitive-behavioral therapy, and a control group. Data were collected using the General Health Questionnaire by Goldberg and Hiller (1972) and the Treatment Adherence Scale by Madanloo (2018). Data were analyzed using MANCOVA and Bonferroni post-hoc tests with SPSS software version 22.

Findings: Results indicated significant differences between the online narrative therapy and cognitive-behavioral therapy groups in terms of general health dimensions (physical health, anxiety, and social functioning disturbance) (P<0.01), with online narrative therapy showing greater effectiveness in these dimensions. However, no significant difference was found in treatment adherence between the online narrative therapy and cognitive-behavioral therapy groups.

Conclusion: According to the findings of this study, both narrative and cognitive-behavioral therapies can be effective methods for improving mental health and treatment adherence in cancer patients. In this context, online narrative therapy may be more efficient.

***Keywords:** Narrative Therapy, Cognitive-Behavioral Therapy, Mental Health, Treatment Adherence, Psychological Hardiness.*

1. Introduction

Among the most significant health issues in contemporary societies are chronic diseases such as cancer, which can severely impact patients' health and quality of life (Nayak et al., 2017). In some countries, cancer is considered the second leading cause of death after cardiovascular diseases (Rawla et al., 2019). In Iran, cancer is the third leading cause of death following cardiovascular diseases and accidents (Rahimi Pordanjani et al., 2016). Cancer is a serious, life-threatening disease with negative physical and psychological effects on patients. Due to the chronic nature of cancer, patients must undergo long-term treatment with chemotherapy drugs, which can lead to side effects such as nausea, hair loss, fatigue, muscle pain, skin burns, weight changes, and mental and emotional problems. Furthermore, repeated hospitalizations for treatment can prevent the continuation of a normal life (Abbasi et al., 2013).

Accepting the reality of having cancer is usually very difficult for patients and affects their emotional state during cancer treatment. Some cancer patients experience mental health issues such as anxiety, depression, post-traumatic stress disorder, adjustment disorders, social phobia, and organic mental disorders (Jean & Syrjala, 2017). Although anti-cancer medical treatments like radiotherapy and surgical oncology have made significant advances, cancer still threatens the mental health and quality of life of patients, as previous research has shown that cancer patients face more difficulties dealing with negative emotions and show a lower quality of life in the survivorship phase (Chen et al., 2018; MacDonald et al., 2021; Perez-Tejada et al., 2021). This issue may arise from the side effects of aggressive cancer treatments, financial problems, difficulties in accessing affordable health insurance, and employment opportunities (Miller et al., 2019; Nipp et al., 2017). Ultimately, cancer patients are more vulnerable to threats to their physical and mental health.

An important issue related to cancer and other chronic diseases is the commitment and adherence to treatment (Danielson et al., 2019). Commitment to treatment, along with lifestyle modifications, helps reduce symptoms and complications of the disease and improves quality of life (Mirkarimi et al., 2018; Seyed Fatemi et al., 2018). Treatment follow-up is a broader term that ranges from "efforts for treatment" to "commitment to treatment," indicating the patient's attention to the disease even in the absence of symptoms (Modanloo, 2018). A significant number of patients do not follow prescribed treatments, and adherence and commitment rates among chronic patients are low, ranging from 0 to 100 percent. In the Iranian population, this rate has been reported between 12.7% and 86.3% (Rwegerera et al., 2018). Insufficient commitment to treatment may limit the effectiveness of prescribed treatments, leading to disappointing treatment outcomes. Therefore, promoting commitment and adherence to treatment is one way to prevent concerning outcomes of chronic diseases (Saarti et al., 2016). Research has shown that control of chronic diseases is not solely in the hands of doctors and other healthcare providers but also largely in the hands of patients (Lindsay et al., 2011). Thus, it is crucial for healthcare providers to support and encourage patients to increase adherence and commitment and to successfully lead healthier lives, as understanding patients' perceptions and experiences seems essential (Danielson et al., 2019).

Therefore, considering the aforementioned points, cancer patients, due to their disease, experience severe psychological disturbances, highlighting the necessity to strengthen their psychological foundations to maintain high morale in the face of their illness and to increase their commitment and adherence to treatment. Hence, implementing interventions is crucial, and it is necessary to select and use the most effective among various psychological interventions; thus, this research was conducted with the aim of comparing the effectiveness of online narrative therapy and cognitive-behavioral therapy in improving mental health and commitment to treatment in cancer patients.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a quasi-experimental design, utilizing a pre-test-post-test format with two experimental groups (the online narrative therapy group and the cognitive-behavioral therapy group) and a control group. The study population included all cancer patients visiting hospitals in Tehran in 2022. Since it was not possible to accurately estimate the total population size, and as large sample sizes in experimental designs can lead to a lack of control over intervening variables, it was noted that the experimental studies could have a minimum of 15 participants per group. Therefore, from the population, 45 patients were selected based on the research's eligibility criteria through purposive sampling and were randomly assigned to the online narrative therapy group (15 patients), the cognitive-behavioral therapy

group (15 patients), and the control group (15 patients). Inclusion criteria were a cancer diagnosis, at least 6 months of disease history, being aged between 20 and 50 years, absence of psychiatric diseases, low scores on the psychological hardiness test, and usage of psychiatric medications in patients based on psychological interviews and consent to participate in the treatment. Exclusion criteria included missing more than one session, utilizing other psychotherapeutic and counseling services during the sessions, and the participant's unwillingness to continue participating, necessitating their exclusion by the researcher. It's noteworthy that fortunately, there was no dropout in the study groups. To adhere to ethical considerations, participants were informed that this research aimed to assist and provide them with practical information, their information would remain confidential, and they could withdraw from the study if they wished. Their verbal consent was obtained. The control group did not receive any treatment. The cognitive-behavioral therapy group underwent a training course based on the protocol by Moghadam and colleagues (2015), and the online narrative therapy group received a training course based on the therapeutic program by White and Epston (1990) over 8 one-hour sessions, once a week, according to the discretion of psychology professors (Moghadam et al., 2015; White & Epston, 1990).

2.2. Measures

2.2.1. Mental Health

The GHQ-28 by Goldberg consists of 28 items and 4 subscales, assessing the individual's mental state over the past month. Each subscale, addressing somatic symptoms, anxiety or sleep disorders, social dysfunction, and depression, contains 7 questions. Scores are assigned based on the severity spectrum in the questionnaire (very much, moderately, a little, very little) and calculated based on the classification of questions, frequency, and percentage of each dimension. The scoring method is based on a Likert scale, where "very little" scores 3, "a little" scores 2, "moderately" scores 1, and "very much" scores 0. The total score ranges from 0-84. A general health score between 0-23 is considered satisfactory, and scores above 23 indicate unsatisfactory health. The GHQ has been tested in various studies and its reliability and validity have been established (Noorbala et al., 2009). The reliability of the tool in this study was reported as 0.85 using Cronbach's alpha.

2.2.2. Treatment Adherence

Designed and psychometrically evaluated by Madanloo (2018) for chronic diseases, this questionnaire contains 40 questions across 7 domains: concern in treatment (9 questions), willingness to participate in treatment (7 questions), ability to adapt treatment to life (7 questions), integration of treatment into life (5 questions), insistence on treatment (4 questions), commitment to treatment (5 questions), and measures in implementing treatment (3 questions). The measuring scale is a 6-point Likert scale ranging from absolutely (score 5) to not at all (score 0), with reverse scoring for some statements. Thus, the maximum and minimum scores for each category can be calculated. Scoring is positive-oriented, meaning higher scores are given for more desirable trait features. In Madanloo's research, the internal consistency of the questionnaire was established with a Cronbach's alpha of 0.921, and the test-retest reliability over a two-week interval was confirmed with an ICC of 0.92 (Modanloo, 2018). The reliability of the tool in this study was also reported as 0.85 using Cronbach's alpha.

2.3. Interventions

2.3.1. Cognitive-Behavioral Therapy

First session: Introduction and getting to know the patient, pre-test administration, setting treatment goals, stating session rules, introducing cognitive-behavioral therapy, reviewing cancer and its related problems, and relaxation technique training.

Second session: Recording negative and dysfunctional thoughts and beliefs, using relaxation techniques, and assigning homework.

Third session: Feedback from the previous session and homework review, teaching the downward arrow technique for identifying schemas and core beliefs, using relaxation techniques.

Fourth session: Preparing a list of core beliefs, examining the patient's beliefs through objective analysis (judgment and arbitration), using relaxation techniques.

Fifth session: Using various cognitive analysis methods and encouraging the patient to reassess their beliefs, using relaxation techniques.

Sixth session: Countering automatic thoughts, thought stopping, using relaxation techniques.

Seventh session: Focusing on cognition over feelings, understanding and feelings associated with cancer, using relaxation techniques.

Eighth session: Reviewing conditioning, antecedents, and consequences, Q&A, receiving feedback, post-test, and farewell.

2.3.2. Online Narrative Therapy

First session: Introduction and getting to know the patient, pre-test administration, setting treatment goals, stating session rules, reviewing cancer and its related problems, introducing narrative therapy, sample work, and discussing problematic stories.

Second session: Objectification and externalization of the problem, naming the problem, identifying problematic words, and starting metaphor construction.

Third session: Continuing metaphor construction, examining problematic metaphors and their connection to life narrative and stance towards the problem, beginning deconstruction.

Fourth session: Deconstruction phase: deconstructing the problem through life exceptions, narrative analysis, attitude towards the problem, and the reciprocal effects between the individual and the problem.

Fifth session: Reconstruction phase: new metaphors, mental representations of life situations with the new metaphor, reality construction by the individual, and starting narrative construction.

Sixth session: Enriching the new story with unique strategies, reviewing the story and its meaning for the future.

Seventh session: Consolidation phase: living in the new story, answering questions, and rewriting past stories.

Eighth session: Exploring the meaning of life, external documentation, enrichment, and encouraging the individual to continue the story, Q&A, receiving feedback, post-test, and farewell.

2.4. Data analysis

Descriptive analysis involved calculating statistical indices for each research variable, while inferential statistics utilized the Analysis of Covariance (ANCOVA) test and SPSS software version 22.

3. Findings and Results

In the descriptive section of the research samples, the mean and standard deviation of age were respectively 31.67 and 8.91 for the cognitive-behavioral therapy group, 40.93 and 8.27 for the online narrative therapy group, and 30.27 and 9.00 for the control group.

Table 1

Descriptive Statistics of Research Variables by Group

Variable	Group	Pre-test Mean (SD)	Post-test Mean (SD)
Mental Health			
Physical Symptoms	Cognitive-Behavioral Therapy	17.93 (1.16)	6.67 (6.59)
	Online Narrative Therapy	17.27 (1.48)	11.73 (3.91)
	Control	19.07 (1.13)	1.94 (2.03)
Anxiety	Cognitive-Behavioral Therapy	17.47 (1.92)	7.53 (7.37)
	Online Narrative Therapy	16.47 (3.48)	12.27 (5.28)
	Control	17.87 (1.44)	1.45 (1.17)
Social Functioning Disorder	Cognitive-Behavioral Therapy	17.93 (1.48)	5.20 (6.15)
	Online Narrative Therapy	17.07 (2.08)	11.47 (7.28)
	Control	18.00 (1.25)	18.60 (1.54)
Depression	Cognitive-Behavioral Therapy	19.13 (2.61)	12.73 (6.30)
	Online Narrative Therapy	18.33 (1.44)	14.20 (3.78)
	Control	17.67 (1.17)	18.27 (0.96)
Adherence to Treatment	Cognitive-Behavioral Therapy	51.93 (10.13)	85.93 (33.53)
	Online Narrative Therapy	54.60 (13.05)	89.67 (38.36)
	Control	56.00 (2.59)	59.40 (3.94)

Table 1 shows the mean and standard deviation of mental health variables and adherence to treatment in both experimental groups (online narrative therapy and cognitive-behavioral therapy) and the control group at pre-test and

post-test stages. Examining the assumptions of covariance analysis, the results indicated that the assumptions for conducting covariance were met, hence covariance results were reported as follows:

Table 2

ANCOVA Results for Between-Group Effects on Mental Health Variables and Adherence to Treatment

Source of Variation	Variable	Sum of Squares	df	Mean Square	F-value	Significance (p)
Group						
	Physical Health	386.94	2	193.47	16.29	< .001
	Anxiety	630.77	2	315.38	10.17	< .001
	Social Functioning Disorder	306.53	2	153.27	4.02	.027
	Depression	68.42	2	34.21	3.61	.038
	Adherence to Treatment	6578.68	2	3289.34	3.56	.039
Error						
	Physical Health	403.63	34	11.87		
	Anxiety	1054.20	34	31.00		
	Social Functioning Disorder	1293.58	34	38.04		
	Depression	321.47	34	9.45		
	Adherence to Treatment	31385.26	34	923.09		

According to Table 2, the F-statistic was significant (P<0.05) with values of 16.29 for physical health, 10.17 for anxiety, 4.02 for social functioning disorder, 3.61 for depression, and 3.56 for adherence to treatment. This indicates that there were significant differences between the study groups in terms of mental health variables and adherence to treatment. Pairwise comparisons between groups were conducted using the Bonferroni post-hoc test, with results as follows:

Table 3

Bonferroni Post-hoc Test Results for Pairwise Group Comparisons at Post-test for Mental Health Variables and Adherence to Treatment

Variable	Comparison	Mean Difference	Standard Error	Significance (p)
Mental Health				
Physical Health	Online Narrative Therapy vs. Cognitive-Behavioral Therapy	-5.07	1.67	.013
	Online Narrative Therapy vs. Control	-11.47	1.67	< .001
	Cognitive-Behavioral Therapy vs. Control	-6.40	1.67	< .001
Anxiety	Online Narrative Therapy vs. Cognitive-Behavioral Therapy	-4.73	1.92	.05
	Online Narrative Therapy vs. Control	-10.80	1.92	< .001
	Cognitive-Behavioral Therapy vs. Control	-6.07	1.92	< .001
Social Functioning Disorder	Online Narrative Therapy vs. Cognitive-Behavioral Therapy	-6.27	2.03	.01
	Online Narrative Therapy vs. Control	-13.40	2.03	< .001
	Cognitive-Behavioral Therapy vs. Control	-7.13	2.03	< .001
Depression	Online Narrative Therapy vs. Cognitive-Behavioral Therapy	-1.47	1.56	1
	Online Narrative Therapy vs. Control	-5.53	1.56	.003
	Cognitive-Behavioral Therapy vs. Control	-4.07	1.56	.03
Adherence to Treatment				
	Online Narrative Therapy vs. Cognitive-Behavioral Therapy	-3.73	10.77	1
	Online Narrative Therapy vs. Control	26.53	10.77	.05
	Cognitive-Behavioral Therapy vs. Control	30.27	10.77	.02

Table 3 shows the results of the Bonferroni post-hoc test for pairwise comparisons between groups. Significant differences were found between the experimental groups (online narrative therapy and cognitive-behavioral therapy) and the control group in dimensions of physical health, anxiety, and social functioning disorder (P<0.05), with online narrative therapy having a greater effect in these dimensions compared to cognitive-behavioral therapy. However, there was no significant difference between the online narrative therapy and cognitive-behavioral therapy groups in the depression dimension of general health and the adherence to treatment variable (P>0.05).

4. Discussion and Conclusion

The present research aimed to compare the effectiveness of online narrative therapy and cognitive-behavioral therapy on mental health and adherence to treatment in cancer

patients with low psychological hardiness. The results showed that online narrative therapy was effective and led to improvements in mental health dimensions and adherence to treatment in cancer patients. This research aligns with previous findings confirming the efficacy of narrative therapy in other target populations (Basharpoor et al., 2019; Sajadian et al., 2017; Sun et al., 2022).

The findings regarding narrative therapy's performance in cancer patients provide a deeper understanding of cancer patients' experiences. Four main advantages of narrative therapy practice for cancer patients include: 1- reducing the gap between patients and physicians in decision-making, 2- being a therapeutic path, 3- maintaining patients' connection with the social world, and 4- aiding patients in reflection, self-awareness, and self-knowledge (Yang et al., 2020). Sharing information is one of the most valuable contents utilized in narrative therapy. Studies have shown that narrative therapy is an effective approach through which individuals share significant messages and experiences (Bowles, 1995). Many studies in various healthcare settings have demonstrated that one of the primary functions of narrative therapy practice is information provision (Høybye et al., 2005). Stories from narrative therapy are not only beneficial for cancer patients to understand the disease process and make treatment decisions but also for healthcare professionals to provide empathetic, reflective, professional, and trustful care (Charon, 2001). Although there are other tools for message transmission, narratives still play a crucial role in bridging the gap between patients and healthcare professionals because they are more appealing to patients, especially when relatable. Information presented in narrative form is better retrieved and understood than information presented in other formats (Green et al., 2003).

Regarding the effects of cognitive-behavioral therapy, the results showed that it was also effective in improving mental health dimensions and adherence to treatment in cancer patients. This research is consistent with previous findings that have confirmed the efficacy of cognitive-behavioral therapy in other target groups (Greer et al., 2010; Hofmann et al., 2012; Taghipour et al., 2020; van de Wal et al., 2018).

Cancer patients experience significant stress and anxiety due to their condition, often catastrophizing the situation and engaging in rumination (Tang et al., 2011). Cognitive-behavioral therapy focuses on educating patients about "psychological education, identifying core thoughts and beliefs, cognitive restructuring, instilling motivational thoughts/beliefs, and developing new skills, stress and cancer crisis management, problem-solving, coping

strategies, and leisure activities" (Blumenstein et al., 2022). Cognitive-behavioral therapy targets cancer patients' thoughts and rumination, teaching them how to counter these thoughts. Relaxation techniques embedded in cognitive-behavioral therapy help patients maintain calmness and then identify and counter their disruptive thoughts (Dobson & Dozois, 2021). Cognitive-behavioral therapy, by offering skills such as confronting death, cognitive assessment of dysfunctional thoughts, increasing enjoyment of life, and a health-oriented lifestyle, reduces depression and other psychological disturbances in cancer patients (Furer & Walker, 2008). It teaches patients not to see themselves as victims of cancer, thereby enabling them to tolerate related issues and become empowered in fighting the disease. Cognitive-behavioral therapy taught cancer patients to avoid exaggerated and catastrophic thoughts about cancer and replace them with positive thoughts. Challenging distorted beliefs helps them cultivate a higher morale and become more determined in healing and managing their psychological states (Mosalanejad et al., 2012).

Another finding of this research was that there are significant differences between online narrative therapy and cognitive-behavioral therapy in physical health, anxiety, and social functioning disorder dimensions, with online narrative therapy showing more efficacy in these dimensions, but no significant difference was observed in adherence to treatment. Narrative therapy practice helps stimulate the interactive relationship and socialization aspects of cancer patients. In most studies included in this systematic review, patients discussed their relationships with others, such as parents, spouses, children, friends, other cancer patients, or healthcare professionals. Sometimes cancer patients feel they must hide their worries to protect others, or that face-to-face discussions about their feelings with others are difficult, but narrative therapy allows patients to return to social interactions and positively affect their relationships with others, providing an opportunity to share their experiences (Gripsrud et al., 2016). Therefore, cancer patients can move from isolation to active participation in a new social context. Additionally, narrative therapy empowers cancer patients as they see narrative as a way to help others. Active narrative practices, like writing, storytelling, and painting, are movements for patients to shift their role from being acted upon to actively acting (Borregaard & Ludvigsen, 2018). Narrative therapy also aids patients in reflection, self-knowledge, and self-awareness. During narrative therapy, participants have the opportunity

to organize and narrate their thoughts (Carlick & Biley, 2004).

5. Limitations & Suggestions

Overall, the results of this research indicate that both cognitive-behavioral and online narrative therapies are effective in improving mental health and adherence to treatment; however, narrative therapy is better at enhancing mental health than cognitive-behavioral therapy. Like other studies, this research has limitations; for example, responses to research instruments may have been biased due to the type and amount of medication the patients were taking, so caution should be exercised in generalizing the results. The findings of this research can pave the way for interventions to assist cancer patients. It is recommended that physicians and psychotherapists utilize cognitive-behavioral and online narrative therapy interventions to improve mental health and treatment adherence in cancer patients, thus enhancing the health of these patients.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

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

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Authors' Contributions

All authors equally contributed in this article.

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