

The Effectiveness of Intensive Short-Term Dynamic Psychotherapy on Pain Perception and Pain Catastrophizing in Women with Breast Cancer

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ABSTRACT

Objective: The aim of the present study was to investigate the effectiveness of intensive short-term dynamic psychotherapy on pain perception and pain catastrophizing in women with breast cancer.

Methods: In this quasi-experimental study, 30 women with breast cancer who referred to Imam Khomeini Hospital in Sari in 2024 were studied using convenience sampling. They were then randomly assigned to two groups: the short-term intensive psychodynamic intervention group (15 participants) and the control group (15 participants) without any intervention. The short-term intensive psychodynamic intervention was implemented according to the protocol by Teska et al. (2005) over 16 weekly sessions, each lasting one and a half hours. The samples were assessed at two stages, pre-test and post-test, using the Pain Perception Questionnaire by Schaal et al. (2010) and the Pain Catastrophizing Scale by Rahmati et al. (2017). Data were analyzed using repeated measures multivariate analysis of variance in SPSS24 software.

Findings: In the intervention group, the mean scores for pain catastrophizing were (17.20±36.60) and for pain perception were (36.33±80.80) in the pre-test and post-test stages, respectively. Post-test scores significantly decreased compared to pre-test scores in the components of pain catastrophizing and pain perception in the experimental group compared to the control group. Additionally, the results showed that intensive short-term dynamic psychotherapy had a statistically significant effect on pain catastrophizing ($P<0.05$, $F=24.41$) and pain perception ($P<0.05$, $F=56.201$) after adjusting the means of the two groups based on the pre-test score.

Conclusion: The results indicate the effectiveness of intensive short-term dynamic psychotherapy on pain catastrophizing and pain perception in women with breast cancer. Therefore, this therapy can be used alongside other medical treatment methods in hospitals and clinics dedicated to breast cancer patients to reduce the psychological needs and problems of women with this condition.

Keywords: Intensive short-term dynamic psychotherapy, Pain perception, Pain catastrophizing, Breast cancer

1. Introduction

In today's world, despite advances in medical science and technology that have enabled humans to overcome many cancers, including breast cancer, cancer remains a terrifying disease due to its prognoses. From diagnosis to treatment, it creates various physical and psychological problems for the individual and their family. Breast cancer is considered a disease where patients are at risk of experiencing disease-related distress and pressure, leading to adjustment issues such as distress related to the onset of the disease and its consequences, directly affecting their lives (Farahbakhsh Beh et al., 2019). One of the factors associated with patients is pain catastrophizing. Pain catastrophizing is a precursor to pain-related fear, representing a maladaptive response to pain, characterized by an increased focus on pain-related thoughts, exaggeration of pain stimuli, and a hopeless approach to coping with painful situations (Alirezaee et al., 2022). One of the most consistent findings related to pain catastrophizing is its association with increased pain experience. Sullivan et al. (2005) showed that catastrophizing explains 7 to 31% of the variance in pain intensity. Pain catastrophizing refers to the process by which pain is interpreted as highly threatening. It is considered a cognitive element of the fear of pain process, associated with pain-related disability in patients (Sullivan et al., 2005). Early levels of pain catastrophizing are linked to subsequent activity intolerance and, besides being related to physical disability, may also be associated with more severe pain and different pain-related problems (Börsbo et al., 2010).

In patients with chronic diseases, in addition to physical outcomes leading to physical suffering, persistent pain and subsequent problems can lead to psychological, social, and existential/spiritual disturbances, collectively termed as suffering perception (Yarmohammadi Vassel et al., 2020). Therefore, to treat pain, the whole individual must be treated. Suffering is a state of severe distress associated with events threatening the individual's wholeness, reducing quality of life through physical, psychological, existential, familial, personal, or health-related concerns (Ferrell, 2005). Dimensions of suffering perception include physical suffering, involving physical symptoms such as lack of energy, loss of appetite, pain, dry mouth, shortness of breath, nausea, sleep problems, constipation, and diarrhea. Psychological suffering includes symptoms such as fear, anxiety, irritability, depression, hopelessness, sadness, and loneliness, and spiritual/existential suffering may accompany physical and psychological symptoms. This

suffering can encompass important issues such as finding meaning, losing meaning and purpose in life, and seeking answers to questions like the purpose of life and what happens after death. Other issues may include feelings of connection with a supernatural force, hope or hopelessness, isolation, and severe fear of death (Boston et al., 2011). Suffering perception (including physical, psychological, and existential suffering) significantly impacts the quality of life in cancer patients. Although existential suffering is often seen as a factor disrupting an individual's integrity, self-knowledge has long been recognized as a factor promoting personal integration (Carlson, 2013).

Studies show that in addition to the well-investigated epidemiological aspects of cancer, its psychological and clinical aspects are also crucial. The role of psychological factors and interventions in the onset, coping, and recovery from cancer requires more attention, particularly regarding which intervention methods are most effective in reducing cancer-related psychological distress (Mohamadzadeh & Hoseini, 2018). One such intervention discussed in this study is intensive short-term dynamic psychotherapy (ISTDP). This approach assumes that traumatic relationships with primary caregivers affect self and others' perceptions, maintained into adulthood as a cyclical relational pattern. Therefore, interpersonal psychodynamic therapy helps individuals by discovering, interpreting, and modifying these cyclical relational patterns to minimize interpersonal conflicts and maladaptive defense mechanisms, thus reducing disorder symptoms (Sayde, 2023). Short-term psychodynamic therapy emphasizes immediate assistance to the patient to experience unconscious emotions causing unconscious anxiety, disorder symptoms, and various defenses (Mohamadzadeh & Hoseini, 2018). This therapy helps patients resolve their problems based on how they confront emotions or conflicts. Davanloo believes that experimenting with some core techniques of short-term psychodynamic therapy in the initial interview, along with closely monitoring patients' reactions and responses, is the only way to determine whether the patient can tolerate the unconscious content (Ajilchi et al., 2020). Studies (Alizadeh et al., 2022; Mohamadzadeh & Hoseini, 2018; Sayde, 2023) showed that short-term psychodynamic intervention effectively reduces individuals' psychological problems. Considering the psychological impact of cancer on women, studies on effective and practical psychological interventions are limited, with few addressing both suffering perception and pain catastrophizing in women with breast cancer simultaneously. Given the psychological aspect of

these variables, intensive short-term dynamic psychotherapy seems potentially effective. Therefore, the present study aimed to investigate the effectiveness of intensive short-term dynamic psychotherapy on suffering perception and pain catastrophizing in women with breast cancer.

2. Methods

2.1. Study Design and Participants

This study is quasi-experimental research with a pre-test-post-test control group design. It involved two groups of participants: an experimental group and a control group, each consisting of 15 individuals. Both groups were assessed twice (pre-test and post-test) using standardized questionnaires. The statistical population included all women with breast cancer in stages 0 and 1, referred to public hospitals in Sari. A total sample of 30 individuals was selected from the entire population who met the inclusion criteria using convenience sampling, and then randomly assigned to experimental and control groups using simple random sampling (drawing lots with patient file numbers). Inclusion criteria included a maximum disease duration of 1.5 years, age between 25 and 65 years, education level above high school diploma, cancer stage 0 or 1, patient alertness, ability to understand and respond to questions, consent to participate in the study and sign a written consent form, and no prior intensive short-term dynamic psychotherapy. Exclusion criteria included lack of consent to participate, absence from more than two sessions, and having another chronic physical illness based on self-report. The intervention group underwent 16 weekly 90-minute sessions of psychodynamic therapy according to the protocol outlined in Table 1. The control group did not receive any therapeutic intervention. Participants were unaware of the type of intervention. They were assessed using suffering perception and pain catastrophizing questionnaires at both pre-test and post-test stages.

2.2. Measures

2.2.1. Suffering Perception

This scale, developed by Schaal et al. (2010), measures the experience and perception of suffering in three dimensions: physical, psychological, and existential/spiritual suffering. The physical dimension includes 9 items rated on a four-point Likert scale from 0 (never) to 3 (always), with a total score range of 0 to 27. The psychological dimension comprises 15 items rated on a four-

point Likert scale from 0 (very little) to 3 (very much), with a total score range of 0 to 45. The existential dimension has 9 items rated on a five-point Likert scale from 0 (very little) to 4 (very much), with a total score range of 0 to 36. The reliability of this test and its dimensions was confirmed by Schaal et al. (2010) in three groups: African Americans (physical: 0.63, psychological: 0.90, existential: 0.86), Whites (physical: 0.43, psychological: 0.87, existential: 0.84), and Hispanics (physical: 0.60, psychological: 0.85, existential: 0.83) (Alirezaee et al., 2022; Yarmohammadi Vassel et al., 2020). In this study, Cronbach's alpha coefficients for physical, psychological, and existential dimensions were 0.71, 0.84, and 0.81, respectively.

2.2.2. Pain Catastrophizing

This questionnaire, developed by Rahmati et al. in 2017, assesses catastrophic thoughts and behaviors in patients when facing pain. It consists of 13 items and two dimensions: magnification (items 2, 3, 4, 5, 6, 7, 13) and rumination/hopelessness (items 1, 8, 9, 10, 11, 12). Participants rate how often they engage in each of the 13 statements during pain on a five-point scale from 0 (never) to 4 (always). Subscale scores are obtained by summing the relevant items, and the total score is the sum of all items. Construct validity has been confirmed in various studies, with factor analysis generally supporting the rumination, magnification, and hopelessness structure of this questionnaire. Test-retest reliability was 0.75, and subscale reliabilities were 0.89 and 0.82, respectively (Hooshmandi et al., 2024; Sayed Alitabar & Goli, 2023).

2.3. Intervention

2.3.1. Intensive Short-Term Dynamic Psychotherapy

The intensive short-term dynamic psychotherapy protocol by Tasca et al. (2005) is designed to address cyclical relational patterns (CRPs) in individuals. This protocol is structured into four levels, each spanning four sessions. The therapy aims to enhance self-awareness and emotional expression, reorganize maladaptive relational patterns, develop a realistic and tolerant understanding of self and others, and prepare for the conclusion of therapy. The sessions incorporate activities and interventions that progressively build upon each other to facilitate meaningful change and reduce psychological symptoms (Ajilchi et al., 2020; Alirezaee et al., 2022; Alizadeh et al., 2022; Erjaee et al., 2019; Jafari & Joharifard, 2023; Knekt et al., 2021;

Mohamadzadeh & Hoseini, 2018; Ranjbar Sudejani et al., 2017).

Sessions One to Four (Level One)

The first level focuses on identifying cyclical relational patterns. This is achieved through increasing group cohesion, encouraging self-disclosure and self-reflection, verbalizing feelings, dreams, and needs, sharing interpersonal feedback with other group members and the therapist, respecting interpersonal boundaries, and fostering a willingness to stay in the here and now. These activities help members recognize their patterns of relating to others, setting the foundation for deeper therapeutic work.

Sessions Five to Eight (Level Two)

The second level involves reorganizing cyclical relational patterns. New, adaptive relational patterns are promoted to reduce negative feelings and anxiety. Interpretation is used to help participants understand the impact of their interactions on their feelings about themselves and others, and how these relate to their experiences with primary caregivers. This process raises awareness of hidden feelings and fears protected by defenses. Group members are encouraged to express these aspects with the support of the group, facilitating emotional processing and the adoption of healthier relational patterns.

Sessions Nine to Twelve (Level Three)

The third level is dedicated to redefining and authentically confronting painful aspects of oneself. As group members become more aware of and express hidden

parts of themselves and others, they develop a more realistic and tolerant perspective towards these aspects. This acceptance alters the shape of their cyclical relational patterns, leading to the use of more adaptive responses and a reduction in symptom severity. The new, healthier relational patterns are consolidated and extended to relationships outside the group, promoting long-term change.

Sessions Thirteen to Sixteen (Level Four)

The fourth level focuses on terminating the therapy sessions. This phase explores individual reactions to ending therapy, using it as a model for coping with losses in real life. The termination process is examined to help participants understand their emotional responses and develop strategies for managing future separations and endings. This preparation ensures that the therapeutic gains are maintained and that participants can continue to apply what they have learned in their daily lives.

2.4. Data analysis

Data were analyzed using repeated measures multivariate analysis of variance in SPSS24 software.

3. Findings and Results

All 30 participants in this trial were present at both the pre-test and post-test stages, and the final analysis was conducted on data from 15 individuals in each group.

Table 1

Descriptive Statistics of Variables at Pre-test and Post-test in Experimental and Control Groups

Variables	Group	N	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD
Pain Catastrophizing	Experimental	15	36.60	6.69	17.20	3.91
	Control	15	38.33	7.74	35.60	10.38
Suffering Perception	Experimental	15	80.80	10.30	36.33	8.04
	Control	15	82.00	9.85	82.40	9.65

Table 1 shows descriptive statistics, including the mean and standard deviation for the pre-test and post-test stages in the experimental and control groups. The results indicate that the mean and standard deviation scores in the post-test

stage have decreased in the experimental group compared to the pre-test stage, whereas this difference is minimal in the control group.

Table 2

Results of Analysis of Covariance

Variables	Sum of Squares (SS)	df	Mean Square (MS)	F	Significance Level
Pain Catastrophizing	2539.20	1	2539.20	24.41	0.000
Suffering Perception	15916.03	1	15916.03	201.56	0.000

Table 2 indicates a significant difference between the mean scores of pain catastrophizing and suffering perception in the two groups. According to the results, the raw scores and the comparison of post-test to pre-test scores show a significant reduction in the components of pain catastrophizing and suffering perception in the experimental group compared to the control group. Intensive short-term dynamic psychotherapy was statistically significant for pain catastrophizing ($P < 0.05$, $F = 24.41$) and suffering perception ($P < 0.05$, $F = 201.56$) after adjusting for the pre-test mean scores of both groups. Therefore, it can be concluded that intensive short-term dynamic psychotherapy is effective on suffering perception and pain catastrophizing in women with breast cancer. In other words, intensive short-term dynamic psychotherapy significantly reduced suffering perception and pain catastrophizing in women with breast cancer in the post-test stage, indicating the therapy's effectiveness.

4. Discussion and Conclusion

This study examined the impact of intensive short-term dynamic psychotherapy on suffering perception and pain catastrophizing in women with breast cancer. The findings indicated that intensive short-term dynamic psychotherapy significantly reduced suffering perception and pain catastrophizing in women with breast cancer after the intervention, compared to the control group. Consistent with the present study's findings on the impact of intensive short-term dynamic psychotherapy on pain catastrophizing, prior research (Mohamadzadeh & Hoseini, 2018; Ranjbar Sudejani et al., 2017; Sayde, 2023) has reported that psychodynamic interventions significantly reduce psychological problems in patients post-recovery.

The positive effects of this therapy can be explained by its assistance to women with breast cancer in deeply experiencing and expressing emotions, thus reducing inhibition, regulating cognitive processes, and arousal, leading to a realistic understanding of themselves and their capabilities, and reducing cognitive errors (Knekt et al., 2021). In therapy, building ego capacity to experience emotions helps patients avoid using defense mechanisms to block negative emotions. By enhancing ego capacity, the therapy helps improve patients by bringing them closer to their emotions without relying on defense mechanisms. This mastery of emotions through challenging defenses improves the patient's condition and, consequently, their quality of life (Jafari & Joharifard, 2023). In psychodynamic therapy,

individuals can increase their ego functioning and strength, reducing the need for maladaptive behaviors such as pain catastrophizing, making life easier to manage. The psychodynamic therapy process makes patients more aware of unconscious thoughts, feelings, and emotions within the therapeutic relationship. Patients become aware of the inappropriateness of their thoughts, allowing the ego to express itself and adapt to changing situations (Sayde, 2023).

Irrational beliefs reduce the quality of life as they conflict with quality of life indicators and components. In the intensive short-term dynamic psychotherapy group, irrational beliefs are addressed through clarification, blocking, challenging, and identifying defenses. Desirable behaviors are reinforced, self-regulation to control thoughts and feelings is taught, and short-term, accessible daily planning is provided to change excessive self-control beliefs. Transforming cognitive errors into rational beliefs leads to emotional and behavioral outcomes, helping maintain individuals' mental health (Ranjbar Sudejani et al., 2017).

The results of the present study on the impact of intensive short-term dynamic psychotherapy on suffering perception in women with breast cancer align with the prior findings (Ajilchi et al., 2020; Mohamadzadeh & Hoseini, 2018; Yarmohammadi Vasel et al., 2020). The source of suffering experienced by individuals is the challenges threatening their integrated existence, causing severe distress from events perceived as personal threats. Research shows that patients with chronic diseases experience severe suffering from losing the normal flow of daily life and family relationships. Psychological research has extensively documented that individuals living with chronic pain experience psychological effects such as anxiety, depression, and fear of future pain (Leiper & Maltby, 2004). Davanloo's method aims to remove emotional barriers causing psychological problems, teaching patients to realistically accept and manage their emotions and prevent the recurrence of psychological disorders associated with illness and stressful situations (Jafari & Joharifard, 2023).

In this study, consistent with the intensive short-term dynamic psychotherapy process, the defenses of cancer patients were clarified and challenged. Gradually, patients could confront emotional pain and past wounds, leading to emotional discharge and moderated feelings. Patients identified cognitive errors and irrational thoughts, preventing inappropriate acceptance and perception. The current experience of pain was given clear attention, awakening similar past experiences, and prompting reflection, ultimately leading to self-awareness. This

awareness is central to the healing process in psychodynamic therapy (Leiper & Maltby, 2004).

5. Suggestions and Limitations

Limitations of the present study include its focus on only two variables: suffering perception and pain catastrophizing, without examining the effects of psychodynamic therapy on other variables. Additionally, intensive short-term dynamic psychotherapy was the sole therapy used in this study, and therapeutic effects were not tracked over different time intervals. Future research should examine other impactful psychological variables and compare various intervention methods. Moreover, future studies should investigate the long-term effects of therapy post-treatment at different intervals. Alongside medical treatments, reducing psychological and existential problems to improve patients' quality of life necessitates psychotherapy. Given the present study's findings that intensive short-term dynamic psychotherapy effectively reduces suffering perception and pain catastrophizing in women with breast cancer, it is recommended that emerging psychological treatments like intensive short-term dynamic psychotherapy be considered by institutions like the Ministry of Health and Welfare Organization. Psychologists in hospitals and centers should use this valuable and impactful intervention in individual or group therapy to help patients better cope and achieve higher mental health in difficult conditions.

Authors' Contributions

All authors have contributed significantly to the research process and the development of the manuscript.

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.

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