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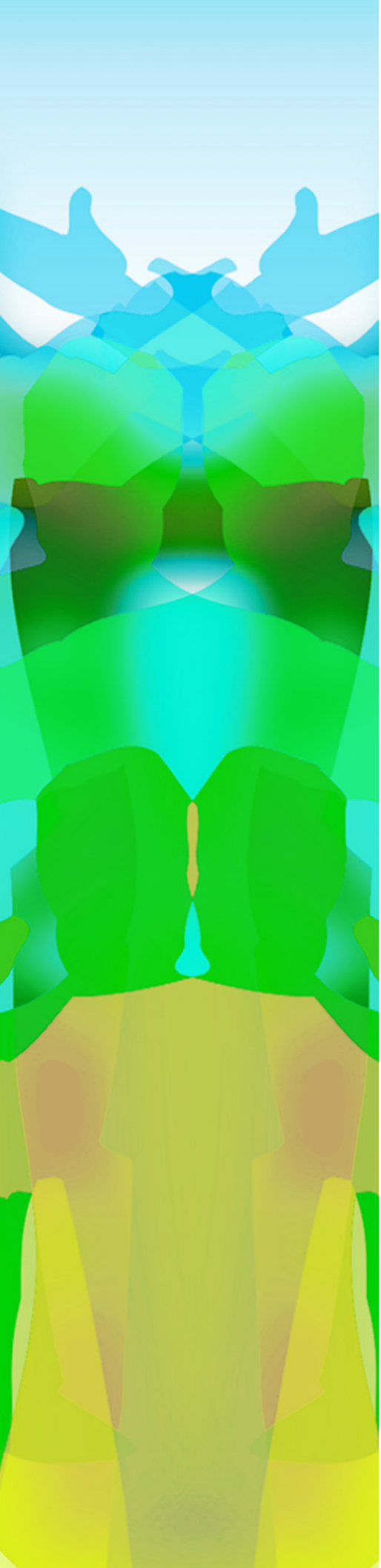

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EDITORIAL

Dear Colleagues,

Conflicts and wars, which are as old as human history itself, inevitably occupy our agenda today due to the geography in which we live. Despite the remarkable progress humanity has achieved in the fields of art, education, law, and science, making sense of the persistence of such a seemingly primitive act as "war" by those in power requires a profound personal struggle. This is because we are compelled to live with the consequences of wars whose legitimacy we often question.

Wars constitute a series of traumatic events that leave profound and lasting effects on the mental health of individuals and societies. Characterized by experiences such as intense violence, death or the threat of death, loss, displacement, and uncertainty, wars not only damage our individual psychological integrity but also undermine the collective psychological well-being of societies. War does not merely cause physical destruction; it also negatively affects individuals' emotional, cognitive, and behavioral functioning.

It is evident that war does not only lead to psychological problems among those who are directly exposed to conflict environments. Conditions such as displacement, migration, and refugeehood also create significant challenges for individuals in terms of their sense of identity, belonging, and social life. Children and adolescents, in particular, are even more vulnerable to the devastating effects of war due to being in a sensitive developmental stage.

Today, witnessing acts of violence occurring in war has become possible even for individuals living in geographically distant regions through social media. Such exposure can undermine our perceptions of security and justice, weaken our ability to remain hopeful about humanity, and increase concerns about the proliferation of terror and violence. Thus, war and violence affect not only the mental health of people living in conflict zones but also that of sensitive individuals across the world.

Among individuals exposed to war environments, the most common psychological problems include post-traumatic stress disorder, depression, anxiety disorders, and adjustment difficulties. Continuous perceptions of threat, exposure to violent events, and the loss of loved ones significantly intensify feelings of fear, helplessness, and insecurity. In this context, mental health professionals are required not only to protect their own psychological well-being but also to provide treatment and rehabilitation services to individuals—and even societies—affected by war.

In conclusion, it can be stated that all wars universally affect mental health and impose severe costs on societies. Wars do not produce true winners; rather, there are only those who lose less. In this sense, perhaps our most important responsibility is to support policies that promote peace. The words of our great leader, Mustafa Kemal Atatürk, "Peace at home, peace in the world," may be regarded as a fundamental philosophical principle of preventive mental health services.

Prof. Dr. Semra Karaca

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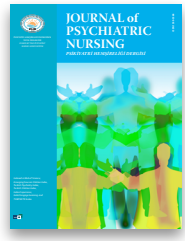

Experimental Research

A group process: long-term art psychotherapy process in individuals with eating disorders

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Abstract

Objectives: Eating disorders are a serious public health problem prevalent among adolescents, young adults, and women, and they have negative physical and psychological consequences. Art therapy can offer a safe space to understand the underlying dynamics of eating disorders and promote resilience. This study aims to examine the long-term group art psychotherapy process in individuals diagnosed with eating disorders and the problems experienced by these individuals through the artworks they produce.

Methods: The study was conducted with 11 female patients with anorexia nervosa, bulimia nervosa, and binge eating disorder. Art therapy lasted for two years and consisted of a total of 58 sessions, held for 2 hours per week. The art psychotherapy interventions used were semi-structured and planned. Qualitative data were evaluated through artworks, video recordings, and session reports. The approach in this study was used as a psychotherapy method to activate various senses and facilitate the symbolic expression of emotions and thoughts, helping to uncover the underlying conflicts generating the symptoms and thereby supporting psychological growth and recovery.

Results: Group interactions and artworks produced during therapy initially focused on symptoms but evolved into more in-depth individual sharing in the later phase. Through the artworks created during art psychotherapy, themes such as distorted body image, negative self-perception, loneliness, inhibited emotional expression, depressive mood, high anxiety, feelings of guilt, obsessive thinking, low functioning, relationship problems, sociocultural pressures on the body, cognitive distortions related to the body, and denial of sexuality emerged. By understanding these themes reflected in the artworks and their connections to symptoms during psychotherapy sessions, these problems could be addressed psychotherapeutically.

Conclusion: Patients developed in-depth awareness of both themselves and others. It was observed that their functioning increased in various areas of life, such as returning to work and school. The study contributes to clinical practice by enhancing understanding of eating disorders and informing the development of effective psychological treatments.

Keywords: Art psychotherapy; art psychotherapy process; eating disorders; group psychotherapy; psychodynamic psychotherapy

Eating disorders are defined as serious public health issues involving adverse physical and psychological consequences and are common among adolescents and young adults.[1,2] Eating disorders, which fall under the categories of anorexia nervosa, bulimia nervosa, and binge eating disorder, are psychiatric disorders characterized by abnormal eating behaviors, obsessive thoughts about weight, and a deteriorated perception of body image or appearance.[3]

Eating disorders are a response to dissatisfaction with body weight and a preoccupied, distorted body image, resulting in

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compensatory behaviors such as dieting, use of diuretics/laxatives, extreme levels of exercise, vomiting, and starvation, all of which can be life-threatening.[4,5] The behaviors individuals engage in to manage their bodies are prominent in the etiology of the pathology and therefore are the primary targets of treatment.[6] They also tend to have perfectionistic, impulsive, obsessive, and distorted patterns of thinking, experience difficulties in emotion regulation, and suffer from psychological issues such as loneliness, intolerance of negative emotions, and intense anger.[7,8] Patients with anorexia nervosa have limited awareness and understanding of their own emotions.[9,10]

The treatment of eating disorders typically requires a multidisciplinary approach and can take a long time.[11] Difficulties in recognizing, organizing, and symbolizing emotions are among the most common symptoms associated with eating disorders. Therefore, gaining awareness of both the body and emotions is a key factor in supporting patient development. Instead of focusing mainly on eating behavior, holistic approaches that involve various disciplines and target eating disorder-related problems across these domains can yield more positive treatment outcomes. There are two important goals in treatment: (1) to resolve the patient's physical problems and ensure survival, and (2) to understand the underlying issues responsible for the eating disorder symptoms. In the treatment process, psychotherapies that examine the meaning of symptoms, in addition to medical treatment, are of fundamental importance.

What is presently known on this subject?

- Long-term art-based group psychotherapies are considered beneficial for individuals with eating disorders; however, the literature provides very limited descriptions of how group dynamics, symbolic expression, and therapeutic mechanisms evolve throughout extended treatment processes.

What does this article add to the existing knowledge?

- This study offers a detailed, stage-by-stage analysis of a two-year psychodynamic art psychotherapy group involving patients diagnosed with eating disorders. It uniquely documents how symbolic expression, emotional awareness, group cohesion, and the depth of psychological work transform over time, illustrating clinical change mechanisms rarely captured in previous research.

What are the implications for practice?

- Findings demonstrate that structured long-term group art psychotherapy enhances emotion regulation, body awareness, interpersonal functioning, and real-life functioning (e.g., return to work/school). The results provide clinicians with a replicable intervention model and highlight the importance of integrating art-based group psychotherapy into multidisciplinary treatment programs for eating disorders.

Theoretical Framework

Art Psychotherapy for Eating Disorders

Art is used as a psychotherapy method to activate various senses and facilitate the symbolic expression of emotions and thoughts, helping to uncover the underlying conflicts generating symptoms and thereby supporting psychological growth and recovery.[9,12,13] Art psychotherapy, a method based on creating artwork, facilitates the establishment of spontaneous and creative communication, thus activating pre-verbal processes that serve as a foundation for addressing the underlying causes of patients' maladaptive behaviors and unraveling their rigid defenses, whereby new and more satisfying ways of interacting with others can be developed.[9,12,14,15] Through the use of art in psychotherapy, it is possible to observe the patient's creative process, examine their attitudes and behaviors, and understand underlying dynamics by analyzing the resulting artworks.[12,16]

The expressive techniques used in art psychotherapy are particularly beneficial in the treatment of eating disorders, as they can reveal patients' hidden feelings and memories embedded in bodily experiences. Psychodynamic therapies, especially expressive and experiential art psychotherapies, have been shown to yield positive outcomes for individuals with eating disorders, as they provide a framework for analyzing the effects of emotions, thoughts, and behaviors on eating attitudes.[14,17–19] Art psychotherapy enables patients to externalize conscious and unconscious aspects of their inner world into artwork and to explore and understand these aspects with the support of a therapist. These aspects can then be re-internalized and transformed into healthier forms.[12,20]

An increased ability to express non-verbal representations of the self through various art forms is valuable for therapeutic interactions. In this approach, artwork mediates the relationship between the patient's inner and outer world, that is, between the patient and the therapist, and may temporarily and unconsciously substitute the use of food as a transfer object. Unlike the "transitional object" (Winnicott, 1971) and "transformational object" (Bollas, 1987), a transactional object does not initially carry symbolic meaning but rather a concrete one.[21,22] Schaverein (1994) states that in art therapy with patients with anorexia nervosa, painting facilitates gradual movement toward symbolization through the use of art materials and their functions, creating a concrete space to address the inner world and eating-related obsessions.[23]

Art psychotherapy also enhances the capacity for sublimation. Experiences laden with libidinal or aggressive impulses are visualized through artworks and transformed into expressions acceptable to the ego.[24] Additionally, art psychotherapy addresses common experiences among individuals with eating disorders—such as insecurity, shame, fear, inadequacy, lack of insight, sensitivity to rejection, perfectionism, and negative interpersonal feedback—in a non-threatening manner, enabling individuals to recognize, understand, and integrate these experiences into their inner world.[14] Black (2003) states that creative art processes provide individuals with eating disorders with an alternative

means of expression in their relationship with food and their bodies.[25] Furthermore, this approach allows unexpressed emotions to emerge symbolically and become understandable over time.[10] Applying expressive and creative psychotherapy techniques to individuals with eating disorders is also a useful tool for reducing obsessive thoughts related to food and body image.[26]

Group Psychotherapy for Eating Disorders

In the treatment of eating disorders, group therapy is used alongside individual therapy.[27] Difficulties related to family, siblings, parental figures, and peer groups—often addressed in individual therapy—can also be explored and resolved within group settings. Complex or contradictory emotions and strong indecisiveness are central features of eating disorders and can significantly affect individuals' lives.[28]

Group art psychotherapy provides patients with opportunities to work collaboratively through shared use of art materials, connect with their emotions, and express these emotions through interpersonal interaction. Individuals with eating disorders may actively resist help, struggle with treatment adherence, and frequently discontinue treatment.[29] Although the number of studies is limited, existing research indicates that group psychotherapies for individuals with eating disorders yield positive outcomes.[30,31] However, further research is needed to better understand the therapeutic mechanisms involved in group art psychotherapy and to evaluate its effectiveness.

This study aims to explore and describe the therapeutic processes and mechanisms of change in a long-term psychodynamic group art psychotherapy program conducted with individuals diagnosed with eating disorders, and to examine how symbolic expression, group dynamics, and emotional awareness evolve throughout the two-year treatment process.

Method

Clinical Context

This study was conducted at Istanbul University (IU), Istanbul Medical Faculty (ITF), Department of Mental Health and Diseases between 2019 and 2020. This study was approved by the Ethics Committee for Non-invasive Clinical Studies of the Department of Mental Health and Diseases, Istanbul University, Istanbul Faculty of Medicine (approval no: 2018/951, date: 06/07/2018), and was conducted in accordance with the principles of the Declaration of Helsinki. The sample consisted of 11 female patients aged 16–55 years, diagnosed with anorexia nervosa, bulimia nervosa, and binge eating disorder, who were receiving routine medication and medical follow-up in the eating disorders unit and were referred to the art psychotherapy program. Patients with comorbid alcohol or substance use disorders, psychosis, or those currently undergoing psychotherapy were not included in the study.

At the beginning, 2–3 pre-interviews were conducted with patients referred to the art psychotherapy program. This process aimed to provide information, enhance motivation, and establish a contract regarding the treatment framework. The interviews addressed issues related to the group therapy framework, such as continuity, confidentiality, and inter-member relationships, identified treatment targets based on patient needs, and provided information about the functioning, goals, limits, and expected outcomes of art psychotherapy.

Description of the Group

Art group psychotherapy was planned as a long-term intervention lasting two years, during which a total of 58 sessions were conducted. In the preparation phase, the first four sessions of a pilot art psychotherapy group were carried out with the study participants. These sessions provided an environment for participants to freely express their problems through art.

A pilot study was conducted, and a semi-structured plan was developed based on the data obtained. During the pilot study, four sessions were video-recorded. These recordings were transcribed into written text, and the emerging themes were coded, resulting in the identification of 13 main themes. A "Semi-Structured Art Psychotherapy Program in Eating Disorders," consisting of these 13 main themes, was developed by the researchers using data from the pilot study and findings from the literature review (Table 1). The long-term art-based group psychotherapy model used in this study is based on a structured process shown to be effective in previous clinical studies involving patients with eating disorders.[17]

The program, planned to last 58 weeks, was designed so that each session would include the following components: (1) the main theme, (2) study format and required materials, and (3) goals. This structured plan was revised based on the opinions of five experts (one psychiatrist, one clinical psychologist, two art therapists, and one psychiatric nurse) working in the fields of art psychotherapy and eating disorders, and the final version presented in Table 1 was used in the study (Table 1).

Who:

The art psychotherapy group was conducted by a clinical psychologist (PhD) who had completed the art psychotherapy certificate program offered by the Istanbul University Faculty of Medicine, and a visual arts instructor who had completed the same training. The process was supervised by a psychotherapist experienced in psychodynamic art psychotherapy and eating disorders.

Table 1. A semi-structured art psychotherapy program for eating disorders

Main Themes	Working Methods and Materials	Goals
Self-focus and self-expression (5-6 sessions)	Acquaintance, Creating a group contract together Warm-up activities in the open area or workshop Improvised individual and group activities Painting and collage materials Getting familiar with the materials Attempts to discover creativity	Introduction of group members and the program Feeling safe in the group Self-recognition and self-expression through art Noticing others Recognizing similarities and differences
Interaction and relationship (5-6 sessions)	Warm-up together, Body and sound usage Home, room, garden, doors Interior and exterior designs Painting materials: pastel, watercolor, acrylic Individual work in the group Common group painting, co-production	Awareness of other people How other people express themselves How do I perceive others Expression differences and similarities between myself and others Realizing the way, the group expresses itself Borders, privacy, relational trust, awareness of expectations
Socialization and function of the other (5-6 sessions)	Family, friends, working life Attempts to interact properly with group members Imagination, reconstruction, animation with body and rhythm, Creating visual imagery; painting, collage, clay works	Reviewing the relationship between family, friends, and social environment Awareness of their approach and attitude towards the outer world Gaining social skills
Feelings, emotion expression and regulation (6-7 sessions)	Works regarding the rhythm of emotions and its expression and image in the body Emotional exercises with dance, rhythm, and painting Recognizing the feeling of intra-group interactions, Pairwise or threesome intra-group emotional interactions Mask: what's inside and what's shown	Realizing emotional expression characteristics Discovering repressed and suppressed feelings, desires, and fears, Arranging emotions Sharing negative emotions Emotional repair
Body image and its representations (6-7 sessions)	Working on various expressions with body, music, and rhythm, Animating body expression in the roles of child, woman, man, and parent Games that activate sensations in different body parts How is my face, arms, legs, back, and body, what's going on there? Drawing and reconstructing the body map on a large paper, repairing the damaged parts Painting materials: dry paints, watercolor, crayons, clay, large paper	Getting to know the body and its different parts Realizing the integrity of the body Noticing the relationship between emotions and their expressions in the body Realizing the relationship between eating behavior and body Raising awareness about body identity and ideal self
Continuity: the past and the future (3-4 sessions)	Imagination, fiction, and animations focused on childhood, memories, happy and unhappy experiences, dreams, and change.	Providing stability together with change Focus on the here and now Realizing the effects of the past on the present Recognizing future expectations, desires, and anxieties
Adaptation to reality: Coping skills (4-5 sessions)	Working on the subjects targeted by group members for themselves using painting, clay, and puppet materials, Creating animations and visualizations focused on disruptive difficulties	Setting goals Gaining skills of decision making and implementation Developing a sense of control Developing a sense of self-confidence Increasing self-esteem
Neurocognitive functions (4-5 sessions)	Creating artistic products by using a variety of materials on the given problem-oriented themes	Developing a sense of attention and control Developing problem solving skills Finding creative solutions
Sexuality and intimate / romantic relationships (5-6 sessions)	Artistic expression about real and imaginary relationships, Creating and illustrating a story, including oneself, Wish tree, letter to lover, etc.	Noticing bodily senses Artistic expression of sexuality: desires, prohibitions, fears Being able to talk about romantic relationships Raising awareness of loneliness and attachment levels Being able to identify romantic relationship requirements
Spontaneity, flow, and creativity (6-7 sessions)	Body, music, and improvisation exercises, Trying materials and colors they have not tried before, Experiencing the flow with artistic materials	Stretching physical and mental rigidity, Being able to focus on the moment and have satisfaction Having happy experiences Trust yourself, trust the future

When

Session Structure

Each session began with an "Introduction" phase lasting 10–15 minutes, during which participants were invited to verbally express the feelings and thoughts they brought to the group. This was followed by the "Warm-up" phase, also lasting 10–15 minutes, which aimed to prepare participants for the creative process. The warm-up enabled participants to focus on their senses through various body, breathing, and rhythm exercises. These body movements, breathing exercises, and group activities were used to reduce possible feelings of anxiety, insecurity, and isolation among group members.

The "Main work" phase, which focused on creating artwork related to the themes identified above, lasted 30–40 minutes. During this phase, group members became familiar with art materials. Under the semi-structured instructions outlined above, participants were encouraged to creatively use and transform art materials into artworks by cutting, painting, pasting, drawing, making puppets, creating plays and animations, working with clay, and similar activities. Art therapy provides patients with both motivation and a channel to redirect obsessive thoughts about food toward creative activities. As Pellicciari et al.[32] reported, patients are encouraged to recognize through their artworks that there is more to the external world than food.

The final phase, "Sharing," aimed to promote insight and awareness. During this phase, participants gathered in a circle, observed the artworks from an external perspective, and discussed them. Each session concluded with sharing, allowing participants to express and release unarticulated emotions.

Where:

Place and Art Materials

The study was conducted in the Social Psychiatric Service, in a large and well-lit art psychotherapy workshop with access to a small garden.

What:

Various materials were used to create artworks, including papers of different sizes and weights, dry, pastel, and felt-tip crayons, acrylic and watercolor paints, adhesives, scissors, magazines or magazine images for collages, boards and tape for displaying artwork, a music player, and fabric. Multiple forms of artistic self-expression were available, such as painting, drawing, coloring, collage, sculpture, ceramics, clay work, photography, mask and puppet making, dance, and dramatization. Classical and instrumental music accompanied the sessions to support participants in engaging with their imagination and internal processes during artistic creation.

Group Members

The study included a total of 11 female patients: eight with anorexia nervosa, one with bulimia nervosa, and two with binge eating disorder. Pre-group interviews revealed that participants experienced intense anxiety related to eating behaviors and were receiving follow-up care for physical complications in non-psychiatric clinics, such as neurology and internal medicine, due to the effects of their disorders. Furthermore, interviews indicated that three participants had severe weight loss (between 39–40 kg) accompanied by strong weight-loss obsessions, while three others had significant weight gain and reported an inability to stop eating.

The mean age of the patients was 24 years (min:16, max:53), and the majority held a bachelor's degree. Except for one participant with a part-time job, all participants were unable to work or attend school prior to the art psychotherapy program due to the severity of their symptoms. By the end of the program, seven participants had either started working or returned to education. Although four participants continued to experience mild difficulties with work or school attendance, their overall functional levels improved. Cases with anonymized identity information are briefly presented in Table 2.

Results from the Art Therapy Group Process

Pilot Group Art Psychotherapy

Several common themes emerged during the four-session pilot study. The data obtained from session reports and video recordings were transcribed into written text and evaluated by five experts (one psychiatrist, two psychiatric nurses, one clinical psychologist, and one art therapist). Thirteen main themes, expressed through the artworks produced in the sessions and forming the focus of interactions occurring through these products, were identified. These themes were: (1) deterioration in body image, (2) negative self-perception, (3) loneliness, (4) limited emotional expression, (5) depressed mood, (6) high anxiety, (7) guilt, (8) obsessive thoughts, (9) low functioning, (10) relationship issues, (11) sociocultural pressures regarding body image, (12) body-related cognitive distortions, and (13) denial of sexuality.

Description of Session Content

The session excerpts and artworks presented in this section were selected from typical and clinically meaningful examples that best represent the therapeutic change and development observed throughout the group process, including the initial, deepening, and termination phases. The art psychotherapy process was defined in various stages according to characteristics such as verbal and artistic expression, in-

Table 2. Diagnosis and socio-demographic characteristics of patients

Patients*	Diagnosis	Characteristics of patients
ELA	Bulimia nervosa	She is a 22-year-old, single, university student, who cannot attend school due to treatment for and multiple suicide attempts. The suicide attempts have resulted in multiple bone fractures and overall physical disability, for which she continues to receive physical therapy. She lives with her parents and one sibling. At the end of art group therapy, she started her lectures at the open education university
HALE	Anorexia nervosa	She is 35 years old and single, and worked as an engineer for 7 years, but currently she is unable to work. She was hospitalized for 2 months. She lives alone in Istanbul and has complaints of intense stress, excessive fatigue, inability to get out of bed, self-isolation, and food obsession. She engages in excessive sports and exercise and goes from not eating at all to excessive eating. At the end of group therapy, she started working and became able to recreate her hobbies.
IŞIK	Binge eating disorder	She is 53 years old, divorced, and retired from working life, currently works in part-time jobs irregularly. She lives with her boyfriend. She has been suffering from eating disorders for 10 years. At the end of group therapy, she started working part-time, playing the instrument she wanted and singing in the choir.
BERİL	Anorexia nervosa	She is 20 years old. She was hospitalized for some time due to the diagnosis of anorexia neurosis and associated complaints at the time of her professional sports life, which she subsequently had to suspend. She lives with her family. At the end of the group therapy, she returned to her university education.
BİRGÜL	Anorexia nervosa	She is 28 years old. She received a religious education and was hospitalized for a time due to the diagnosis of anorexia nervosa after graduation. She is afraid of gaining weight and cannot go out or travel alone. She lives with her family. At the end of group therapy, she started traveling alone and eating at a restaurant.
ZELİHA	Anorexia nervosa	She is a 21-year-old university student, who became unable to go to school due to the diagnosis of anorexia nervosa. She lives with her family. She left the therapy at the 19th session because of the school attendance requirement.
HEDİYE	Anorexia nervosa	She is a 25-year-old, 7-year university student, who has not been able to go to school, study, or focus on what she has read due to the diagnosis of anorexia. She lost 20 kg by doing sports activities that she started to follow online 3 years ago. One and half years ago, she dropped from 70 kg to 52 kg from going the gym and after, started dieting but failed to manage her weight. This led to vomiting, which further dropped her to 40 kg during this period and led to her eventual hospitalization. She lives with her family. At the end of group therapy, she started to focus on her classes and graduated from university.
SU	Binge eating disorder	She is a 24-year-old senior university student, who applied to the clinic due to the discomfort she experienced from eating attacks and was diagnosed with binge eating disorder. Her parents are divorced, and she is currently living with her mother and grandmother. After group therapy, she had a boyfriend and was able to form a romantic relationship with him.
SEVGİ	Anorexia nervosa	She is a 16-year-old high school student who lives with her family. She has been undergoing treatment in the psychiatric clinic due to the diagnosis of anorexia nervosa. Her twin sister was also diagnosed with anorexia nervosa. She reported feelings of emptiness and constant depression. She was able to return to school in the second year of group therapy.
NEHİR	Anorexia nervosa	She is a 21-year-old university freshman who is unable to attend school due the diagnosis of anorexia nervosa, for which is receiving follow-up care. She started having problems with eating disorders at the age of 20 and eventually lost 30 kg, which dropped her to 39 kg, at which point she sought medical aid. Now, she cannot sleep at night and is only able to fall asleep towards the morning, she has anxiety about the future and reports conflicts in her family relationships. He left the therapy in the 39th session on the grounds that his anxiety decreased and it was sufficient for him.
BAŞAK	Anorexia nervosa	She is 21 years old, a medical school student, and lives with her family. She has been undergoing treatment in the psychiatry clinic due to the diagnosis of anorexia nervosa and is continues to receive follow-up care in internal medicine due to her physical problems. She reported to have communication problems and lack of self-confidence and expressed that she is only able to focus on the future instead of living in the present and wants to control everything. He returned to university education, who was left incomplete during the group therapy process.

*: Patient names were changed and permission was obtained.

teraction between members, group cohesion, resistance or openness, deepening, and exploration beyond symptoms, as well as understanding and integration. These stages were: "Initial phase: Limited participation," "Formation of group cohesion: I and others," "Meaning of symptoms: What does my illness tell me?," "Imaginary expression of internal processes," and "Integration, separation, and termination." These stages are described in detail below.

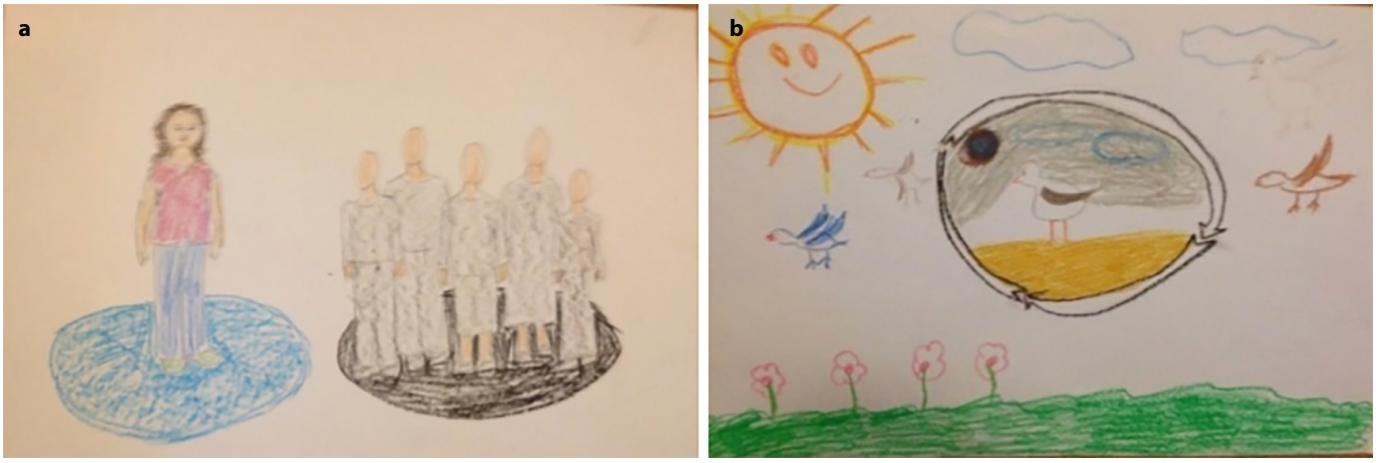

Figure 1. (a) Me and people without faces, (b) Flightless bird and vicious circle.

Initial Stage: Limited Participation

The first four to five sessions focused strictly on participants' eating behaviors, body image, and disease-related limitations, and the artworks functioned as mirrors of their symptoms. In the first session, following the introduction, all patients verbally expressed their symptoms and reported perceiving themselves as captive to their eating behaviors and body image. After the warm-up and creative work phases, the group was asked to create collages reflecting themselves. Sevgi, Birgül, Nehir, Hale, and Işık titled their collages "Sports Girl and Two Birds" (Sevgi), "Family and Being in a Café" (Birgül), "The Woman and the Volcano" (Nehir), "The Photographer Touring the City and the Sportswoman" (Hale), and "The Sky Meeting the Earth and Swimming" (Işık). These works focused on themes describing how their eating problems limited their lives and what they wished to change. The following four to five sessions continued to focus on experiences related to body image, dieting difficulties, and eating behaviors.

Formation of Group Cohesion: I and Others

The theme of "self and others in relationships," introduced in the fifth session to challenge participants' perception of being trapped by body image and eating, helped them shift their focus outward. In this session, Ela depicted herself as "a refrigerator that needs to be filled" and described constantly fluctuating between feeling weak and feeling overweight in her relationships with others. Birgül illustrated a house with a small door in which she was trapped, separated by a black line from others on the outside. Işık, whose painting was titled "Me and People Without Faces," stated that it represented her perception of being different from others (Fig. 1a). Betül depicted herself as a flightless bird in a vicious cycle (Fig. 1b), indicating that others lived free and fulfilling lives, whereas she experienced a heavy and suffocating existence (Figs 1a, b).

Meaning of Symptoms: What Does My Illness Tell Me?

At this stage (third month), the therapist's semi-structured approach, focusing on themes that revealed relational patterns and modes of interaction through artistic expression, enabled participants to explore boundaries between themselves and others, power and competition-related conflicts, and needs for support and safety. The use of art therapy in the group process accelerated the development of a healthy group dynamic and facilitated group cohesion, both essential for effective therapy. Participants began to engage with each other's emotions and demonstrated curiosity about one another. During this phase, when describing emotions associated with their problems, almost all participants identified anger as the dominant feeling (ninth session), often symbolized as a volcano (Fig. 2).

Imaginary Expression of Internal Processes

Themes of aggression toward self and others, inadequacy, shame, conflicting attitudes toward sexuality, desire, and longing emerged in subsequent sessions. During this process, collaborative painting, group mandala creation, and sharing common emotions through symbolic meanings of artworks contributed to recognizing similarities and differences and developing insight into relational patterns. From the 23rd session onward, participants shifted away from focusing on eating behaviors and began exploring different representations of the body. Themes of family conflict, sexuality, sexual representation of the body, relationships with the opposite sex, and temporal perspectives (past and future) became prominent, deepening throughout the therapy process.

The artworks produced during this stage reflected how participants distanced themselves from fears and conflicts embodied in their physical selves. For example, Hale depicted a rope wrapped around her body to represent constraints prevent-

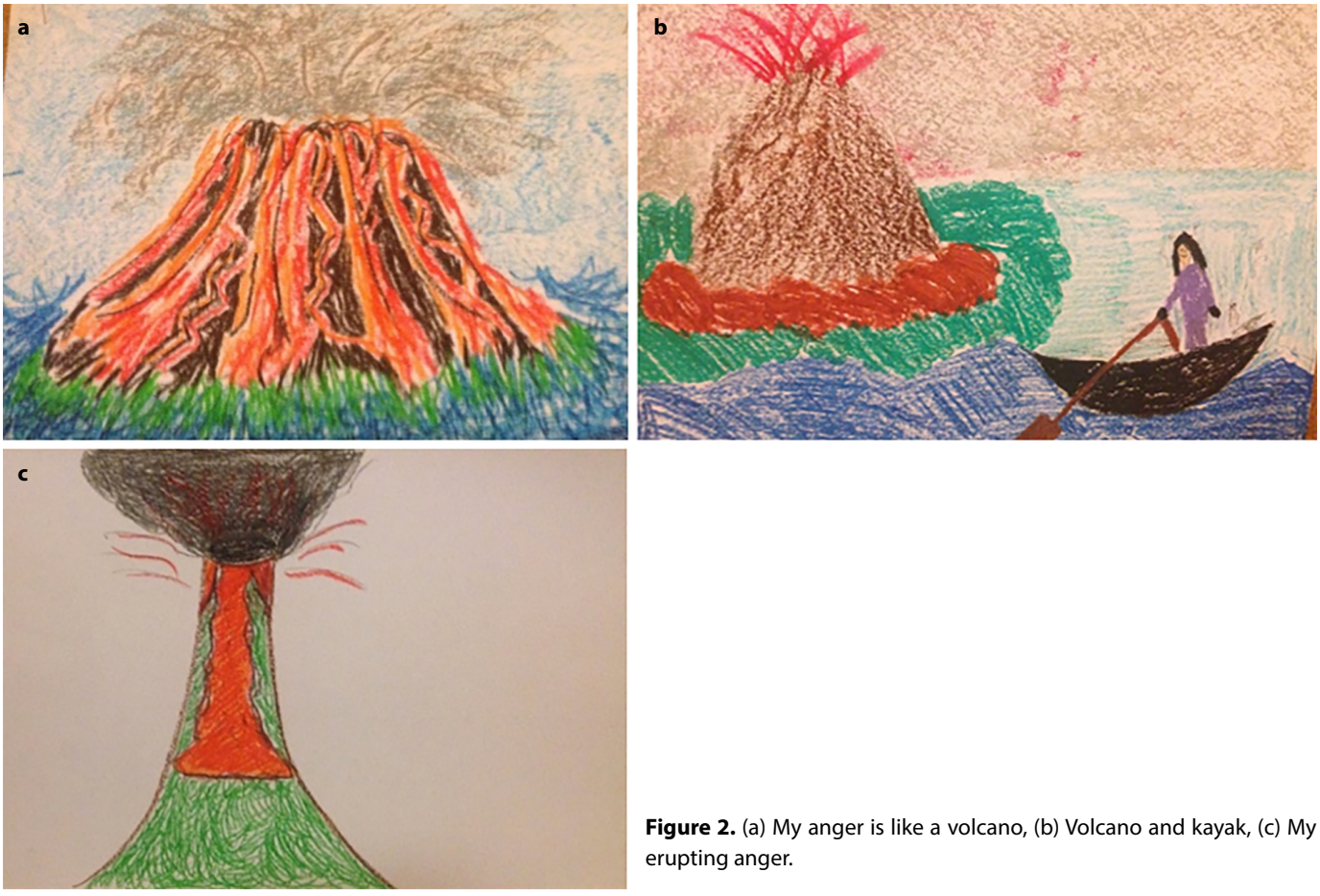

Figure 2. (a) My anger is like a volcano, (b) Volcano and kayak, (c) My erupting anger.

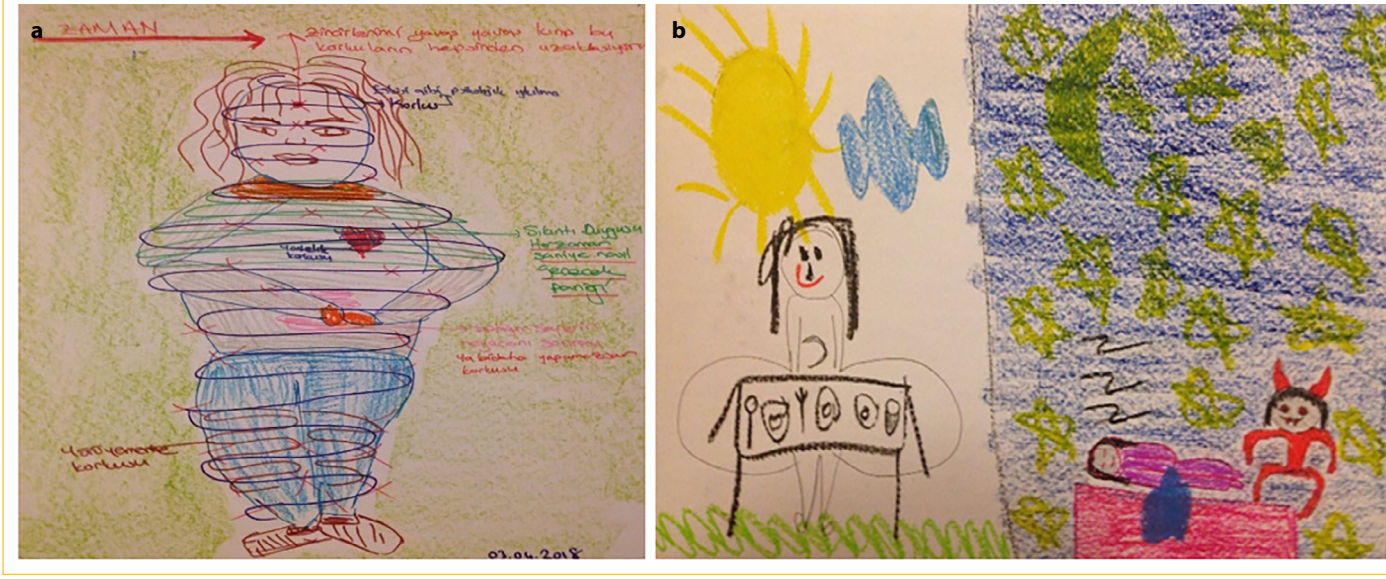

Figure 3. (a) I have to tie my body, (b) My body is full of food in the daytime and scary dreams at night.

ing the expression of her desires and fears (Fig. 3a). Ela illustrated symbolic representations of replacing food, including nightmares of being assaulted by a devil figure and feelings of shame related to her father (Fig. 3b) (Fig. 3).

Integration, Separation, and Termination

In the final 10–15 sessions of group art psychotherapy, participants demonstrated increased capacity for improvisation, deeper understanding of symbolic content emerging

Figure 4. I sing my song.

through their artworks, and greater integration of previously unaccepted desires and fears into their sense of self, while also focusing on future goals. In the 48th session, which involved working with three-dimensional materials, participants were able to position their bodies upright and tolerate observing them, albeit cautiously (Fig. 4).

Discussion

It was observed that long-term psychodynamic-based group art psychotherapy conducted with female patients diagnosed with eating disorders had a healing effect and improved patient functioning. The psychotherapy process, in which art was used, contributed to enriching the expressions of patients who were confined within their symptoms, enabling more creative and diverse forms of expression and encouraging them to confront the fears and desires underlying these symptoms. In this study, expressing emotions through artworks and addressing them therapeutically contributed to increased emotional awareness. Although painting is an individual activity, sharing it within the group, recognizing similarities with others' experiences, and receiving support through group cohesion enabled patients to benefit from universality, a key therapeutic factor, throughout the process.

Expressing emotions in a group setting through artistic materials—initially perceived as difficult or even embarrassing—enhanced interaction among members, strengthened group cohesion, and deepened the therapeutic process. Participants were able to express their emotions and thoughts through artistic means, allowing unconscious conflicts to become conscious through concrete visual representations, thereby facilitating understanding, sharing, and catharsis. Art serves as an effective system for the communication of implicit knowledge.[33] According to Malchiodi (2006), art-making involves creating, observing, reflecting, and generating meaning.[34] Such experiences promote change and insight in art-based psychotherapies by providing a creative space to contain implicit processes. Sporild and Bonsaksen emphasize that group art therapy for patients with eating disorders offers various benefits, including providing a platform for expressing themes that may remain unarticulated in verbal communication, thereby facilitating interaction among group members.[18] The patterns of change observed in this study are consistent with previous findings indicating that long-term art-based group therapy enhances motivation for recovery and emotional integration.[17]

Although participation was limited during the initial sessions, patients gradually became more confident and able to express themselves through art therapy, share their fears and desires through their artworks, reflect on the impact of eating behaviors on their body image, emotions, and relationships, and develop positive transference toward the group. During these sessions, participants openly shared maladaptive coping behaviors—such as excessive exercise, binge eating, food restriction, and social withdrawal—which they commonly used to avoid challenging relational situations and the expression of anger.

Hopelessness and resistance are among the main challenges in treating patients with eating disorders.[35] Therefore, establishing a cohesive group environment is essential to promote cooperation and sustain long-term group psychotherapy. In this study, the use of art therapy and the sharing of experiences through artworks facilitated this process by fostering a sense of belonging and reducing feelings of isolation. Participants reported satisfaction with the group art psychotherapy process and valued having a safe environment in which to express their difficulties. Interaction among group members through artworks created a non-threatening dynamic that facilitated sharing. At the same time, participants gained more realistic insights into themselves and others.

Group art psychotherapy and classical treatment approaches can be integrated within a multidisciplinary framework in the treatment of eating disorders to enhance patients' self-awareness and enable more effective treatment. By using group art psychotherapy, it is possible to strengthen ego structure and improve self-perception. Art psychotherapy can increase patients' self-confidence, encourage reintegration into social environments, and promote calmer attitudes by providing

a safe and supportive space for self-expression.[14,25,36] In this study, patients reported decreased dissatisfaction with life and increased engagement in daily activities at the end of the art psychotherapy sessions. One of the main goals of art psychotherapy is to improve spontaneity by reducing overly controlling attitudes. Participants also reported increased spontaneity and flexibility. A positive change in motivation for recovery plays a key role in patients with anorexia nervosa.[37] Participants were able to express themselves freely and felt a sense of belonging to the group, which positively influenced their quality of life. Most patients were able to return to their university education, which they had previously discontinued.

In this study, the psychodynamic processes emerging during art psychotherapy increased information exchange among group members and contributed to both medical and hospital-based treatment, supporting the implementation of a more holistic treatment approach focused on both the apparent and underlying needs of patients. By moving beyond merely treating symptoms, this program enabled the exploration of the individual dynamics underlying eating disorder symptoms during the treatment process.

The art psychotherapy process also provides detailed insight into the core symptoms of disordered eating behaviors. It serves as a therapeutic space capable of addressing patients' obsessive thoughts about eating. Schaverien (1994) emphasizes the functional role of painting in art therapy for patients with anorexia nervosa, noting that the artwork functions as a concrete object for projections of both patient and therapist and facilitates a gradual shift from concrete eating-related obsessions toward symbolic use of art materials.[23] Art psychotherapy allows individuals to move beyond the "patient" role through creative improvisation and to develop more adaptive ways of expressing themselves through various self-representations. Rehavia-Hanauer (2003) also discussed conflicts emerging in art psychotherapy for patients with anorexia nervosa, emphasizing that resistance, desires, dependent object relations, internalized negative maternal representations toward the body, and control-related conflicts associated with eating behaviors are reflected in artworks.[38]

In this study, group members provided feedback during the sharing phase at the end of sessions, where they were able to express themselves freely without embarrassment related to their illness. Problems such as rigidity, insecurity, and perfectionism, which often hindered self-expression, gradually decreased throughout the art psychotherapy process as participants recognized shared difficulties and developed awareness of these patterns.

Participants demonstrated significant improvements in multiple areas, including self-recognition, insight into the relationship between behaviors and emotional responses, acceptance, support, catharsis, and awareness of family relationships, facilitated through the therapeutic interaction among therapist, group members, and artworks. Additionally, patients' personal resources were strengthened, and their psychosocial and occupational functioning improved. Art psychotherapies appear to offer more than cognitive restructuring and behavioral activation, and psychodynamic art psychotherapy not only alleviates symptoms but also enhances individual capacities and resources.[17,18,39,40]

During treatment and recovery, individuals with eating disorders often struggle to avoid maladaptive behaviors such as restrictive eating or excessive exercise while being encouraged to engage in challenging behaviors, such as increasing food intake. This may lead to resistance. In this context, the functional importance of group art psychotherapy becomes particularly evident in patients with treatment-resistant eating disorders. Art psychotherapy provides a space where individuals can express their problems, representing a critical first step toward change and the integration of different aspects of the self through artistic expression.

This study has some limitations. Since research on group art psychotherapy for individuals with eating disorders in Türkiye is primarily limited to case-level studies, comparative data were not available. Furthermore, the limited number of long-term group art psychotherapy studies in the international literature makes direct comparison difficult. Nevertheless, the findings of this study provide valuable data on the application of art psychotherapy in eating disorders and contribute to its more effective integration into clinical practice.

Limitations and Strengths of the Study

This study was conducted with a small, all-female sample from a single clinical center, which limits the generalizability of the results. The lack of comparable national data and the limited number of long-term group art psychotherapy studies in the international literature restricted cross-study comparisons.

Despite these limitations, the study provides a rare and detailed description of a two-year psychodynamic group art psychotherapy process for eating disorders. The semi-structured program, developed based on pilot data and expert review, strengthens the methodological rigor of the study. The rich qualitative findings offer valuable insights into symbolic expression, emotional awareness, group cohesion, and functional gains, contributing meaningful evidence to a field with limited long-term research.

Conclusion

In light of these strengths and limitations, the findings of this study should be interpreted within the context of its methodological scope. Both the psychopathological features of eating

disorders and participants' illness experiences were examined in depth during the group art psychotherapy process, allowing qualitative gains to be evaluated. Specifically, the findings indicated the following: First, the symptom-centered focus on eating behaviors and body control decreased over time. While early sessions were dominated by restrictive eating, binge eating, excessive exercise, and weight-related preoccupations, participants gradually shifted from symptom-focused narratives toward symbolic exploration of emotions, relationships, sexuality, and identity. This reduction in symptom salience is considered a central marker of recovery in eating disorders.

Second, body image integration and tolerance improved. Participants who initially avoided bodily representations or depicted the body as fragmented, restricted, or threatening became increasingly able to symbolize the body more coherently, tolerate bodily imagery, and engage with three-dimensional body representations without avoidance. This reflects improvement in body image disturbance, a core diagnostic feature of eating disorders.

Third, emotion recognition and regulation increased. Participants demonstrated improved awareness and verbalization of emotions such as anger, shame, guilt, and fear—emotions that had previously been managed through disordered eating behaviors. This suggests reduced reliance on eating disorder symptoms as a primary affect regulation strategy.

Fourth, psychosocial and functional recovery was observed. In line with established recovery models, improvements in daily functioning were evident, including return to work or education, increased social participation, and enhanced overall functioning.

Fifth, motivation for recovery and engagement with treatment increased. Reduced resistance, increased spontaneity, and greater willingness to confront previously avoided themes (e.g., interpersonal closeness, sexuality, future orientation) were observed in later stages of the group process.

The findings showed that participants developed increased awareness of both themselves and their illness beginning from the first session and demonstrated positive behavioral changes throughout the process. Art psychotherapy enabled participants to symbolically externalize conflicts related to body image arising from eating disorders and to interpret and transform these into verbal expressions by providing a safe therapeutic space to address their difficulties and functioning. At the end of the group art psychotherapy process, participants' problems decreased, and their social/professional functioning and work/school performance improved.

As a result, art psychotherapy was effective in helping individuals with eating disorders appropriately channel their internal conflicts beyond the body. Based on these findings, several recommendations can be made for clinical practice and future research. Long-term group art psychotherapy may be considered a valuable complementary intervention within multidisciplinary treatment programs for eating disorders, particularly for patients who demonstrate resistance to verbally oriented therapies. Clinicians are encouraged to integrate structured, theme-based art psychotherapy approaches to facilitate emotional expression, body awareness, and symbolic processing. Future studies may benefit from incorporating mixed-method designs, larger and more diverse samples, and standardized outcome measures to further evaluate symptom change and therapeutic effectiveness over time.

Ethics Committee Approval: The study was approved by the Istanbul University, Istanbul Faculty of Medicine Non-invasive Clinical Studies of the Department of Mental Health and Diseases Ethics Committee (no: 2018/951, date: 06/07/2018).

Informed Consent: Informed consent was obtained from all participants.

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References

1. Hay P, Chinn D, Forbes D, Madden S, Newton R, Sugenor L, et al. Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of eating disorders. Aust N Z J Psychiatry 2014;48:977–1008.
2. Tavolacci MP, Grigioni S, Richard L, Meyrignac G, Déchelotte P, Ladner J. Eating disorders and associated health risks among university students. J Nutr Educ Behav 2015;47:412–20.e1.
3. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Washington, DC: APA; 2013.
4. Fairburn CG. Cognitive behavior therapy and eating disorders. New York: Guilford Press; 2008.
5. Rodgers RF, Lowy AS, Halperin DM, Franko DL. Influence of pro–pro-eating-disorder websites on body image and eating pathology: A meta-analysis. Eur Eat Disord Rev 2016;24:3–8.

6. Fairburn CG, Bailey-Straebler S, Basden S, Doll HA, Jones R, Murphy R, et al. A transdiagnostic comparison of CBT-E and interpersonal psychotherapy in the treatment of eating disorders. Behav Res Ther 2015;70:64–71.
7. Smolak L, Levine MP. The wiley handbook of eating disorders. Hoboken: Wiley; 2015.
8. Waller G, Babbs M, Milligan R, Meyer C, Ohanian V, Leung N. Anger and core beliefs in the eating disorders. Int J Eat Disord 2003;34:118–24.
9. Hinz LD. Drawing from within: using art to treat eating disorders. London: Jessica Kingsley Publishers; 2006.
10. Rumney A. Dying to please: anorexia, treatment and recovery. 2nd ed. Jefferson, NC: McFarland & Company; 2009.
11. Yücel B. Estetik bir kaygıdan hastalığa uzanan yol: Yeme bozuklukları. Klinik Gelişim 2009;20:39–44. [Article in Turkish]
12. Eren N. Psychodynamic art psychotherapy: Transference and countertransference. Turk Klin J Psychiatr Nurs-Special Topics 2016;2:46–53. [Article in Turkish]
13. Wadeson H. Art psychotherapy. 2nd ed. New York: Wiley; 2010.
14. Hornyak LM, Baker EK. Experiential therapies for eating disorders. New York: Guilford Press; 1989.
15. Matto HC. An integrative approach to the treatment of women with eating disorders. Arts Psychother 1997;24:347–54.
16. Ball B. Moments of change in the art therapy process. Arts Psychother 2002;29:79–92.
17. Eren N, Tunc P, Yücel B. Effect of a long-term art-based group therapy with eating disorders. Med Humanit 2023;49:576–82
18. Sporild IA, Bonsaksen T. Therapeutic factors in expressive art therapy for persons with eating disorders. Groupwork 2014;24:46–60.
19. Abbate-Daga G, Marzola E, Amianto F, Fassino S. A comprehensive review of psychodynamic treatments for eating disorders. Eat Weight Disord 2016;21:553–80.
20. Johnson DR. On the therapeutic action of the creative arts therapies: The psychodynamic model. Arts Psychother 1998;25:85–99.
21. Winnicott DW. Playing and reality. London: Tavistock; 1971.
22. Bollas C. The shadow of the object: psychoanalysis of the unthought known. New York: Columbia University Press; 1987.
23. Schaverien J. The transactional object: Art psychotherapy in the treatment of anorexia. Br J Psychother 1994;11:46–61.
24. Rubin DB. Multiple imputation for nonresponse in surveys. New York: Wiley; 1987.
25. Black C. Creating curative communities: Feminist group work with women with eating issues. Aust Soc Work 2003;56:127–40.
26. Renna C, Perrone S. The multidisciplinary integrated treatment program: Short- and long-term results with eating disorder patients. Presented at: 8th International Congress of Constructivism and Psychotherapy; Monopoli, Italy; 2003. [Article in Italian]
27. MacKenzie KR, Harper-Guiffre H. Introduction to group concepts. In: Harper-Guiffre H, MacKenzie KR, editors. Group Psychotherapy for Eating Disorders. Washington, DC: American Psychiatric Press; 1992.
28. Skårderud F. Sterk/Svak. Håndboken om Spiseforstyrrelser. Oslo: Aschehoug; 2000. [Article in Norwegian]
29. Fairburn CG, Harrison PJ. Eating disorders. Lancet 2003;361:407–16.
30. Yellowlees P. Group psychotherapy in anorexia nervosa. Int J Eat Disord 1988;7:649–56.
31. Wanlass J, Moreno JK, Thomson HM. Group therapy for eating disorders: A retrospective case study. J Spec Group Work 2005;30:47–66.
32. Pellicciari A, Rossi F, Iero L, Di Pietro E, Verrotti A, Franzoni E. Drama therapy and eating disorders: A historical perspective and overview of a project for adolescents. J Altern Complement Med 2013;19:607–12.
33. Gerge A, Pedersen IN. Analyzing pictorial artifacts from psychotherapy and art therapy when overcoming stress and trauma. Arts Psychother 2017;54:56–68.
34. Malchiodi C. Art therapy sourcebook. New York: McGraw-Hill; 2006.
35. Vitousek K, Watson S, Wilson GT. Enhancing motivation for change in treatment-resistant eating disorders. Clin Psychol Rev 1998;18:391–420.
36. Fallon P, Wonderlich SA. Sexual abuse and other forms of trauma. In: Garner DM, Garfinkel PE, editors. Handbook of Treatment for Eating Disorders. 2nd ed. New York: Guilford Press; 1997.
37. Nordbø RHS, Gulliksen KS, Espeset EMS, Skårderud F, Geller J, Holte A. The content of patients' wish to recover from anorexia nervosa. Int J Eat Disord 2008;41:635–42.
38. Rehavia-Hanauer D. Identifying conflicts of anorexia nervosa as manifested in the art therapy process. Arts Psychother 2003;30:137–49.
39. Gerge A, Hawes J, Eklöf L, Pedersen IN. Proposed mechanisms of change in the arts-based psychotherapies. Voices: A World Forum for Music Therapy. 2019;19.
40. Cirillo F, Spina G, Irrera M, Bozzola E, Mascolo C, Gargiullo L, et al. The impact of expressive arts therapy on alexithymia levels in adolescent inpatients with severe anorexia nervosa. Children 2025;12:1394.

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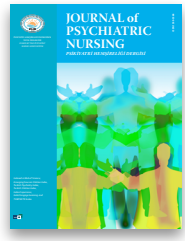

Qualitative Research

Decision-making processes in help-seeking following sexual violence: A qualitative study

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Abstract

Objectives: Sexual violence remains widely underreported, often described as the "tip of the iceberg," due to survivors' fear, stigma, and uncertainty about seeking help. Although reporting rates in Indonesia have increased, the processes through which survivors decide to seek support remain insufficiently understood. This study aimed to explore the decision-making experiences of survivors of sexual violence in seeking help.

Methods: A qualitative descriptive design was employed using purposive sampling. Participants were survivors of sexual violence who had sought help and had been screened for post-traumatic stress disorder (PTSD). Data were collected through in-depth interviews and analyzed using thematic analysis.

Results: Seven interrelated themes emerged, including the chronological context of sexual violence experiences, survivors' initial ignorance of sexual violence, multidimensional life changes following trauma, self-denial after sexual violence, decision-making processes driven by the refusal to fall into depression, the role of support from trusted individuals, and survivors' experiences after seeking help.

Conclusion: This study highlights the complexity of survivors' help-seeking decision-making and underscores the importance of trauma-informed and culturally sensitive mental health nursing care. Strengthening community education on sexual violence, supporting families in responding appropriately to disclosure, and developing targeted nursing interventions may facilitate survivors' recovery and engagement with professional services. Future research should further examine factors influencing help-seeking and evaluate the effectiveness of nursing interventions for survivors experiencing PTSD.

Keywords: Decision-making; mental health nursing; seeking help; sexual violence survivors

Sexual violence is a traumatic experience for those who endure it. Although women constitute the majority of survivors, sexual violence can also affect children and men. Sexual violence refers to any sexual activity carried out without consent through coercion, threats, or physical force, ranging from verbal harassment to forced sexual intercourse. Such acts may be perpetrated by known or unknown individuals and can occur in various settings, including homes and workplaces.[1–3] In essence, sexual violence involves the violation of bodily autonomy and the exertion of power and control over the victim, regardless of context or relationship.

Global estimates from the World Health Organization indicate that approximately one in three women (35%) worldwide have experienced physical and/or sexual violence during their lifetime, perpetrated by a partner or non-partner. Furthermore, about 30% of women who have been in intimate relationships report experiencing physical or sexual abuse by their partner.[4] In the United States, one in five women and one in 71 men have been raped, with nearly one in ten women reporting rape by an intimate partner, including forced or attempted sexual intercourse.[5] Data from[6] further indicate that one in ten men in the United States experience sexual

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or physical violence, with more than half of these incidents occurring before the age of 25. Despite these figures, fewer than 5% of attempted rape and rape cases are reported to law enforcement. Underreporting may occur for several reasons, including survivors' uncertainty about whether their experiences constitute sexual violence.[7]

In Indonesia, reported cases of sexual violence reached 348,448 in 2017, increased to 406,178 in 2018, and rose further to 431,471 in 2019. The highest prevalence of violence against women was reported in West Java (2,738), Central Java (2,525), and DKI Jakarta (2,222). Incest accounted for the largest proportion of cases in the personal domain with 822 cases, followed by rape, with 792 cases; sexual intercourse under coercion, 503 cases; sexual abuse, 206 cases; sexual exploitation, 192 cases; sexual harassment, 137 cases; marital rape with 100 cases; cybercrime-related sexual violence 35 cases; forced abortion 18 instances; sexual slavery and attempted rape one case.[8] The increase in reported cases reflects a growing willingness among survivors to disclose their experiences, despite the persistence of stigma and negative societal perceptions.

Help-seeking and reporting sexual violence are complex processes that often unfold over extended periods. Previous studies examining the #MeToo movement have shown that survivors may eventually disclose their experiences when they perceive social support and validation.[9–11] Other factors influencing reporting decisions include survivor and perpetrator characteristics. For example,[12] found that survivors under the age of 16 are less likely to report sexual violence, potentially due to limited legal awareness and difficulties in interpreting their experiences as criminal acts. Conversely, older survivors who possess greater knowledge of sexual violence may be more likely to seek help or report incidents. Given the multifaceted nature of these influences, examining the decision-making processes of sexual violence survivors in seeking help is both timely and essential. It is interesting for the researcher to explore the decision-making experiences of sexual violence victims in seeking help after sexual violence.

Materials and Methods

Study Design

This study employed a qualitative descriptive design to provide a comprehensive summary of a phenomenon as experienced by the participants. Descriptive qualitative research is characterized by an eclectic use of design and methods grounded in a constructivist inquiry framework.[13] This approach allows researchers to explore participants' experiences directly through in-depth interviews, followed by systematic analysis and thematic description of the phenomena under investigation.[14]

What is presently known on this subject?

- This qualitative study examines survivors' decision-making processes in help-seeking following sexual violence.

What does this article add to the existing knowledge?

- Seven interrelated themes reveal how chronological context, psychological responses, and relational factors shape help-seeking decisions.
- Survivors experienced substantial psychological, behavioral, and relational changes after sexual violence.

What are the implications for practice?

- Recognition of injustice and the desire for recovery emerged as key drivers of decision-making to seek support.
- Findings highlight the critical role of trauma-informed mental health nursing care and early education on sexual violence.

Participants

Participants in this study were survivors of sexual violence who had sought help by reporting the incident to authorities, family members, or trusted individuals. All participants had experienced more than one incident of sexual violence and had been screened for post-traumatic stress disorder (PTSD). PTSD screening was conducted using the PTSD Checklist for DSM-5 (PCL-5), which had previously been translated and validated in Indonesian populations.[15] Participants included individuals with mild or no acute PTSD symptoms to ensure clinical stability during the interview process.

Sample Size and Rationale

In qualitative descriptive research, sample adequacy is determined by the information richness of participants' accounts and the point at which additional interviews no longer contribute meaningfully new insights. Consistent with the concepts of information power and thematic saturation, recruitment and interviewing proceeded until the developing analysis indicated that the themes were sufficiently elaborated and repeated across accounts, and further data collection was unlikely to substantially extend interpretation. As such, the final sample (n=5) is presented as adequate for in-depth, experience-focused qualitative inquiry; however, the findings are intended for analytic transferability rather than statistical generalization.[16,17] The limited number of participants was not the result of inadequate recruitment efforts, but rather reflected ethical and contextual challenges inherent in sexual violence research. Prior to social media recruitment, the researchers attempted to collaborate with multiple sexual violence service organizations and hospitals to identify potential participants. However, access was not granted due to institutional confidentiality policies and concerns regarding survivor protection. Given these constraints, alternative recruitment strategies were required to ensure participant safety and voluntary engagement.

Data Collection

Participants were recruited via social media using an electronic flyer to increase reach and accessibility for a population that

may be difficult to approach through formal institutions due to stigma, privacy concerns, and fear of disclosure. Social media recruitment was used as a low-threshold entry point that allowed potential participants to initiate contact voluntarily, thereby supporting autonomy and perceived control. To minimize risk, all follow-up communication occurred privately, participation was opt-in, interviews were scheduled at the participant's preferred time and platform (Zoom or WhatsApp video call), and confidentiality protections were reiterated prior to and during the interview process. Given the sensitivity of sexual violence research, we adopted trauma-informed principles, including allowing participants to pause or stop the interview, avoiding unnecessary probing, and providing information on support services when needed.[18] It is acknowledged that recruitment through social media may influence who feels sufficiently safe to participate and may over-represent survivors who are digitally connected, have greater readiness to disclose, or have prior help-seeking experiences. These methodological implications are addressed in the limitations section to enhance transparency.[19]

During recruitment, approximately 10–15 individuals initially expressed interest in participating. However, during follow-up contact, several potential participants withdrew their consent prior to the interview. This withdrawal reflects the emotional complexity of revisiting traumatic experiences, concerns about retraumatization, and ongoing issues related to safety, trust, and privacy. Ultimately, five participants consented and completed the in-depth interviews. This pattern underscores the vulnerability of sexual violence survivors and highlights how recruitment strategies may shape who feels sufficiently safe to participate in research. These considerations are further discussed in the limitations section to enhance methodological transparency.

Interview Questions and Content

A semi-structured interview guide was developed to explore survivors' experiences of sexual violence and their decision-making processes in seeking help. A total of five participants were interviewed. The interview questions focused on participants' understanding of the sexual violence experienced, emotional, behavioral, and psychological changes following the incident, factors influencing decisions to disclose and seek help, sources of support, and perceived responses after seeking help. Open-ended questions were used to allow participants to describe their experiences freely, and probing questions were applied when necessary to clarify meanings and deepen exploration of relevant issues.

Data Analysis

Data were analyzed using thematic analysis. This method involves identifying patterns of meaning through systematic coding and theme development across the dataset. The analysis followed the six-step framework proposed by:[20] familiarization with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report.

Following each interview, audio-visual recordings were transcribed verbatim. The researcher repeatedly reviewed the transcripts while listening to the recordings to ensure accuracy and immersion in the data. Meaningful units of text were highlighted and assigned initial codes representing key ideas. Codes with similar meanings were then grouped into broader categories, from which themes were developed. The final themes were refined through iterative comparison across transcripts and subsequently presented in the results section.

Trustworthiness

To ensure rigor and trustworthiness, this study adhered to established criteria for qualitative research,[21] including credibility, dependability, confirmability, transferability, and authenticity. Credibility was enhanced through repeated transcript checking and comparison with audio recordings and field notes. Dependability was supported by involving additional researchers who audited the research process, including problem formulation, data collection, analysis, and validation procedures. Confirmability was ensured by maintaining transparent documentation of transcripts, field notes, and thematic analysis tables, which were reviewed and discussed collaboratively among the research team. Transferability was supported through detailed and systematic reporting of the research context and findings, enabling readers to assess applicability to similar settings. Authenticity was addressed by presenting participants' experiences in rich, descriptive narratives that accurately reflect their lived experiences.

Ethical Considerations

All research procedures were conducted in accordance with ethical principles for research involving human participants. Prior to data collection, participants were provided with detailed information about the study's purpose and procedures and gave informed consent. Participant autonomy, confidentiality, and non-maleficence were strictly maintained throughout the study. Ethical approval was obtained from the Ethics Committee of Universitas Indonesia (ethical clearance number: 163/UN2.F12D1.2.1/PPM2021), confirming that the study met established ethical standards and was deemed appropriate for implementation.

Results

Five survivors participated in this study (age range 20–47 years), including both women and men. Participants report-

Table 1. Participants characteristics

Code	Participants Information	Perpetrator relation with the victim	Type of sexual violence	Time of occurrence	PTSD score
P1	23 years old, female, single	Friend	Rape	Elementary school (grade 2 or 3)	53
P2	27 years old, female, single	Friend	Attempted rape	At the beginning/ the end of 2019	59
P3	47 years old, female, widow	Uncle	Sexual abuse	Nine years old	17
P4	20 years old, male, single	Newly acquainted individuals	Rape with alcohol	October 2020	41
P5	28 years old, male single	Newly acquainted individuals	Sexual exploitation	Five years ago,	39

ed experiences of rape, attempted rape, sexual abuse, and rape involving alcohol. Two participants experienced sexual violence during childhood or school-age years, whereas three first experienced sexual violence in adulthood. Most perpetrators were individuals known to the participants, such as friends or family members. Participant characteristics are summarized in Table 1. To protect confidentiality and minimize the risk of identification, only essential demographic information was collected and reported.

Themes

This study develops seven essential themes, including the chronological context of sexual violence experiences, the victim's ignorance of sexual violence, life changes following sexual violence, self-denial after trauma, refusing to fall into depression as a driver of decision-making, finding support from trusted individuals, and positive responses received after seeking help. Each theme will be explained below.

Theme 1: When It Began – The Chronology of Sexual Violence Experiences

Participants described sexual violence experiences occurring at different stages of life, ranging from childhood to adulthood. Several participants reported that the first incident occurred during their elementary school years, whereas others experienced sexual violence during adolescence or young adulthood. The age at first exposure was analytically significant, as participants who experienced sexual violence in childhood described limited understanding of the event at the time and only later recognized it as sexual violence.

> "*It happened when I was in elementary school, in second or third grade, so I only remember it from when I was little.*" (P1)
>
> *"It was about a year ago, just before COVID, it was late 2019 or early 2019, something like tha."* (P2)
>
> *"Hmm, I was 9 years old at the time."* (P3)
>
> *"I think it happened in October 2020."* (P4)
>
> *"It occurred several years ago, I think around five years ago if I'm not mistaken."* (P5)

The incidents occurred within routine daily contexts, including daytime, nighttime, and weekends.

> *"That's where it usually happens during the day."* (P1)
>
> *"Where it all started. I happened to be there on the weekend, on Saturday."* (P2)
>
> *"At first, when it was nighttime, he liked to go to the bedroom."* (P3)

Perpetrators were consistently described as individuals known and trusted by participants, such as friends, close peers, or family members. This familiarity contributed to confusion, disbelief, and delayed recognition of the violence, particularly when the perpetrator was perceived as a sibling-like figure or a trusted adult.

> "*There was a boy who lived next door to my house, a friend of my brother's. He was a year or two older than my brother. When I was in third grade, my brother was in seventh grade, so he was in eighth or ninth grade.*" (P1)
>
> *"When I was in college, I had a best friend on campus, so we were part of a group, he considered my brother like a real brother, there was no such thing as linking him."* (P2)
>
> *"The perpetrator was my uncle."* (P3)

Sexual violence frequently took place in private or familiar settings, including homes, bedrooms, workspaces within the home, or vehicles—spaces initially perceived as safe. Situational factors such as being alone, lack of supervision, and limited ability to seek immediate help heightened participants' vulnerability at the time of the incidents. These chronological and contextual elements shaped participants' early responses to the violence and influenced subsequent psychological reactions, disclosure patterns, and help-seeking trajectories.

> "*He liked to take me to the back room of my father's office to draw pictures, so that's where it happened. So, in my dad's office, which was in the back room, was usually where my dad worked.*" (P1)
>
> *"At that time, I played at his house because it was close by, and his parents told me to come and play because it was close to my boarding house, so his parents went to work, and his*

older sister happened to invite her younger sister to go to the salon together. And coincidentally, our friend, for some reason, didn't show up that day." (P2)

"At first, he would go to my bedroom at night, I couldn't lock the door because I wasn't sleeping alone, I slept with his child, my cousin. I don't know why I couldn't lock the door back then." (P3)

"I remember the incident at my boarding house, at that time I was under the influence of alcohol." (P4)

"At that time, I remember being taken to the back of the house, where there were bushes." (P5)

Theme 2: The Victim's Ignorance of Sexual Violence

The victim's ignorance of sexual violence is seen in the victim's responses to experiencing sexual violence, the victim's inability to fight back, and the victim's unawareness of the sexual violence incident. The victims' responses when experiencing sexual violence differ from each participant, as shown in the following statements.

"*I was quiet; I also do not know why I am quiet. There's nothing I can do even to fight back; there's nothing I do.*" (P1)

"*I was angry; I fought back, but honestly, because it took too long to fight him and he kept fighting with me, I became increasingly unable to fight; even when I gave up, just to stand up, I couldn't, I wanted to fall."* (P2)

"Maybe, I want to refuse, but I can't." (P4)

The victim's inability to fight back is explained in the following statements.

"Our life depends on him, so she (the trusted person) (the participant was silent for a moment) she can do nothing." (P3)

"The lust is there, especially if someone has been influenced by alcohol like that." (P4)

"Yeah, I was a teenager, so with a little seduction, then I want." (P5)

The following statements describe the victim's unawareness of the sexual violence incident.

"*I didn't know, so I am not aware of it.*" (P1)

"Actually, I am confused whether it is included in the (sexual) harassment or just (sexual) abuse because I am confused about what makes them different and what makes them the same, I am confused." (P2)

"Because I was still a kid, and at that age, kids didn't know sexual education." (P3)

Theme 3: Life Changes in All Aspects After Sexual Violence

The changes after sexual violence occur in all aspects of the victim's life, such as the physical, behavioral, and psychological changes experienced by the participants after they experienced the rape incident. They find it difficult to sleep and eat, are unfocused, sick, and even infected with HIV. This is demonstrated in the following statements:

"*Sometimes at night, I think about it (sexual violence incident), so it makes it difficult to sleep."* (P1)

"Because, when I am working, I feel like my life is everywhere, not focused. Then I go home, work again, and so on. And when someone invites me, I always don't want to, always can't, always refuse." (P2)

"I don't dare to sleep." (P3)

"I don't like to eat." (P4)

"After that incident, on January 23, I did a test for HIV. I got the result on January 28 or 29, and it was positive." (P4)

Behavioral changes also occur in the participants, as stated in their statements:

"*From that moment, I became less confident."* (P1)

"I'm a bit more introverted, keeping myself busy. I prefer to learn to take my mind off things that make me stressed." (P1)

"I was really depressed, very depressed; it can be said that for almost a year, I didn't open up to people. I just worked and went home." (P2)

Psychological changes are also experienced by the victims, where they blame themselves, get angry, cry, introspect, and feel broken. This is explained with the following statements:

"*I am more blaming myself and feel embarrassed, but the worst thing is I am blaming myself."* (P1)

"I had time to blame myself; at that time, I was so close to that person, am I too flirty?" (P2)

"So, whether I want to believe it or not, maybe there is something from us (the victims), I don't know whether it's true or not, we feel that there is 'something wrong with me, is there a magnet that makes me like this, is there something wrong with myself until I was made like this?" (P3)

"The feeling, broken and wondering, why should it be me, why me, while your friends that are together with you, why not them? Why me?" (P4)

Theme 4: Self-Denial After Sexual Violence

The ongoing impact experienced by the victims makes them deny themselves, where they refuse to remember the sexual violence incident and are overshadowed by the sexual violence experience. This is stated in the following statements:

"*There is something that makes me feel disgusted with myself."* (P2)

"I can't serve sexually well because of the impacts from this sexual abuse." (P3)

"While hiding this one, I try not to overthink about it, by keeping myself busy. When someone is working, I'm working too, with the hope I could forget the incidents." (P5)

All participants experience the feeling of being overshadowed by the sexual violence experience. This is stated in the following statements:

"*I don't know, what I feel is still scared when I meet that brother.*" (P1)

"If it is said PTSD, maybe it's because of the perpetrator." (P1)

"Even to share like this, I'm fluttering, flutter to remember the incidents." (P1)

"For example, like yesterday, suddenly we must remember that incident, it can suddenly burst into tears." (P2)

"Even to share with this one, seriously, I'm shaking." (P2)

"My mental is affected, so I have anxiety, I have severe anxiety, I'm easy to get panic and anxiety." (P3)

"So, right now, I feel like there is a trauma if there is someone who comes close." (P4)

"I've tried suicide and wanted to try; it looks like the scars are still there (the participant showed the scars from the suicide attempt she did on her left hand), so I cut my hand when I was alone at home." (P1)

"*If the self-destructive actions, such as punching the wall, if I'm angry, I bite my hand until it hurts, I kick the door until I'm bruised, something like that happens several times*." (P1)

Theme 5: Refusing to Fall into Depression as a Driver of Decision-Making

The victim's decision-making in seeking help occurs when they refuse to become down, encouraging them to seek help. The desire to recover and a feeling of being treated inappropriately make them refuse to fall into depression. The participants express this through the statements below.

"*I want to heal; I want to be strong.*" (P1)

"How about my future, how will I have a boyfriend, what do I need to do, is there a person that accepts me as I am, then do I need to tell this to the family, what …. (the participant stopped for a while) wait (the participant looked up and took a deep breath, the voice trembles) what will happen if I tell this to the family, even if later on I have a boyfriend, was it before… previously started a serious relationship, or later on I and he talk first, or after I believe first then I talk, how." (P1)

"I want to stay in my bedroom all day long; I won't let my sadness linger, so I don't like men. I'm working too because I always work in the IT field, which is generally men. If I make it too much, too instilled, no man can be trusted at all in this world. If that is the case, I cannot move forward in my job. Also, I cannot progress in my daily life; I will not be able to move forward, even if I cannot have a boyfriend." (P2)

"Disturbed, the first one is disturbed, disgusting, and disturbed." (P3)

"Because I'm the type of person who can't keep this to myself, I'll be sure to share, whether it is in a few months, a few days, or a few weeks. Even now, if I want to share with people, it's ok. If you want to tell anyone, it's ok, so that's why I shared with my cousin because I believe in her, she will not say to anyone." (P4)

"During that time, it became a burden, remembering the thing that was done, oh yes it's wrong, how's the solution, do I have to be quiet and keep it hidden, do I need to tell a person that I believe when I have the decision and courage to share, finally I shared, more or less after two years, there was courage to share because during that time I kept thinking, how is this, should this be kept by myself or shared with someone that I feel I believe." (P5)

The feeling of being treated inappropriately becomes one of the facts that the victims understand about the incident experienced. This is also one of the reasons why the victims finally decided to seek help. This is stated in the statements below.

"*So, after that, that lesson, I was devastated, more stressed because I thought it had happened because I had dreamed about it several times.*" (P1)

"In my opinion, it's almost the same as rape, there was no one there, and I didn't want it." (P2)

"I started to feel something is wrong after he threatened." (P3)

"Now it's the victim who is harmed, because we who were healthy, now we must follow therapy for the rest of our lives." (P4)

"I feel like it is something wrong, and I think he just wants the fun things, and it's just nonsense, just nonsense." (P5)

Theme 6: Finding Support from the Closest People

The closest and trusted person is one of the supports sought by the victims in seeking help and being the first to hear the story or report. This is shown in the following statements:

"*Finally, I talked to my senior because I cried until it was like she was scared, and she asked, 'What is wrong with you? Why are you crying like that?' She brought me from the bathroom, then moved me to the bedroom.*" (P1)

"Finally, I shared with a woman, but she is so far, she moved to Solo, so we just share virtually." (P2)

"I told my grandmother." (P3)

"With my cousin, I shared all the incidents that I experienced in that boarding house." (P4)

"The first time I shared was with a friend; he is a best friend, not just a friend." (P5)

The closeness of the victim with the person they first told influences the victim in seeking help.

"*The one who ordered me to consult is my best friend.*" (P1)

"Because of all of them, I'm also close to her. I can't stop myself from talking." (P2)

"Because my grandma and I are so close, so I talk about everything to her." (P3)

"So, with my cousin, I talked to her in February, why I could share with her, because she knows my position, she knows what my family is like." (P4)

"A best friend, and he is trusted, can be accounted for what I tell, will not be said to anyone. I've also told a lot, starting from the small things until that incident, and I tell him he can keep the secret." (P5)

Theme 7: Positive Responses Received After Seeking Help

The victims' positive responses after seeking help can be seen from the acceptance of the closest people and the victims' feelings after they seek help. This is shown in the statements below:

"*So, their acceptance of me makes me feel that they still accept me even with my current condition. That acceptance made me calmer, and at that time, I knew that I needed acceptance; I needed acceptance. At that time, finally, I knew that I needed acceptance.*" (P1)

"There is no judgment too, it's more like, 'Are you ok? But you are ok, right?'" (P2)

"Finally, my cousin brought me to a psychologist." (P4)

"After I shared this with that person, he gave advice; he said, 'Ok, don't overthink about it, what has already been done, just let it go, now it's time to change, don't let that incident happen again.'" (P5)

The victims feel the feeling of relief; this is stated in their statements:

"*After I shared until I felt sick, it turns out it is relieving.*" (P1)

"When I shared with this older sister, even if it's only a short time, I felt more relief." (P2)

"There is still a person who cares for me, there is still a person who can accept me no matter what and doesn't stay away from me, so it doesn't burden me too much; there is a person I can share with." (P4)

"It is very relieving; it turns out I didn't choose the wrong person to share with me my bitter life experience." (P5)

DISCUSSION

Theme 1: When It Began – The Chronology of Sexual Violence Experiences

The findings of this study highlight the importance of understanding the chronological context of sexual violence experiences in shaping survivors' psychological responses and help-seeking trajectories. Consistent with previous research, participants who experienced sexual violence during childhood reported limited capacity to interpret the experience as violence at the time it occurred, which contributed to delayed recognition and prolonged silence.[22,23] Early exposure to sexual violence has been associated with disruptions in cognitive and emotional development, increasing vulnerability to long-term psychological distress.

The timing and situational context of the incidents further illustrate that sexual violence often occurs within ordinary daily settings rather than extreme or overtly dangerous situations. Similar findings have been reported in prior studies indicating that sexual violence frequently takes place in familiar environments and is perpetrated by known individuals, which complicates survivors' ability to resist, disclose, or seek immediate help.[24,25] The presence of trust and emotional closeness with perpetrators may intensify confusion, self-blame, and disbelief, particularly among survivors who initially perceived the relationship as safe.

These findings also support evidence that the age at first exposure to sexual violence plays a critical role in shaping survivors' later help-seeking behaviors. Survivors who experienced violence during childhood often require extended periods to reinterpret the experience as unjust and harmful, which may delay disclosure and engagement with professional support services.[12,26] In contrast, survivors who experienced sexual violence in adulthood may demonstrate greater awareness of the violation but still encounter substantial emotional and relational barriers to seeking help.

From a mental health nursing perspective, recognizing the chronological and contextual dimensions of sexual violence is essential for delivering trauma-informed and developmentally sensitive care. Nurses working with survivors should assess not only current symptoms but also the timing of trauma exposure and relational context in which the violence occurred. Understanding these factors can inform individualized interventions, facilitate empathetic communication, and support survivors' meaning-making and recovery processes.[18,27]

Theme 2: The Victims' Ignorance of Sexual Violence

When the sexual violence occurred, participants described varied immediate responses, including remaining passive, attempting to resist, feeling disturbed, and being unable to refuse. These reactions can be understood within the framework of tonic immobility, a catatonic state characterized by muscular rigidity or hypotonia, trembling, reduced vocalization, analgesia, and diminished responsiveness to external stimuli.[28] Tonic immobility has been widely reported among survivors of rape and sexual violence and often manifests as an inability to resist or respond despite internal distress. Consistent with previous research, participants in this study described being

unable to fight back or refuse the perpetrator's actions.[29] Alcohol use by perpetrators also contributed to vulnerability, as described by one participant. According to,[24] perpetrators may engage in sexual violence when they perceive reduced accountability for their actions, particularly in contexts involving substance use.

These reactions contributed to survivors' delayed help-seeking, as many participants initially did not recognize their experiences as sexual violence. Feelings of confusion, lack of understanding, and difficulty distinguishing between sexual harassment, abuse, and rape were common. This is in line with research by,[9] who reported that some survivors, particularly those who experienced sexual violence at a young age, struggled to label their experiences accurately. Similarly,[23] found that delayed recognition of sexual violence often complicates later meaning-making and disclosure. In the present study, participants who experienced sexual violence during childhood required considerable time to interpret and acknowledge the incident as rape, which influenced their silence and inability to resist at the time of the event.

Theme 3: Life Changes in All Aspects After Sexual Violence

This study identified significant life changes across physical, behavioral, social, and psychological domains following sexual violence. Participants reported sleep disturbances, appetite loss, difficulty concentrating, illness, and, in one case, HIV infection. These findings are consistent with prior studies indicating that survivors of sexual violence are at increased risk of physical health problems, including sexually transmitted infections.[2,24,30] This aligns with studies from,[31,32] which found that the impact of sexual violence on women is that the victim becomes challenged to concentrate, often daydreams, and has an empty mind.

Behavioral and social changes were also evident, including social withdrawal, reduced self-confidence, and difficulties forming relationships, particularly with men. These findings align with previous research showing that sexual violence can disrupt survivors' sense of safety and trust, especially when the perpetrator is a known and trusted individual.[33,34] The betrayal of trust inherent in such experiences often leads survivors to generalize fear and avoidance toward others who resemble the perpetrator, thereby affecting social functioning.

Psychologically, participants described intense self-blame, anger, sadness, and feelings of brokenness. These emotional responses have been widely documented among survivors of sexual violence and are associated with long-term mental health consequences, including depression and anxiety.[31,32,34–36] Persistent self-blame, in particular, may exacerbate psychological distress and contribute to the development or maintenance of post-traumatic stress symptoms.

Theme 4: Self-Denial After Sexual Violence

Self-denial emerged as a central theme reflecting the ongoing psychological burden experienced by participants following sexual violence. Survivors described avoiding memories of the incident, experiencing intense self-disgust, engaging in sexual avoidance, and struggling with anxiety, depression, and post-traumatic stress symptoms. In extreme cases, participants reported self-harm and suicide attempts, underscoring the profound impact of the trauma.

Survivors' avoidance of intimacy and persistent self-blame contrasts with studies suggesting that some survivors engage in high-risk sexual behaviors following sexual trauma.[37–39] This divergence highlights the importance of sociocultural context in shaping post-trauma responses.

Participants' experiences of self-denial, shame, and sexual avoidance cannot be understood solely as individual psychological responses to trauma. These experiences are also shaped by broader sociocultural and religious norms that frame sexuality as taboo, morally regulated, and closely tied to personal worth and family honor. Within such contexts, survivors may internalize blame and perceive themselves as morally compromised, intensifying self-denial and avoidance of intimate relationships. Rather than facilitating disclosure, these norms may reinforce silence and emotional suppression, particularly when sexual violence is perpetrated by trusted individuals. Anticipated stigma, fear of victim-blaming, and concerns about social judgment may delay disclosure and professional help-seeking, thereby prolonging psychological distress.[25,27]

Consistent with previous research, many participants in this study exhibited symptoms indicative of PTSD, including intrusive memories, avoidance, heightened anxiety, and emotional numbing.[2,24,32,38,40,41] In severe cases, self-harm and suicide attempts were reported, reflecting the compounded effects of trauma and persistent self-blame. These findings reinforce the critical need for trauma-informed mental health interventions that address both psychological symptoms and the sociocultural contexts that shape survivors' recovery trajectories.[24,31,42]

Theme 5: Refusing to Fall into a Depression as a Driver of Decision-Making

Participants' decisions to seek help were often driven by a conscious refusal to remain overwhelmed by psychological distress. The desire to recover and a growing recognition that the experience was unjust and harmful motivated survivors to reconsider silence and seek support. According to,[26] before the survivors seek help, they label the action as a criminal act; the existence of motivational factors and understanding of the incident ultimately enables the survivors to mark the action as a crime and finally decide to seek help. In this study, the survivors were motivated or had reasons to seek help. The

survivors' motivation includes the desire to recover, the understanding of the sexual violence experienced, and the feeling of being treated inappropriately.

In this study, labeling the experience as sexual violence required time and reflection, particularly in contexts where rape culture and victim-blaming narratives are prevalent.[22] Survivors described prolonged internal deliberation, questioning whether the incident should be disclosed or kept hidden. Once survivors recognized the injustice of the act and its long-term impact on their lives, the desire for recovery outweighed fear and hesitation.

The survivors seek help after being sure that the sexual violence experienced is a criminal act. This aligns with the theory [26] that before the survivors seek help or report the incident, they label it as a criminal act. In this study, the factors that led survivors to decide to seek help were the desire to recover and the feeling of being treated inappropriately. Research[43] stated that the factors motivating survivors to report sexual abuse are deep psychological pressure, the desire to prevent more victims, and receiving effective responses from the authorities.

In their research,[44] stated that the seriousness of the crime would affect the survivor's decision to report the criminal act experienced; the greater the losses suffered, the more likely they are to seek help. In this study, the survivors felt aggrieved by the actions of the perpetrator, questioning their future, feeling disturbed, and burdened by their own minds. These factors led the survivors to believe that the rape they experienced was a severe criminal act, ultimately prompting them to seek help.

Theme 6: Finding Support from the Closest People

In this study, the survivors sought support from a trusted person, someone they knew, had a close relationship with, and chose as their helper. Talking about or seeking help is one way for others to stop victimization. In their study,[45] stated that victims want to share their experiences because they have a close relationship with someone, receive emotional support, and have an understanding of the facilities that support the survivors.

When the survivors seek help or talk about the incident, they choose a trusted person. In this study, the survivors told or sought help from a trusted person.[46] stated that victims would reveal the sexual abuse they experienced to their trusted peers. These people motivate them to talk to their parents or professionals. In this study, participants shared their experiences with a trusted person; for instance, one participant's friend suggested she seek counseling to get treatment for her mental health. Trust from others is an essential aspect of the process, as it helps the survivors tell or seek help. The trust given can enable the survivors to pass this process well. Victims' hesitation in telling or seeking help may result in delays in receiving mental health services.[46]

Theme 7: Positive Response Received After Seeking Help

The results of decision-making in seeking help received by the survivors can be seen from the helper's actions and the survivor's feelings after deciding to seek help. The helper accepts the condition, does not judge, takes the survivor to a psychologist, and gives advice; these responses are positive responses that the survivors receive, and the feelings felt after telling the incident experienced can help the survivors in their recovery process. This study received both positive and negative responses from the survivor's helper. In two participants, the helper gave positive responses, which helped the survivors in the recovery process. Unlike other participants, the survivor's helper was shocked and asked not to report the incident to others.

In their research,[9] also found the theme of the closest person's responses after the survivors shared their experiences of sexual violence. The helper responds positively, supports, and loves them. When the survivors receive support, it helps them shift negative thoughts to positive ones. This support helps survivors form coping strategies and become more courageous in living their lives.[35]

Strengths and Limitations

This study provides an in-depth description of how survivors of sexual violence navigate the decision-making process to seek help, including the progression from limited early recognition to disclosure and perceived outcomes after help-seeking. The inclusion of both women and men and the use of participants' verbatim accounts strengthen the credibility of the findings. Several limitations should be considered. First, the sample size (n=5) and purposive recruitment support depth rather than representativeness; therefore, findings should be interpreted as transferable to comparable contexts rather than generalizable. Second, recruitment through social media may have introduced self-selection bias by preferentially reaching survivors who are digitally connected and feel sufficiently safe and ready to disclose, potentially under-representing individuals with higher safety concerns or limited access to online platforms. Third, although we provided basic participant characteristics, richer sociodemographic details (e.g., education, socioeconomic context, and religious/cultural background) could further enhance contextual interpretation; future studies should incorporate these elements while maintaining confidentiality. Finally, while cultural and religious norms emerged as relevant to shame, self-blame, and disclosure, the present design did not aim to systematically compare these influences across diverse subcultures; future research could explicitly examine how socioreligious norms shape sexual self-concept, disclosure pathways, and engagement with professional services.

Conclusion

This qualitative study elucidates the complex decision-making processes of survivors of sexual violence in seeking help, highlighting how meaning-making, emotional struggle, and social context intersect over time. Drawing on the lived experiences of five survivors, the findings reveal that help-seeking is not a single event but a gradual and often prolonged process shaped by limited early recognition of sexual violence, profound psychological and behavioral changes, and persistent self-denial following trauma.

Across participants' narratives, the transition toward help-seeking emerged when survivors began to reframe their experiences as unjust and harmful, alongside a growing desire for recovery and self-preservation. The presence of trusted individuals and the receipt of non-judgmental, supportive responses played a critical role in facilitating disclosure and engagement with professional assistance. These findings were synthesized into seven interrelated themes encompassing cognitive, emotional, and relational dimensions of post-trauma decision-making.

Overall, this study underscores the importance of trauma-informed and culturally sensitive mental health nursing practices that acknowledge the delayed and nonlinear nature of survivors' help-seeking trajectories. By illuminating the processes through which survivors come to seek support, the findings contribute to a deeper understanding of post–sexual violence recovery and provide an empirical foundation for strengthening nursing interventions, early sexual violence education, and survivor-centered mental health services.

Implications and Future Directions

The findings of this study highlight the need for mental health services to adopt trauma-informed and survivor-centered approaches when working with individuals who have experienced sexual violence. Mental health nurses play a pivotal role in recognizing the delayed and nonlinear nature of survivors' help-seeking processes, particularly among those who initially struggle to label their experiences as sexual violence or who experience intense shame and self-blame. Nursing care should therefore prioritize emotional safety, non-judgmental communication, and psychoeducation that explicitly addresses myths surrounding sexual violence, consent, and responsibility.

In addition, nurses are well-positioned to provide family-focused education by guiding family members on appropriate responses when survivors disclose their experiences. Supportive, validating, and non-blaming family reactions may reduce survivors' psychological distress and facilitate engagement with professional mental health services. Community-based sexual violence education, delivered in culturally sensitive ways, is also essential to increase public understanding, reduce stigma, and promote early help-seeking behaviors.

Future studies are encouraged to explore factors that influence survivors' decisions to seek help using broader and more diverse participant characteristics, including variations in age, sociocultural background, and pathways to disclosure. Given that not all survivors feel safe or ready to speak openly about their experiences, alternative recruitment strategies and mixed qualitative approaches may help capture underrepresented perspectives.

Further research is also needed to examine the effectiveness of specific mental health nursing interventions—such as trauma-focused psychoeducation, supportive counseling, and family-based interventions—in reducing post-traumatic stress symptoms and strengthening survivors' coping and recovery processes. Longitudinal and intervention-based designs would be particularly valuable in clarifying how nursing care can support sustained recovery following sexual violence.

Ethics Committee Approval: The study was approved by the Universitas Indonesia Ethics Committee (no: 163/UN2.F12D1.2.1/PPM2021, date: 25/05/2021).

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References

1. Shors TJ, Millon EM. Sexual trauma and the female brain. Front Neuroendocrinol 2016;41:87–98.
2. White C. Sexual assault and rape. Obstet Gynaecol Reprod Med 2018;28:276–83.
3. World Health Organization. Understanding and addressing violence against women. 2012. Available at: http://apps.who.int/iris/bitstream/10665/77434/1/WHO_RHR_12.37_eng.pdf. Accessed Mar 24, 2026.
4. World Health Organization. Violence against women. 2017. Available at: https://www.who.int/news-room/fact-sheets/detail/violence-against-women. Accessed Oct 12, 2020.
5. National Sexual Violence Resource Center. Statistics about sexual violence. 2010.
6. Centers for Disease Control and Prevention (CDC). Intimate partner violence, sexual violence, and stalking among men. 2020. Available at: https://www.cdc.gov/intimate-partner-violence/about/intimate-partner-violence-sexual-violence-and-stalking-among-men.html?CDC_AAref_Val=https://www.cdc.gov/violenceprevention/intimatepartnerviolence/men-ipvsvandstalking.html. Accessed Jul 21, 2021.
7. College of Saint Benedict. Sexual Assault Survivor's Guide – CSB/SJU. 2020. Available at: https://www.csbsju.edu/chp/sexual-assault-survivors-guide. Accessed Oct 28, 2020.
8. Komnas Perempuan. Kekerasan meningkat: Kebijakan penghapusan kekerasan seksual untuk membangun ruang aman bagi perempuan dan anak perempuan. Catahu Catatan Tah tentang kekerasan terhadap Peremp 2019. Available at: https://www.openparliament.id/wp-content/uploads/2021/10/Catatan-Tahunan-Kekerasan-Terhadap-Perempuan-2020.pdf?utm_source=chatgpt.com. [Article in Indonesian]
9. Alaggia R, Wang S. " I never told anyone until the # metoo movement ": What can we learn from sexual abuse and sexual assault disclosures made through social media ? Child Abuse Negl 2020;103:104312.
10. Pain P. " It took me quite a long time to develop a voice ": Examining feminist digital activism in the Indian # MeToo movement. 2020.
11. Lee BH. #Me Too movement; it is time that we all act and participate in transformation. Psychiatry Investig 2018;15:433.
12. Melo SN, Beauregard E, Andresen MA. Factors related to rape reporting behavior in Brazil: examining the role of spatio-temporal factors. J Interpers Violence 2019;34:2013–33.
13. Polit DF, Beck CT. Nursing research: Generating and assessing evidence for nursing practice. 10th edit. Wolters Kluwer; 2017. p.368.
14. Afiyanti Y, Rachmawati IN. Metodologi penelitian kualitatif dalam riset keperawatan. Jakarta: Rajagrafindo persada; 2014. [Article in Indonesian]
15. Budiman A. Hubungan Forgivenees dan self-efficacy terhadap gejala PTSD pada korban intimate partner violence. Fak Psikologi, Univ Indones. 2018. [Article in Indonesian]
16. Malterud K, Siersma VD, Guassora AD. Sample size in qualitative interview studies: guided by ınformation Power. Qual Health Res 2016;26:1753–60.
17. Wutich A, Beresford M, Bernard HR. Sample sizes for 10 types of qualitative data analysis: an integrative review, empirical guidance, and next steps. Int J Qual Methods 2024;23:1–14.
18. Anderson KM, Karris MY, DeSoto AF, Carr SG, Stockman JK. Engagement of sexual violence survivors in research: trauma-informed research in the THRIVE study. Violence Against Women 2023;29:2239–65.
19. Chanmugam A, Christensen MC, Conde D, McMichael C. Research recruitment methods when participant safety and stigma are concerns: the case of sex trafficking survivors. Int J Soc Res Methodol 2025.
20. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol 2006;3:77–101.
21. Polit DF, Beck CT. Essentials of nursing research: appraising evidence for nursing practice. 9th edit. Philadelphia: Wolters Kluwer; 2018. p.400.
22. Rousseau C, Manon B, Ricci S. A metasynthesis of qualitative studies on girls' and women's labeling of sexual violence. Aggress Violent Behav 2020;52:101395.
23. Gul H, Gul A, Yurumez E, Öncü B. Voices of adolescent incest victims: A qualitative study on feelings about trauma and expectations of recovery. Arch Psychiatr Nurs 2020;34:67–74.
24. Bows H. Sexual violence. In Corteen K, Morley S, Taylor P, Turner J, editors. A Companion to crime, harm victimisation. Great Britain: Bristol University Press Digital; 2016. p.205–8.
25. McCleary-Sills J, Namy S, Nyoni J, Rweyemamu D, Salvatory A, Steven E. Stigma, shame and women's limited agency in help-seeking for intimate partner violence. Glob Public Health 2016;11:224–35.
26. Greenberg MS, Ruback RB. After the crime: victim decision making. Boston, MA: Springer US; 1992. Available at: http://link.springer.com/10.1007/978-1-4615-3334-4. Accessed Oct 28, 2020.
27. Green J, Satyen L, Toumbourou JW. Influence of cultural norms on formal service engagement among survivors of intimate partner violence: a qualitative meta-synthesis. Trauma Violence Abuse 2024;25:738–51.
28. Möller A, Söndergaard HP, Helström L. Tonic immobility during sexual assault - a common reaction predicting post-traumatic stress disorder and severe depression. Acta Obstet Gynecol Scand 2017;96:932–8.
29. Gbahabo DD, Duma SE. "I just became like a log of wood … I was paralyzed all over my body": women's lived experiences of tonic immobility following rape. 2021. Available at: https://doi.org/10.1016/j.heliyon.2021.e07471. Accessed Jul 12, 2021.
30. Banvard-Fox C, Linger M, Paulson DJ, Cottrell L, Davidov DM. Sexual assault in adolescents. Prim Care 2020;47:331–49.
31. Anindya A, Indah Y, Dewi S, Oentari ZD. Dampak psikologis dan upaya penanggulangan kekerasan seksual terhadap perempuan. Terap Inform Nusant 2020;1:137–40. [Article in Indonesian]
32. Ba I, Bhopal RS. Physical, mental and social consequences in civilians who have experienced war-related sexual violence: a systematic review (1981-2014). Public Health 2017;142:121–35.

33. Tursilarini TY. Dampak kekerasan seksual di ranah domestik terhadap keberlangsungan hidup anak. J Kemensos 2017. [Article in Indonesian]
34. Hamid AYS. Aspek psikososial pada korban tindak kekerasan dalam konteks keperawatan jiwa. J Keperawatan Indones 2014;8:23–9. [Article in Indonesian]
35. Fu'ady MA. Dinamika psikologis kekerasan seksual: sebuah studi fenomenologi. Psikoislamika J Psikol dan Psikol Islam 2011;8:191–208. [Article in Indonesian]
36. Susan A B, Jennifer A S, Jennifer L, Kelly, T J, Joyce, et al. Psychosocial consequences of sexual violence in South Kivu Province, Democratic Republic of Congo. Int Sch J African J Gend Women Stud 2019;4:1–6.
37. Abajobir AA, Kisely S, Maravilla JC, Williams G, Najman JM. Gender differences in the association between childhood sexual abuse and risky sexual behaviours: A systematic review and meta-analysis. Child Abuse Negl 2017;63:249–60.
38. Ashby BD, Kaul P. Post-traumatic stress disorder after sexual abuse in adolescent girls. J Pediatr Adolesc Gynecol 2016;29:531–6.
39. Thompson R, Lewis T, Neilson EC, English DJ, Litrownik AJ, Margolis B, et al. Child maltreatment and risky sexual behavior. Child Maltreat 2017;22:69–78.
40. Mason F, Lodrick Z. Psychological consequences of sexual assault. Best Pract Res Clin Obstet Gynaecol 2013;27:27–37.
41. Nöthling J, Simmons C, Suliman S, Seedat S. Trauma type as a conditional risk factor for posttraumatic stress disorder in a referred clinic sample of adolescents. Compr Psychiatry 2017;76:138–46.
42. Brooker C, Tocque K. Mental health risk factors in sexual assault: What should Sexual Assault Referral Centre staff be aware of? J Forensic Leg Med 2016;40:28–33.
43. Trihastuti A, Nuqul FL. Menelaah pengambilan keputusan korban pelecehan seksual dalam melaporkan kasus pelecehan seksual. Personifikasi 2020;11(1). [Article in Indonesian]
44. Reyns BW, Englebrecht CM. The stalking victim's decision to contact the police: A test of Gottfredson and Gottfredson's theory of criminal justice decision making. J Crim Justice 2010;38:998–1005.
45. Brennan E, McElvaney R. What helps children tell? a qualitative meta-analysis of child sexual abuse disclosure. Child Abus Rev 2020;29:97–113.
46. Grandgenett HM, Pittenger SL, Dworkin ER, Hansen DJ. Telling a trusted adult: Factors associated with the likelihood of disclosing child sexual abuse prior to and during a forensic interview. Child Abuse Negl 2021;116:104193.

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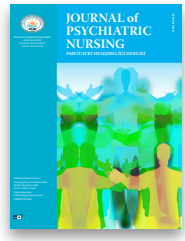

Original Article

Effect of psychiatric nurses' counseling on exercise behavior in individuals diagnosed with psychiatric disorders: A transtheoretical model-based randomized controlled trial

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Abstract

Objectives: Insufficient physical activity, which is one of the unhealthy lifestyle behaviors, is more common in individuals diagnosed with psychiatric disorders. This experimental study aimed to examine the effect of psychiatric nurses' counseling role on improving exercise behavior in individuals diagnosed with psychiatric disorders through the TTM framework.

Methods: This randomized controlled trial, with pretest, posttest, and follow-up assessments, included 61 patients from a community mental health center (intervention, n=30; control, n=31). The study data were collected using the "Information Form", "Exercise Change Stages Scale", "Exercise Processes of Change Scale", "Exercise Self-Efficacy Scale", and "Exercise Decisional Balance Scale".

Results: The proportion of participants in the "preparation" phase after the intervention increased (n=15, 48.4%) in the intervention group, while the rate of participants in the "preparation" phase remained the same in the control group (n=8, 26.7%). The intervention group showed increases in the "Exercise Self-Efficacy Scale" and "Exercise Decisional Balance Scale" pros scores from baseline to post-intervention, with these gains persisting at follow-up. As a result, it was observed that the counseling role of psychiatric nurses through the Transtheoretical Model was effective in improving exercise behavior and physical health conditions of individuals diagnosed with psychiatric disorders.

Conclusion: The counseling role of psychiatric nurses based on the Transtheoretical Model has been found to be effective in improving exercise behavior among individuals diagnosed with psychiatric disorders, thereby reducing risks associated with physical illnesses. Additionally, the findings suggest that Transtheoretical Model-based counseling can be effectively utilized in the independent practices of psychiatric nurses, thereby strengthening their counseling role.

Keywords: Counseling; exercise; individuals diagnosed with psychiatric disorders; physical health; psychiatric nursing; transtheoretical model

On average, life expectancy is reduced by about one to two decades in individuals diagnosed with psychiatric disorders.[1–3] This disparity is largely attributed to adverse lifestyle behaviors such as social exclusion, alcohol consumption, and smoking, as well as negative physical health behaviors, including obesity, inadequate nutrition, lack of exercise, and sleep disorders.[4–6] Antipsychotic medications contribute to metabolic disturbances (e.g., increased lipid levels and impaired glucose regulation), thereby compounding the elevated cardiovascular risk observed in people with psychiatric disorders.

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[5,7] Furthermore, the sedative effects of antipsychotic medications, along with the negative symptoms of psychosis, significantly diminish patients' ability and motivation to engage in physical exercise.[4,8,9]

Depressive symptoms, diminished self-confidence, and tendencies toward social isolation can lead to reduced physical activity in individuals diagnosed with psychiatric disorders.[1,4] However, regular exercise programs have been shown to mitigate these symptoms and enhance overall physical health. Evidence from systematic reviews shows that exercise interventions are effective for schizophrenia populations and confer measurable physical and mental health benefits.[10] In research conducted by Bailey et al., patients with psychosis were found to recognize the importance of reducing sedentary behaviors, but increasing physical activity was not always their primary concern.[7] Nevertheless, counseling interventions that encourage regular physical exercise are associated with meaningful mental and physical health benefits.

In an era of widespread access to information, the main obstacle to improving the life expectancy of individuals diagnosed with psychiatric disorders is the gap between knowledge and implementation. Addressing this gap requires prioritizing evidence-based interventions. The World Health Organization[11] has emphasized that best practice recommendations incorporating a person-centered approach and effective management of physical healthcare are essential in bridging this implementation gap. Through their counseling responsibilities, psychiatric nurses can implement various interventions, such as supporting patients and their families, offering advice and teaching behavioral change strategies, as well as sharing essential health-related information. The Transtheoretical Model (TTM) is one of the most commonly employed frameworks for conceptualizing and supporting health behavior change. Developed by James Prochaska and Carlo DiClemente,[12] the TTM conceptualizes behavior change as a process rather than an outcome. It emphasizes the necessity of stage-matched interventions to facilitate sustainable modifications.[13] Prochaska and DiClemente[12] argue that behavior change proceeds through a voluntary, progressive series of stages. This makes stage-appropriate, individualized intervention planning essential.

As a structured approach, the TTM serves as a valuable tool in guiding nurses in promoting healthy lifestyle behaviors.[12,13] Within nursing care, it can be utilized as a framework to identify individuals at different stages of change, plan personalized goals and strategies for nursing interventions, and assess the effectiveness of these interventions.[14] While the TTM has been used to explain the motivational determinants of physical activity (PA), limited evidence exists regarding its applicability to individuals diagnosed with psychiatric disorders. Romain and Abdel Baki[15] demonstrated a positive correlation between PA and the processes of change, as well as perceived benefits. They found that physically active individuals exhibited higher levels of behavioral change processes and perceived benefits compared with inactive individuals diagnosed with psychiatric disorders. Furthermore, Anastopoulou et al.[16] examined the effect of TTM on dietary behaviors in individuals diagnosed with psychiatric disorders. Those receiving the TTM-based intervention (n=30) demonstrated healthier dietary behaviors and greater weight reduction compared with the control group (n=30), indicating preliminary support for the model's effectiveness in behavior modification.

In Türkiye, a variety of descriptive and experimental studies have been conducted using the Transtheoretical Model (TTM) in patient groups other than those with psychiatric diagnoses.[17–19] However, research applying the TTM to psychiatric populations remains limited. Mansuroğlu and Kutlu[20] delivered a TTM-based psychoeducation program to individuals diagnosed with psychiatric disorders in a group setting and evaluated its impact on healthy lifestyle behaviors. They reported a moderate improvement in physical exercise. Similarly, Fırıncık et al.[21] examined the effects of a nutrition education program integrated with physical exercise on individuals diagnosed with schizophrenia, finding increased physical activity levels following a four-session group intervention. Against this background, the present study contributes to the literature by offering an explicitly model-driven, stage-matched TTM intervention delivered via personalized one-to-one nursing counseling. The study targets individuals with severe psychiatric disorders and employs an experimental design that includes pretest, posttest, and follow-up assessments. These features constitute the study's originality and contribution.

A review of the literature reveals that studies focusing on exercise behavior and using the Transtheoretical Model (TTM) in individuals diagnosed with psychiatric disorders have pre-

What is presently known on this subject?

- Individuals diagnosed with psychiatric disorders experience significantly lower levels of physical activity, contributing to poorer physical health outcomes and reduced life expectancy. There is a recognized need for effective interventions to promote exercise in this population.
- Mental health nurses are uniquely positioned to advance integrated mental and physical health in individuals with psychiatric conditions.

What does this article add to the existing knowledge?

- Psychiatric nurses can offer a range of initiatives, including providing training on exercise behavior change to patients and sharing information, within their counseling role.
- Psychiatric nurses can improve and protect exercise behavior in individuals diagnosed with psychiatric disorders by performing a counseling role.
- The biggest obstacle to increasing the life expectancy of individuals diagnosed with psychiatric disorders is not a lack of knowledge, but a gap in practice.

What are the implications for practice?

- Individuals enrolled in Community Mental Health Centers (CMHCs) who are at elevated physical health risk should be identified, and individualized physical activity interventions should be planned and implemented.

dominantly been conducted in Western countries, with limited research conducted in Eastern and Asian contexts. Given Türkiye's geographical position between Asia and Europe, this study sets an important precedent for future research in this area. Considering the cognitive impairments and lack of social agency that may hinder autonomous decision-making in this population, it is essential to develop culturally sensitive approaches to promoting exercise behaviors.

The objective of this experimental study was to examine the effect of psychiatric nurses' counseling role on improving exercise behavior in individuals diagnosed with psychiatric disorders through the TTM framework. By integrating TTM-based counseling strategies, psychiatric nurses can adopt a more holistic approach to care, addressing the physical health needs of this population, which are often overlooked. By encouraging patients to initiate or increase their physical activity levels, nurses can facilitate improvements in overall well-being and life expectancy. One of the primary barriers to regular exercise among overweight and obese individuals is the stigma associated with weight.[22,23] Individuals diagnosed with psychiatric disorders often face dual stigmatization due to their condition and weight status. Making physical exercise a regular part of everyday life may lessen stigmatization and support more positive health outcomes.

Hypotheses

To determine the effect of psychiatric nurses' counseling role on improving exercise behavior in individuals diagnosed with psychiatric disorders through the TTM, the following hypotheses were proposed:

Hypothesis 1. Individuals diagnosed with a psychiatric disorder who receive counseling based on the TTM are expected to show a significant difference on the "Exercise Change Stages Scale" compared with the control group.

Hypothesis 2. Individuals diagnosed with a psychiatric disorder who receive counseling based on the Transtheoretical Model (TTM) are expected to show significant differences on the "Exercise Change Processes Scale", "Self-Efficacy Scale", and "Decision Balance Scale" compared with the control group.

Materials and Method

Study Design

A single-blind, randomized controlled design was used. This study was guided by the CONSORT checklist. Reporting was performed in accordance with CONSORT principles.

Place and Date

The study was conducted between June 2018 and December 2020 in an industrial, metropolitan city in Türkiye, with a local population of approximately 2 million. There are two Community Mental Health Centers (CMHCs) in this metropolitan city. The CMHC where the research was conducted is located in the city center and is easily accessible. Patients enrolled in the CMHC were generally diagnosed with "schizophrenia spectrum and other psychotic disorders", while a small proportion were diagnosed with "mood disorders" or "mood disorders" accompanied by "intellectual disability". The CMHC is activity-centered, with regular course schedules (including cognitive exercise, occupational therapy, drama, choral work, folk dance, music therapy, and horse therapy) from 09:00 to 16:00 on weekdays. Patients diagnosed with psychiatric disorders and their families are informed about the course programs and encouraged to participate.

Participants and Sample Size

The study was conducted in a CMHC affiliated with a state hospital. A total of 396 patients are registered at the CMHC. The sample size was calculated using a priori power analysis with the G*Power 3.1.9.2 program. For the analysis, F tests/ANOVA for repeated measures (group × time interaction; within–between interaction) were selected for the randomized controlled experimental design, which included two groups (intervention–control) and three time points (pretest–posttest–follow-up). The power analysis was performed based on the primary outcome measure, the total score of the Exercise Self-Efficacy Scale (ESES). Parameters: effect size=0.185; α=0.05; power=0.80. Accordingly, it was determined that a minimum of 50 participants (25 in each group) should be included in the study. From a total of 396 patients, 61 who met the eligibility criteria and agreed to participate were selected as the study sample (Fig. 1). To anticipate possible attrition, 31 participants were placed in the intervention group, while 30 were allocated to the control group.

Inclusion Criteria

Participants met the following inclusion criteria: DSM-5–defined schizophrenia spectrum or other psychotic disorder; current use of antipsychotic medication; age between 18 and 70 years; and BMI≥25kg/m^2.

Exclusion Criteria

Exclusion criteria were as follows: having an intellectual disability; being in the postpartum period; having a diagnosed eating or feeding disorder; having psychosis due to general medical conditions; being pregnant; having an orthopedic condition that prevents walking; experiencing visual or auditory impairments; or having a diagnosis of diabetes, respiratory system disorder, or hypertension.

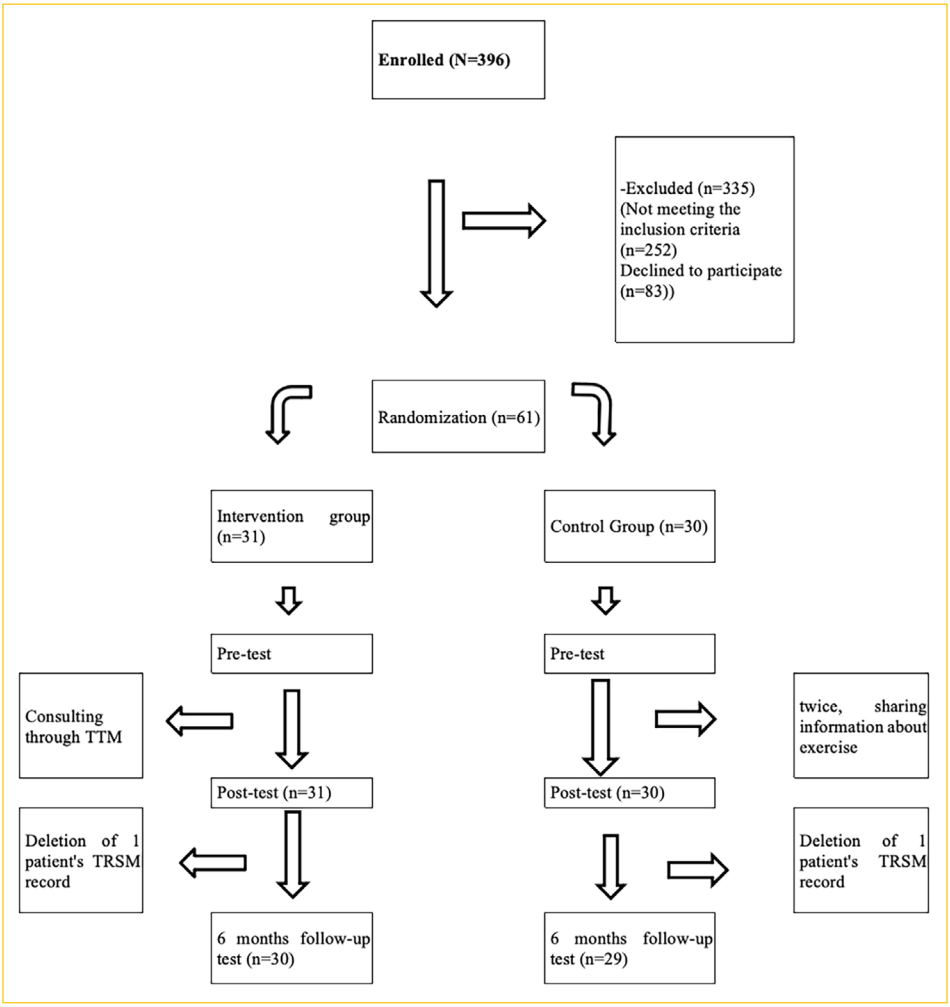

Figure 1. CONSORT flow diagram of the study.

Randomization and Blinding

The first author assessed patients' medical records and consulted with healthcare professionals involved in patient care to determine whether they met the study eligibility criteria. Of 396 patients assessed for eligibility, 252 were excluded because they either did not meet the inclusion criteria or declined participation. Sixty-one participants were randomized (computer-generated sequence; stratified by gender and age; concealed envelopes) to the intervention (n=31) or control (n=30) groups. The randomization was conducted by a third party not involved in the research team (see Fig. 1 for the CONSORT diagram summary of the trial design).

Data Collection Tools

Questionnaire: Drawing on previous studies, the research team designed the questionnaire.[5,22,24] Minor revisions were made based on expert opinions. The final questionnaire consisted of 24 questions (yes/no questions in the form of open-ended and visual analogue scales) under the headings of "Individual Characteristics", "Features Associated with Physical Health", and "Features Associated with Psychiatric Disease".

Exercise Stages of Change Scale: This scale was formulated by Prochaska and DiClemente[12] as part of smoking cessation studies. Marcus et al.[25] adapted the "Stages of Change Scale" for exercise. The scale is used to categorize individuals into five distinct stages of exercise behavior change through an algorithmic approach. Classification is based on a single question assessing exercise behavior, with responses determining the individual's current stage of exercise behavior. Each stage represents a more advanced level compared with the previous one in terms of an individual's awareness, motivation, and actions related to exercise behavior. In a further adaptation for Turkish society, Gümüş and Kitiş[26] validated the scale, reporting a Cronbach's alpha value of 0.79 for reliability. Cronbach's alpha for the scale in our sample was 0.94.

Exercise Processes of Change Scale: This was formulated by Marcus et al.[25] and reflects the experiences used by individuals in the process of transitioning to the next stage of change. It consists of 40 items measured on a five-point Likert scale (never, rarely, occasionally, often, very often).

Higher scores on the scale indicate a greater likelihood of success in achieving change.[26] The scale consists of ten subdimensions grouped under two main categories. Cognitive processes include "consciousness raising, dramatic relief, environmental reevaluation, self-reevaluation, and social liberation". Behavioral processes consist of "counter-conditioning, helping relationships, contingency management, self-liberation, and stimulus control". The Cronbach's alpha value was reported as 0.97, and the scale was translated into Turkish by Gümüş and Kitiş.[26] In the study adapted by Ay and Bayık Temel,[27] the Cronbach's alpha value was reported as 0.95. Cronbach's alpha for the scale in our sample was 0.90.

Exercise Self-Efficacy Scale: This was formulated by Marcus et al.[25] It is a five-item Likert-type scale that measures individuals' self-confidence in exercising. A high total score indicates that the individual has high self-confidence in exercise. In the study adapted by Ay and Bayık Temel,[27] the Cronbach's alpha value was reported as 0.90. Cronbach's alpha for the scale in our sample was 0.96.

Exercise Decision-Balance Scale: Developed by Marcus et al.,[25] the scale comprises 16 items rated on a five-point Likert-type scale ("not important" to "highly important"). The scale, which reveals the benefits and harms of changing behavior, consists of two subdimensions: perception of benefit and perception of harm. High benefit and harm subscale scores indicate that the individual is aware of the benefits and harms of exercise behavior and has a greater likelihood of making informed decisions about change. The Cronbach's alpha of the scale was reported as 0.82 by Gümüş and Kitiş.[26] In our study, the Cronbach's alpha value was 0.92.

My Physical Health Chart: This is a concrete tool prepared by the researcher in which the goals that participants should achieve during their exercise training are determined. This chart was completed by the researcher and the patient together and was evaluated with the patient before and after each interview.

Exercise by Stages of Change Brochure: For each stage of change outlined in the TTM, a brochure was designed and distributed to the intervention group, offering both written and visual guidance to encourage exercise. Before being provided to the patient, the brochure was introduced by the researcher, and the patient's stage of change was identified using the brochure and reviewed together with the patient.[28,29]

Data Collection Process

In the pretest, posttest, and follow-up phases, the stage of change in exercise behavior for participants in both groups was determined using the "Exercise Stages of Change Scale" algorithm.

Data Collection Process – Preliminary Stage

To conduct the study in a qualified and effective manner, a quiet and simple room was selected and used exclusively by the researcher. Participants randomized and blinded into both groups were introduced to the study forms and scales, which were administered via face-to-face interviews. All participants received information about the study timeline and program, including the intervention group (one training session per week for eight weeks) and the control group (two sessions over the same period). Exercise counseling targeted planned, purposeful, and repetitive activities (i.e., exercise), primarily walking and simple home-based exercises, in line with participants' functional capacity and safety considerations.

Intervention Group Implementation Stage

Each interview lasted approximately 45–60 minutes and was conducted weekly for eight weeks. Before each interview, the "Exercise Stages of Change Scale" was used to determine the stage of the patients (precontemplation, contemplation, preparation, action, maintenance). Based on these assessments, the intervention approach was guided by the "Goals, Processes, and Strategies for the Exercise Stages of Change" Table 1. During the precontemplation stage, patients were informed about the benefits of regular exercise to raise awareness. In the contemplation stage, brochures were provided to enhance patients' confidence in making changes, goal-setting activities were conducted, and these goals were recorded in the "My Physical Health" follow-up form. For patients in the preparation stage, individualized planning was carried out, an exercise initiation date was determined, and support was provided throughout the change process. Informative materials (brochures, charts, etc.) containing exercises (walking + home-based exercises) that patients in the action phase could perform at home were provided. The exercises in the brochure were demonstrated to the patient one-on-one during the consultation, and patients were asked to practice them. They were encouraged to keep regular records. In the maintenance stage, positive reinforcement was provided to ensure the sustainability of achievements, and strategies were developed to prevent the influence of negative stimuli.

After the "Goals, Processes, and Strategies for the Stages of Exercise Change" table was developed, input on the program was obtained from five experts: one Professor, two Associate Professors, and one Assistant Professor in Psychiatric and Mental Health Nursing, as well as one clinical psychologist who is a member of the Motivational Interviewing Network of Trainers. Based on expert feedback, the program was revised and subsequently piloted with two individuals diagnosed with psychiatric disorders, after which it was finalized. Participant feedback and scale scores indicated that the program was

Table 1. Goals, processes and strategies for exercise change stages

Stages	Goals	Change processes	Strategies for supporting change
Pre-contemplation	Raising awareness for the need for change	Raising awareness Emotional arousal Re-evaluating the environment	The impact of excess weight on health and body image, identifying barriers to regular exercise The effects of regular exercise on life, encouraging consideration of change Identifying enjoyable activities, understanding behaviours and feelings about exercise Understanding thoughts about exercise Discussing what movement and inactivity mean to the individual or family, and how they contribute to their lives Providing personalised information about the benefits of starting an exercise programme
Contemplatio	Increasing confidence in change and motivation	Raising awareness Re-evaluating the environment Emotional arousal	Identifying questions about exercise, continuing education on the health effects of not exercising and the health benefits of exercising Identifying barriers to regular exercise, offering solutions Identifying social support, determining enjoyable activities Planning to be active, identifying situations where there is indecision about exercising, raising awareness and emphasising, mentioning avoiding lifts and using fewer vehicles in daily life activities Setting aside time for exercise and encouraging implementation Encouraging reflection on how inactivity affects their lives Showing real events and people to illustrate how inactivity affects their lives
Preparation	Preparing an exercise plan	Self-reevaluation Coming to terms with oneself	Providing information about the benefits of physical activity and the personal risks of physical inactivity Supporting them in creating a new image for themselves, Motivating their belief in change, adapting Identifying alternatives for exercising and making plans, facilitating the involvement of other support systems Identifying areas where they can be successful and encouraging behavioural change for this purpose The physical and psychological benefits of regular exercise, discovering sports activities that interest them Setting goals, determining dates, drawing up a behaviour contract
Action	Reviewing the exercise initiation and implementation plan	Reinforcement Supportive relationships Stimulus control, Counterconditioning	Provide frequent positive reinforcement, Mobilise social support to participate in or support the process Always record exercise activities Praise success, review exercise benefits and the current programme Develop a plan to continue, maintain motivation Support confidence, identify social support
Maintenance	Reversal/ Finding a solution to prevent potential immobility	Stimulus control	Planning for triggers that could disrupt exercise, Joining support groups or finding friends who can support you while exercising Rewarding yourself meaningfully for completing regular exercise Reiterating the benefits, recommendations for staying healthy and avoiding injury Re-evaluate goals, examine success and failure, provide desired information and feedback Practise empathy and teach how to prevent relapse, Identify sources of social support

feasible and appropriate. Data from the pilot implementation were not included in the main analysis.

The educational sessions were delivered individually and face-to-face by the first author, who has formal training in motivational interviewing and clinical experience working with acute psychiatric patients. The counseling process was tailored to participants' needs, and a target date for behavior change was established. The program emphasizes the pivotal role of nurses in improving the physical health of individuals diagnosed with psychiatric disorders.

Control Group Application

Data were collected by administering all forms and scales through face-to-face interviews. A total of two interviews (over nine weeks) were conducted for approximately one hour, in the form of questions and answers about exercise and its benefits. No individualized exercise prescription, stage-matched counseling, behavioral rehearsal, goal-setting, or monitoring tools were provided.

Ethical Responsibilities

Ethical approval was granted by the Kocaeli University Ethics Committee (approval date: 10 March 2018; reference 2018/267), and all procedures adhered to the Declaration of Helsinki. With permission from the ethics committee, the necessary approval was obtained from the Kocaeli Governorship Provincial Health Directorate for conducting the research in the relevant institution (Approval Number: 08-01-2018, 34059705-799).

Participation in the study was voluntary. Participants received an explanation of the study objectives and provided both verbal and written informed consent. Throughout the study, participants in both groups were informed that additional time would be provided for procedures if needed. During the sessions, patient care staff (nurse, health officer, occupational therapist, social worker, psychologist) were identified to intervene in case of adverse situations (e.g., increased psychotic symptoms, pain, disability) that might occur during exercise.

Data Analyses

IBM SPSS Statistics v24.0 (IBM Corp., Armonk, NY, USA) was used for all data analyses. Descriptive statistics summarized participant characteristics. For normally distributed data, parametric tests were conducted. The independent samples t-test was used to compare two independent groups, and repeated measures tests were used to evaluate three or more dependent groups, with the Bonferroni correction applied for significant pairwise differences. For non-normally distributed data, the Mann–Whitney U test was used for independent group comparisons, whereas the Friedman test was used to assess within-group differences across three or more repeated measurements. Bonferroni correction was also applied for pairwise comparisons when significant differences were detected.

Results

The mean ages were 39.23±8.08 years for the intervention group and 43.57±7.39 years for the control group. Nearly all participants were middle-income and smokers. Alcohol and substance use were not reported in either group. Participants in both groups did not have regular health checkups, did not exercise regularly, and stated that their physical and mental health were at a moderate level. They reported that their perception of the effect of mental health on physical health was moderate (visual analogue scale between 0 and 10). The groups were similar across these characteristics (p>0.05) (Table 2).

Pre-intervention, both groups showed similar distributions in their exercise stage of change status (p>0.05). After the intervention, the distribution of stages differed significantly between the groups (χ^2=11.736, df=4, p=0.019). In the

Table 2. Profile of personal-health/illness-related characteristics and perceptions

Intervention group (n=31)			Control group (n=30)			Intervention group (n=31)			Control group (n=30)			Intervention group (n=31)		Control group (n=30)		
Individual characteristics						Characteristics of physical health						Characteristics of psychiatric illness				
	n	%	n	%	p		n	%	n	%	p		Mean±SD	Median (min-max)	Mean±SD	Median (min-max)	p
Gender						Regular health checkup											
Female	8	25.8	10	33.3	χ^2=0.132*	Yes	2	6,5	-	-		Disease duration	16.74±7.48	17.0 (3.0-35.0)	20.20±8.11	20.0 (5.0-40.0)	t=-1.732*** p=0.089
Male	23	74.2	20	66.7	p=0.716	No	29	93.5	30	100.0	p=0.492***						
Marital status						Regular exercise											
Married	3	9.7	4	13.3	χ^2=5.873*	Yes	4	12.9	2	6.7	p=0.671***	Level of perception of physical health	5.71±2.254	6.0***** (0.0-10.0)	4.55±2.429	6.0 (0.0-8.0)	Z=-0.682***** p=0.238
Single	28	90.3	26	83.7	p=0.053	No	27	87.1	28	93.3							
Educational background						Sports field close to home											
literate/non-literate	4	12.9	15	50.0	χ^2=9.955*	Yes	27	87.1	16	53.3	χ^2=6.811*	Level of perception of mental health	5.87±2.14	6.0***** (0.0-10.0)	5.37±2.13	6.0 (0.0-8.0)	Z=-0.876***** p=0.381
Primary education	20	64.5	12	40.0	p=0.007	No	4	12.9	14	46.7	p=0.009						
High school/above	7	22.6	3	10.0													
Economic situation												Family exercise regularly					
Income less than expenses	6	19,4	8	26.6	χ^2=0.513* p=0.774	Yes	5	16.1	7	23.3	χ^2=0.149* p=0.700	The level of perception of the effect of mental health on physical health	4.61±2.25	5.0***** (0.0-9.0)	5.57±2.18	5,0 (1.0-10.0)	Z=-1.013***** p=0.311
Income equals expense	20	64.5	17	56.7		No	26	83.9	23	76.7							
ncome equals expense	5	16,1	5	16.7													

*: χ^2: Pearson ki kare; **: continuity fix; ***p: Fisher Exact test; ****t: "Independent Sample-t" test p<0.05; *****: Z: Mann-Whitney U test ******: 0-10 VAS (Visual Analog Scala)

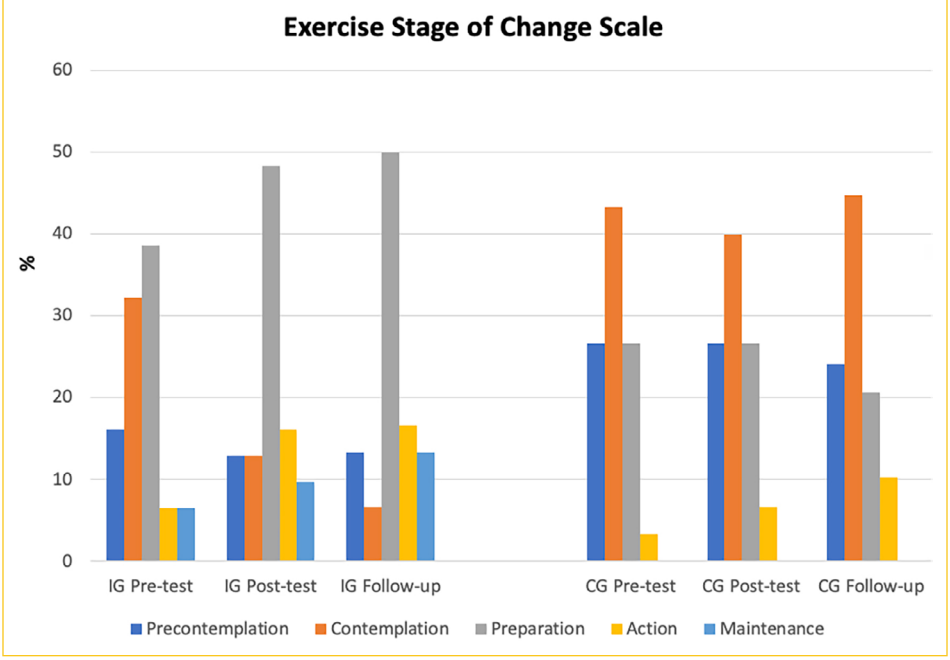

Figure 2. Exercise stage of change scale- intergroup comparison (n=61).

intervention group, more participants progressed through the preparation, action, and maintenance stages at both the posttest and follow-up (Fig. 2). These findings are consistent with Hypothesis H1.

Table 3 shows significant between-group differences in the Exercise Processes of Change Scale (EPCS) in consciousness raising (cognitive processes) and counterconditioning (behavioral processes) at all three time points (baseline, post-intervention, and follow-up; all $p<0.05$), with consistently higher scores in the intervention group. Notably, these group differences were sustained over time.

At baseline, the groups did not differ in the remaining EPCS subscales—dramatic relief, environmental reevaluation, self-reevaluation, social liberation, helping relationships, contingency management, self-liberation, and stimulus control (all $p>0.05$). However, at both post-intervention and follow-up assessments, the intervention group scored significantly higher than the control group across each of these domains (all $p<0.05$).

Within-group analyses indicated that, in the intervention group, post-intervention and follow-up scores were significantly higher than baseline for consciousness raising, dramatic relief, self-reevaluation, social liberation, helping relationships, contingency management, self-liberation, and stimulus control. Environmental reevaluation increased significantly from baseline to post-intervention and remained higher at follow-up, while counterconditioning also showed significant improvements over time (Table 3). In the control group, no meaningful within-group change was observed, with the exception of helping relationships, which increased at follow-up compared with baseline. Overall, these results support Hypothesis H2.

At baseline, total Exercise Self-Efficacy Scale (ESES) scores were comparable between the intervention and control groups ($p>0.05$). In contrast, at both post-intervention and follow-up, the intervention group exhibited significantly higher ESES scores than the control group (both $p<0.05$; Table 4).

For the Exercise Decisional Balance Scale (EDBS), statistically significant between-group differences were observed for both Pros and Cons at all assessment points (baseline, post-intervention, and follow-up; all $p<0.05$). Although the intervention group had lower Pros scores at baseline than the control group, it surpassed the control group at post-intervention and follow-up, while maintaining consistently lower Cons scores across all measurements (Table 4).

Within-group analyses showed no significant change over time in ESES scores in the control group (all $p>0.05$). However, the control group demonstrated significant temporal changes in EDBS Pros and Cons (both $p<0.05$): Pros scores were lower at follow-up than at baseline, and Cons scores at baseline and follow-up were higher than those at posttest (Table 4). In the intervention group, ESES and both EDBS subscales changed significantly over time (all $p<0.05$): posttest and follow-up ESES and EDBS Pros scores increased relative to baseline, whereas posttest EDBS Cons scores decreased compared with baseline ($p<0.01$). Collectively, these results support Hypothesis H2.

Discussion

The increased risk of physical health problems in individuals diagnosed with psychiatric disorders is a problem that cannot be solved by information alone; it requires structured ap-

Table 3. EPCS- cognitive and behavioral processes comparison of subgroup scores-intergroup and ingroup (n=61)

EPCS-Cognitive processes	Intervention Group (n=31)	Control Group (n=30)		EPCS-Behavioral Processes	Intervention Group (n=31)	Control Group (n=30)	
	Values	Values	p		Values	Values	p
Consciousness raising				Counterconditioning			
Pre-test (1)	8,16±2,84	6,80±2,33	Z=-2,014 p=0,044	Pre-test (1)	7,65±2,82	6,03±1,69	Z=-2,284 p=0,022
Post-test (2)	10,00±2,46	7,97±2,59	Z=-3,037 p=0,002	Post-test (2)	9,10±2,69	6,30±2,00	Z=-3,983 p=0,000
Follow-up test (3)	10,03±2,94	7,62±2,19	t=3,561 p=0,001	Follow-up test (3)	8,83±2,45	6,31±1,97	Z=-3,776 p=0,000
p	F=15,839 p=0,000[1-2,3]	χ2=5,442 p=0,066		P valuıe	χ^2=9,976 p=0,007[1-2]	χ2=1,012 p=0,603	
Dramatic relief				Helping relationships			
Pre-test (1)	9,03±2,89	9,10±2,83	t=-0,092 p=0,927	Pre-test (1)	7,90±3,11	6,40±2,67	Z=-1,957 p=0,051
Post-test (2)	11,71±3,24	8,67±2,52	Z=-3,829 p=0,000	Post-test (2)	9,90±3,07	6,83±2,70	Z=-3,934 p=0,000
Follow-up test (3)	11,37±3,24	7,93±2,02	Z=-4,509 p=0,000	Follow-up test (3)	9,67±2,97	7,55±2,72	t=-2,715 p=0,007
p	χ^2=32,019 p=0,000 [1-2,3]	χ^2=5,570 p=0,062		p	F=11,584 p=0,000 [1-2,3]	χ^2=8,458 p=0,015 [1-3]	
Environmental reevaluation				Contingency management			
Pre-test (1)	9,81±2,96	8,93±2,94	t=1,156 p=0,252	Pre-test (1)	7,55±3,00	6,87±2,15	Z=-0,642 p=0,521
Post-test (2)	11,52±3,21	7,93±2,61	Z=-4,157 p=0,000	Post-test (2)	10,61±3,15	6,93±2,32	Z=-4,264 p=0,000
Follow-up test (3)	10,90±3,47	8,90±2,98	t=2,376 p=0,021	Follow-up test (3)	10,97±3,64	7,59±2,78	Z=-3,655 p=0,000
p	χ^2=13,767 p=0,001[1-2]	F=2,301 p=0,110		p	χ^2=24,718 p=0,000 [1-2,3]	χ^2=1,838 p=0,399	
Self-reevaluation				Self-liberation			
Pre-test (1)	9,32±3,05	9,03±2,54	t=0,402 p=0,689	Pre-test (1)	8,26±3,14	8,07±2,55	Z=-0,168 p=0,867
Post-test (2)	11,32±3,16	8,40±2,47	Z=-3,895 p=0,000	Post-test (2)	11,51±3,59	7,57±2,7	Z=-4,193 p=0,000
Follow-up test (3)	11,17±3,06	8,66±2,65	Z=-3,445 p=0,001	Follow-up test (3)	11,07±3,42	7,07±2,58	Z=-4,324 p=0,000
p	χ^2=23,096 p=0,000[1-2,3]	F=0,973 p=0,384		p	χ^2=28,500 p=0,000[1-2,3]	χ^2=3,780 p=0,151	
Social liberation				Stimulus control			
Pre-test (1)	7,77±2,73	6,73±1,91	Z=-1,577 p=0,115	Pre-test (1)	7,52±3,09	6,33±1,92	Z=-1,314 p=0,189
Post-test (2)	9,84±2,65	6,90±1,71	Z=-4,303 p=0,000	Post-test (2)	9,90±2,91	6,73±2,65	Z=-3,867 p=0,000
Follow-up test (3)	9,23±2,27	7,38±2,01	Z=-3,394 p=0,001	Follow-up test (3)	10,00±2,75	6,86±2,28	Z=-4,196 p=0,000
p	χ^2=17,896 p=0,000[1-2,3]	χ^2=2,020 p=0,364		p	χ^2=26,640 p=0,000[1-2,3]	χ^2=2,022 p=0,364	

* t: Independent Sample-t test ; **Z: Mann-Whitney ; *** χ^2: Friedman; ****: F.Repeated Measure. EPCS: Exercise processes of change scale

proaches that support sustainable behavioral change. Therefore, demonstrating the effect of theory-based counseling interventions provided by nurses on exercise behavior is important for clinical practice. In this context, this experimental study aimed to examine the effect of psychiatric nurses' counseling role on improving exercise behavior in individuals diag-

Table 4. Comparison of 'exercise self-efficacy scale' scores and 'exercise decisional balance scale'-pros and cons subgroup scores-ıntergroup and ıngroup (n=61)

Scales	Pre-test (1)			Post-test (2)			Follow-up test (3)			
	Intervention group (n=31)	Control Group (n=30)	p	Intervention group (n=31)	Control group (n=30)	p	Intervention Group (n=31)	Control group (n=30)	p	p
ESES	6.97±2.21	7.00±2.27	Z=-0.177 p=0.859	11.42±3.66	8.07±3.40	Z=-3.594 p=0.000	10.87±21.91	6.83±2.54	Z=-3.748 p=0.000	χ^2=35.188 p=0.000[a] (1-2.3) χ^2=2.966 p=0.227
Pros (EDBS)	23.97±7.64	28.20±6.68	Z=-2.327 p=0.020	30.81±6.43	25.13±7.27	Z=-3.346 p=0.001	29.07±6.46	24.86±6.71	Z=-2.801 p=0.005	χ^2=39.056 p=0.000[a] (1-2.3) χ^2=10.954 p=0.004[b] (1-3)
Cons (EDBS)	15.16±6.21	17.50±3.25	Z=-2.211 p=0.027	12.61±5.01	15.73±4.74	Z=-2.696 p=0.007	13.07±3.89	17.66±2.09	Z=-5.030 p=0.000	χ^2=9.189 p=0.010[a] (1-2) χ^2=7.505 p=0.023[b] (2-1.3)

Z:Mann-Whitney U; χ^2: Friedman; F.Repeated Measure; [a]: Intervention group-within-group comparisons; b: Control group-within-group comparisons. ESES: Exercise self-efficacy scale: EDBS: Exercise decisional balance scale.

nosed with psychiatric disorders through the TTM framework. This approach contributes significantly to the literature.

Counseling effectiveness studies on TTM-based comprehensive exercise have often been conducted for other medical conditions (diabetes, heart diseases, chronic pain, obesity, etc.). Kaplan Serin and Citlik Saritas[14] found that three-quarters (75%) of individuals with type 2 diabetes advanced in stage following a TTM-informed exercise counseling program. Likewise, Wen et al.[30] noted higher proportions of ostomy patients in the intervention arm reaching the action or maintenance stages compared with controls.

Consistent with evidence from non-psychiatric samples, this study found that participants in the intervention group progressed to more advanced stages of change both immediately after the intervention and at the follow-up assessment. This between-group difference may be attributable to TTM-based nursing counseling. The observed stage advancement was supported by the individualized implementation of TTM principles, whereby stage-specific goals were set and stage-matched strategies (e.g., consciousness raising, self-reevaluation, counter-conditioning, and reinforcement management) were applied to facilitate change and sustain motivation.

Similarly, Karlsson and Danielsson[31] highlighted that setting a goal during exercise enhances its perceived meaning, noting that striving toward a goal makes the activity more purposeful. Achieving goals creates a sense of pride in patients and encourages them to explore their goals, providing a personalized response rather than general advice about physical activity or exercise. They note that an exercise plan design could be more effective.[31]

Researchers have examined which theoretical determinants are most strongly associated with physical activity among individuals diagnosed with schizophrenia. Consistent with our findings, numerous studies indicate that TTM-based motivational interviewing effectively facilitates exercise engagement and progression across the stages of change.[14,15,26,31] A period of at least six months is generally recommended for a new lifestyle behavior to become sufficiently integrated, after which the emphasis can shift toward sustaining the habit.[31,32] The importance of long-term intervention, follow-up, and regular monitoring should be considered in our study.

Concurrently, more patients progressed into the preparation, action, and maintenance stages. While TTM-based intervention research in psychiatric cohorts remains limited, findings from other clinical groups indicate that individuals situated in higher stages (precontemplation → maintenance continuum) typically display elevated self-efficacy scores.[19,20] In this context, rising self-efficacy is considered an expected precursor and facilitator of action.

The absence of an increase in posttest and follow-up "consciousness raising" scores (EPCS) in the intervention group suggests that healthier alternative behaviors were not sufficiently substituted for unhealthy behaviors. Our study focused solely on exercise. In studies addressing broader

health behaviors, such as healthy nutrition and smoking cessation programs, the EPCS "consciousness raising" test score may also increase.

Moreover, the control group's EDBS Pros score decreased from the pretest to the follow-up (Table 3), indicating that the determination to maintain exercise among individuals diagnosed with psychiatric disorders may decrease over time, possibly due to the 8-month gap between the pretest and follow-up assessments. To prevent this decline, shorter supportive contacts or follow-up calls are recommended. One of the most significant obstacles to the long-term adoption of positive lifestyle behaviors is the inability to sustain initial motivation. In their study of 43 overweight patients with severe psychiatric disorders, Romain et al.[15] found that the perceived benefits of physical activity were higher among physically active participants compared with those who were inactive.

Studies indicate that utilizing motivational resources makes it easier for psychiatric patients to maintain a high level of physical activity and adapt to an exercise program.[19,29] In our study, the high follow-up score on the EPCS "self-liberation" subscale in the intervention group indicates that participants strengthened their motivational commitment to sustaining exercise behavior (Table 3). This intervention is potentially feasible for routine CMHC practice because it relies on brief, structured, stage-matched counseling delivered by psychiatric nurses and supported by low-cost materials (stage-specific brochures and an individualized goal/monitoring chart).

The EDBS subscale scores differed between the groups from the outset (Table 4). For the intervention to be effective, it is crucial to observe that participants' EDBS Pros levels and ESES scores increased after the intervention. In contrast, the control group exhibited higher levels of perceived benefits of exercise, which persisted during the follow-up period. Similar to our study, Gorczynski and Faulkner[33] conducted a descriptive study using the TTM with 54 patients aged 18–70 years who had severe psychiatric disorders. They found that the EDBS Pros scores for physical activity increased significantly as patients progressed toward the action and maintenance stages.

This study differs from others in that the structured counseling conducted by a psychiatric nurse is adapted to the stages of the TTM (stage-matched), providing a framework that is applicable in the CMHC context, individualized, and includes follow-up. It targets not only exercise recommendations but also TTM components such as self-efficacy, decisional balance, and processes of change. Future pragmatic studies should test simplified delivery models (group-based sessions, hybrid follow-up) and incorporate objective activity measures (accelerometry/pedometer) to support scalability and reduce self-report bias.

Limitations

This study is subject to several limitations. Participant awareness of the intervention focus may have introduced reactivity (Hawthorne effect) or social desirability bias. The pre-intervention administration of the assessment scales may have produced measurement reactivity (testing effects), potentially inflating or suppressing subsequent changes. Additionally, unmeasured temporal shifts in psychological status, physical health, or concurrent medical treatments could have acted as uncontrolled confounders. Furthermore, the control and intervention groups were registered at the same CMHC, and discussions with the control group about exercise and its benefits were conducted twice (over eight weeks), which may have increased participants' awareness. The feasibility of exercise, the length of the scales, the administration of all scales on the same day, and the possibility of participants providing socially desirable responses were also considered. Finally, exercise outcomes were assessed using self-reported instruments rather than objective measures. Therefore, this may have led to misclassification of exercise behavior and over- or underestimation of change.

A key limitation is the absence of prospective trial registration, which may reduce transparency and limit comparison with other registered trials.

Conclusion and Recommendations

This study aimed to determine the effect of the counseling role of psychiatric nurses on the development of the physical health status of individuals diagnosed with psychiatric disorders through the TTM. The results from the pretest, posttest, control groups, and repeated-measures design showed that the counseling provided by psychiatric nurses through the TTM was effective in improving participants' exercise behavior. After the counseling program, the positive feelings and thoughts of the participants about the intervention, their desire to continue the program, and the increase in their daily physical activity provide further subjective evidence of the effectiveness of the intervention.

Community Mental Health Centers (CMHCs)—regular points of follow-up and rehabilitation for individuals diagnosed with psychiatric disorders—play a pivotal role in safeguarding and promoting patients' physical health. Systematic identification of patients at CMHCs who either exhibit physical health risk or suboptimal activity levels is essential, followed by the implementation of structured, stage-appropriate interventions to encourage sustained physical activity. Given the central role of exercise in mitigating cardiometabolic risk and improving overall quality of life among individuals diagnosed with psychiatric disorders, our TTM-based intervention—incorporating individualized education and follow-up—demonstrated

that exercise routines are modifiable through a theoretically grounded, nurse-delivered framework. The feasibility observed in the Turkish context suggests potential for broader adoption both nationally and internationally, including extension to populations with other chronic medical conditions. To enable consistent translation into routine practice, the development of pragmatic nursing guidelines (covering readiness assessment, stage-matched strategies, motivational reinforcement, and follow-up scheduling) is warranted.

Ethics Committee Approval: The study was approved by the Kocaeli University Ethics Committee (no: 2018/267, date: 10/03/2018).

Informed Consent: The participants provided informed consent both verbally and in writing.

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References

1. Asad Cabrera I, Borrueco Sánchez J, López Sánchez C, López Moral A, Munguía-izquierdo D, Bueno Antequera J. Behavioral change techniques to increase adherence to physical activity in severe mental disorders: The psychiactive project. In: Combining Exercise and Psychotherapy to Treat Mental Health. 2024. p.239–64.
2. Ashdown Franks G, DeJonge M, Arbour-Nicitopoulos KP, Sabiston CM. Exploring the feasibility and acceptability of a physical activity programme for individuals with serious mental illness: A case study. Qual Res Sport Exerc Health 2022;14:933–55.
3. Calder RV, Dunbar JA, de Courten MP. The Being Equally Well national policy roadmap: providing better physical health care and supporting longer lives for people living with serious mental illness. Med J Aust 2022;217(Suppl 7):S3–6.
4. Diamond R, Waite F, Boylan AM, Hicks A, Kabir T, Freeman D. Framework for understanding movement and physical activity in patients diagnosed with psychosis. BMJ Ment Health 2024;27:e300878.
5. Edmondson AJ, Borthwick R, Hughes E, Lucock M. Using photovoice to understand and improve healthy lifestyles of people diagnosed with serious mental illness. J Psychiatr Ment Health Nurs 2022;29:676–87.
6. Lin SP, Liu CY, Yang CY. Relationship between lifestyles that promote health and quality of life in patients with chronic schizophrenia: a cross-sectional study. J Nurs Res 2018;26:207–15.
7. Bailey R, Bartlett YK, Hassan L, Armitage CJ, Stockton-Powdrell C, Machin M, et al. Acceptability of reducing sedentariness using a mobile-phone application based on 'if then' plans for people with psychosis: A focus-group study conducted in North West England, UK. Int J Soc Psychiatry 2022;68:1100–7.
8. Tzeng WC, Feng HP. Dietary management in individuals with serious mental illness and comorbid diabetes: a focused ethnography study. J Nurs Res 2023;31:e292.
9. Valencia Carlo YE, Saracco-Alvarez RA, Valencia Carlo VA, Vázquez Vega D, Natera Rey G, Escamilla Orozco RI. Adverse effects of antipsychotics on sleep in patients with schizophrenia. Systematic review and meta-analysis. Front Psychiatry 2023;14:1189768.
10. Bredin SSD, Kaufman KL, Chow MI, Lang DJ, Wu N, Kim DD, et al. Effects of aerobic, resistance, and combined exercise training on psychiatric symptom severity and related health measures in adults living with schizophrenia: a systematic review and meta-analysis. Front Cardiovasc Med 2022;8:753117.
11. World Health Organization. Global action plan on physical activity 2018-2030: more active people for a healthier world. 2018. Available at: https://apps.who.int/iris/bitstream/handle/10665/272722/9789241514187-eng.pdf. Accessed Mar 26, 2026.
12. Prochaska JO, Di Clemente CC. Transtheoretical therapy: Toward a more integrative model of change. Psychotherapy 1982;19:276–88.
13. Pogrebnoy D, Dennett AM, Simpson DB, MacDonald-Wicks L, Patterson AJ, English C. Effects of using websites on physical activity and diet quality for adults living with chronic health conditions: systematic review and meta-analysis. J Med Internet Res 2023;25:e49357.
14. Kaplan Serin E, Citlik Saritas S. The effect of the transtheoretical model based walking exercise training and follow-up on improving exercise behavior and metabolic control in patients with type 2 diabetes. Clin Nurs Res 2021;30:273–84.
15. Romain AJ, Abdel-Baki A. Using the transtheoretical model to predict physical activity level of overweight adults with serious mental illness. Psychiatry Res 2017;258:476–80.
16. Anastopoulou K, Fradelos EC, Misouridou E, Kourakos M, Berk A, Papathanasiou IV, et al. Moderating nutritious habits in psychiatric patients using transtheoretical model of change and counseling. Adv Exp Med Biol 2017;988:63–71.
17. Kocoglu-Tanyer D, Arslan S, Gedik-Bakkal SDK. Determinants of physical activity level of people living in rural areas according to the transtheoretical model: regression and path analysis. Rural Remote Health 2021;21:5419.

18. Ercan S, Oğul A, Arslan E, Koçer M, Başkurt F, Çetin C. Evaluating the attitudes of individuals with a history of cancer towards exercise using the transtheoretical model. Turk J Sports Med 2021;56:106–12. [Article in Turkish]
19. Baysal HY, Hacialioglu N. The effect of transtheoretical model-based education and follow-up on providing overweight women with exercise behavior. Int J Caring Sci 2017;10:383–92.
20. Mansuroğlu S, Kutlu FY. The Transtheoretical Model based psychoeducation's effect on healthy lifestyle behaviours in schizophrenia: A randomized controlled trial. Arch Psychiatr Nurs 2022;41:51–61.
21. Fırıncık S, Arslan N, Başkaya E, Demir N, Acar MN. The effect of physical exercise and nutrition education on healthy lifestyle behaviors and psychological well-being levels of patients diagnosed with schizophrenia. Arch Psychiatr Nurs 2025;58:151959.
22. Chang YH, Shun SC, Chen MH, Chang YF. Feasibility of different exercise modalities for community-dwelling residents with physical inactivity: a randomized controlled trial. J Nurs Res 2023;31:e301.
23. McGregor S, Roberts S, Grant SL, O'Loghlen E. Weight-normative versus weight-inclusive narratives in weight-related public health campaigns: Effects on anti-fat attitudes, stigma, motivation, and self-efficacy. Obesities 2022;2:76–93.
24. Yang Y, Chen P, Jiao C. Influence of nursing intervention based on risk assessment model on self-efficacy and postoperative rehabilitation of surgical patients. J Healthc Eng 2022;6750320.
25. Padilla-López J, Salinas-Rodríguez A, Prado-Aguilar CA, Astudillo-García CI, Torres-Duque L, Moran S, et al. Psychosocial factors associated with exercise engagement in adult users of primary healthcare services. Health Psychol Behav Med 2025;13:2542194.
26. Gümüş Y, Kitiş Y. The validity and reliability of exercise behavior change scales. J Hacettepe Univ Fac Nurs 2015;1:1–19. [Article in Turkish]
27. Ay T, Temel AB. Adaptation of the Transtheoretical Model-based exercise behavior change model scales on Turkish adults: Validity and reliability study. Izmir Univ Med J 2015;1:29–45. [Article in Turkish]
28. Romain AJ, Longpré-Poirier C, Tannous M, Abdel-Baki A. Physical activity for patients with severe mental illness: Preferences, barriers, and perceptions of counselling. Sci Sport 2020;35:289–99.
29. Çelik Ince S, Partlak Günüşen N, Serçe Ö. Perception of physical health by patients with severe mental illness and their family caregivers: A qualitative study. Perspect Psychiatr Care 2019;55:718–27.
30. Wen SL, Li J, Wang AN, Lv MM, Li HY, Lu YF, et al. Effects of transtheoretical model-based intervention on the self-management of patients with an ostomy: A randomised controlled trial. J Clin Nurs 2019;28:1936–51.
31. Karlsson V, Danielsson L. Motivators for patients with schizophrenia spectrum disorders to start and maintain exercising: a qualitative interview study. Eur J Physiother 2022;24:30–8.
32. Arbour-Nicitopoulos KP, Duncan MJ, Remington G, Cairney J, Faulkner GE. The utility of the health action process approach model for predicting physical activity intentions and behavior in schizophrenia. Front Psychiatry 2017;8:135.
33. Gorczynski P, Faulkner G. Exercise therapy for schizophrenia. Cochrane Database Syst Rev 2010;2010:CD004412.

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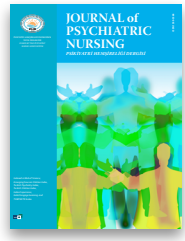

Original Article

Technology addiction in the modern age: Depression, anxiety, and stress among nursing students

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Abstract

Objectives: This study aimed to examine the levels of technology addiction, depression, anxiety, and stress among nursing students in relation to certain variables.

Methods: This analytical cross-sectional study included 251 nursing students. Data were collected using the Personal Data Form, the Technology Addiction Scale (TAS), and the Depression, Anxiety, and Stress Scale (DASS).

Results: The average daily internet usage time of the students was 3.24±0.8 hours. The most common reason for connecting to the internet was to use social media applications (91.6%). The mean TAS score of the students was 49.07±13.96, the mean DASS score for depression was 14.17±4.99, for anxiety was 12.92±3.95, and for stress was 14.73±5.01. Male students' use of online games and websites was higher than female students (p=0.017, t=5.776). First-year students had significantly higher mean scores on the TAS (p=0.001, F=5.494) and the stress scale (p=0.001, t=8.755) compared to other grades.

Conclusion: Based on these findings, it is recommended that universities implement preventive and educational programs to enhance mental health and reduce technology addiction.

Keywords: Anxiety; depression; nursing students; stress; technology addiction

Addiction is defined as the continued use of a substance or engagement in a behavior despite its psychological, physical, or social harms, the inability to quit despite the desire to do so, and difficulty controlling the urge to engage in the behavior.[1] Although technology-related addictions are not yet fully recognized as formal diagnostic categories in the DSM-5, the manual emphasizes the need for further research in this area.[2] Concepts such as internet addiction, social media addiction, and smartphone addiction are frequently discussed within the broader framework of technology addiction and continue to attract growing scientific attention.[3]

Rapid technological advancements have profoundly influenced many professional fields, including healthcare. In nursing practice, the use of digital systems for documentation, patient education, communication, and simulation-based training has become an integral component of care delivery and education.[4–6] Consequently, nursing students are required to engage extensively with technological devices throughout both their academic and clinical training.

Today, nursing education is shaped not only by intensive academic workload and demanding clinical experiences but also by the pervasive presence of digital technologies.[7,8] While technology facilitates access to information and enhances learning opportunities, excessive or uncontrolled use may lead to problematic patterns. Technology addiction has increasingly been reported among university students, including nursing students.[9,10] Excessive engagement with technological devices and digital platforms may reduce study time, impair academic performance, and negatively influence psychological health.[11]

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Previous studies have identified several individual and family-related risk factors associated with problematic technology use, including male gender, living alone, weak family relationships, perceived lack of familial support, low socioeconomic status, insecure attachment patterns, and increased time spent online.[12–14] Furthermore, problematic technology use has been associated with higher levels of depression, anxiety, and stress in university populations.

Given the demanding and emotionally intensive nature of nursing education, the coexistence of technology addiction and psychological distress may pose additional risks for students' mental health. However, studies specifically examining the relationship between technology addiction and depression, anxiety, and stress among nursing students remain limited. Therefore, investigating these relationships is essential to better understand the psychological implications of technology addiction in this population and to inform preventive and supportive interventions within nursing education.

Problematic technology use among nursing students may negatively affect psychological functioning and adaptive capacities. A cross-sectional study reported that higher levels of technology addiction were associated with lower life satisfaction and reduced psychological flexibility in nursing students, suggesting potential vulnerability in coping with academic and clinical stressors Aslan et al.[15]. In addition, an intervention study demonstrated that training on technology addiction significantly improved students' perspectives and reduced addiction levels, indicating that technology addiction is both prevalent and modifiable in this population. These findings underscore the importance of examining the relationship between technology addiction and depression, anxiety, and stress among nursing students. Given that nursing education requires effective emotional regulation, clinical judgment, and adaptive coping in stressful environments, technology addiction may indirectly compromise students' academic engagement and professional development.

Accordingly, the present study aimed to examine technology addiction and levels of depression, anxiety, and stress among nursing students and to investigate the relationships between these variables.

The study sought to answer the following research questions:

1. What are the technology addiction levels and depression, anxiety, and stress among nursing students?
2. What are the variables affecting technology addiction levels?
3. What are the variables affecting depression, anxiety, and stress levels?
4. Is there a relationship between technology addiction and depression, anxiety, and stress levels?

What is presently known on this subject?

- Excessive technology use has been associated with increased levels of depression, anxiety, and stress, and university students are considered a particularly vulnerable group.

What does this article add to the existing knowledge?

- This study contributes by examining technology addiction and mental health indicators specifically among nursing students, highlighting the influence of gender and year of study on these relationships.

What are the implications for practice?

- The findings provide evidence to support the development of preventive and educational programs in universities to reduce technology addiction and promote students' mental health.

Materials and Method

Aim and Type of the Study

This cross-sectional analytical study aimed to examine the levels of technology addiction, depression, anxiety, and stress among nursing students in relation to personal and academic variables.

Population and Sample of the Study

The study population consisted of 480 nursing students enrolled in the Faculty of Health Sciences at a state university during the 2024–2025 academic year. The minimum required sample size was calculated as 214 students using G*Power with a 95% confidence level and a 5% margin of error. The study aimed to reach the entire population, and all students were invited to participate. A total of 251 students participated in the study. Data were collected between January and February 2025.

Data Collection Tools

The data were collected using questions on participants' descriptive characteristics (such as age, gender, year of study, place of internet access, purpose, device used, and daily internet usage time), the Technology Addiction Scale, and the Depression, Anxiety, and Stress Scale.

- Technology Addiction Scale (TAS): It was developed based on Young's Internet Addiction Test criteria and Griffiths' (2005) six-component model of addiction. The Turkish validity and reliability analysis of the scale was conducted by Aydın, and the scale consists of 24 items and 4 dimensions. The sub-dimensions of the scale are using social networking, instant messaging, playing online games, and using websites. The total score of the Technology Addiction Scale ranges from a minimum of 24 to a maximum of 120. The interpretation of the overall scale scores is as follows: 0–24 points indicate "Not addicted," 25–48 points "Low-level addicted," 49–72 points "Moderately addicted," 73–96 points "Highly addicted," and 97–120 points "Fully addicted." The Cronbach's alpha values of the scale are 0.79, 0.81, 0.90, and 0.86, respectively.[16] In this study, the Cronbach's alpha values of the scale were 0.72, 0.78, 0.89, and 0.87, respectively.

Table 1. Students' TAS and DASS-21 values

Characteristics	Mean±SD	Min-Max
TAS Total	49.07±13.96	25-82
TAS Sub-Dimensions		
Social Networking	13.43±4.57	6-26
İnstant Messaging	12.50±5.04	6-30
Online Gaming	9.46±5.05	6-26
Website Usage	13.66±6.03	6-30
DASS-21 Sub-Dimensions		
Depression	14.17±4.99	7-28
Anxiety	12.92±3.95	7-25
Stress	14.47±4.37	8-27

TAS: Technology Addiction Scale, DASS: Depression, Anxiety, Stress Scale, SD: Standard deviation.

- Depression, Anxiety, Stress Scale (DASS-21): The Turkish reliability and validity study of the scale developed by Lovibond and Lovibond was conducted by Yılmaz, Boz, and Arslan in 2017.[17] The DASS-21 has three sub-dimensions: depression, anxiety, and stress; each dimension has seven questions. The scale is a 4-point Likert-type scale. Items 3, 5, 10, 13, 16, 17, and 21 measure depression; items 2, 4, 7, 9, 15, 19, and 20 measure anxiety; and items 1, 6, 8, 11, 12, 14, and 18 measure stress. The total score for each subscale ranges from a minimum of 0 to a maximum of 21. The normal value range is 0-9 points for depression, 0-7 points for anxiety, and 0-14 points for stress. Mild depression score is 10-13, anxiety score is 8-9, stress score is 15-18; moderate depression score is 14-20, anxiety score is 10-14, stress score is 15-18; severe depression score is 21-27, anxiety score is 15-19, stress score is 26-33; very severe depression score is 28 and above, anxiety score is 20 and above, stress score is 34 and above. The Cronbach's alpha coefficients of the Turkish version of the scale are 0.82 for depression, 0.81 for anxiety, and 0.76 for stress. The internal consistency reliabilities are 0.90 for depression, 0.86 for anxiety, and 0.88 for stress. For this study, the Cronbach's alpha coefficients are 0.86 for depression, 0.72 for anxiety, and 0.62 for stress.

Ethical Aspects of the Study

Ethical approval for this study was obtained from the Ethics Committee of the Graduate Education Institute at Çanakkale Onsekiz Mart University (Approval No: 2024-YÖNP-5475; Date: 09 January 2025). Written permission to conduct the study was obtained from the Department of Nursing, Faculty of Health Sciences, Çanakkale Onsekiz Mart University. All participants were informed about the purpose of the study and the data collection tools, and written informed consent was obtained from those who agreed to participate. The study was conducted in accordance with the Declaration of Helsinki.

Limitations of the Study

The cross-sectional design prevents causal interpretation of the findings. Data were collected through self-report measures, which may be subject to response bias. Additionally, the study was conducted at a single institution, which may limit the generalizability of the results to other student populations.

Data Analysis Method

The data obtained in this study were analyzed using SPSS 23 software. Skewness and kurtosis values, along with the Kolmogorov-Smirnov test, were used to determine the normality of the data distribution. Descriptive statistics, independent samples t-test for paired groups, one-way ANOVA for groups of three or more, and Pearson correlation analysis were used to examine the relationships between variables. The statistical significance limit value was accepted as $p<0.05$.

Results

The mean age of the participants was 20.74 years; most were female (84.1%) and had a GPA between 2.00 and 2.99. Overall, students demonstrated moderate levels of technology addiction, depression, and anxiety, while stress levels were within normal limits (Table 1).

Gender, grade level, GPA, and internet-use characteristics were significantly associated with specific subdimensions of technology addiction. Male students reported higher levels of online game playing, whereas female students scored higher on website usage. First-year students demonstrated higher website use, while second-year students showed higher social networking levels. In addition, instant messaging differed significantly according to GPA (Table 2).

Daily internet use duration and place of internet access were also significantly associated with several technology addiction subdimensions. Students accessing the internet primarily at the faculty had higher instant messaging scores, whereas those connecting from home or dormitories had higher social networking, online gaming, and website usage levels (Table 3).

When personal and academic variables were examined in relation to psychological outcomes, only grade level and GPA were significantly associated with depression. First-year students and those with lower GPAs reported higher depression levels (Table 4). Most students reported social media as their primary reason for internet use, with an average daily usage time of 2–4 hours and mobile devices being the most common access tool (Table 5).

Finally, correlation analysis revealed a significant positive relationship between technology addiction and both depression and stress, whereas no significant association was found with anxiety (Table 6).

Table 2. Comparison of TAS sub-dimensions' means based on students' personal and academic variables

		TAS Sub-Dimensions			
Variables		**Social Networking (Mean±SD)**	**Instant Messaging (Mean±SD)**	**Online gaming (Mean±SD)**	**Website Usage (Mean±SD)**
Gender	Female (n=211)	13.65±4.62	12.72±5.06	8.59±4.54	13.91±6.19
	Male (n=40)	12.27±4.18	11.32±4.80	14.07±5.15	12,37±5.03
	t	2.616	0.024	5.776	5.722
	p	0.107	0.877	0.017*	0.017*
Grade	First grade (n=74)	13.74±5.17	12.9±5.25	10.70±6.72	15.75±5.70
	Second grade (n=54)	14.81±3.51	12.72±4.26	9.27±4.96	14.68±5.51
	Third grade (n=70)	13.14±4.43	11.91±5.66	8.42±3.54	12.08±5.94
	Fourth grade (n=53)	12.0±4.49	12.47±4.66	9.30±3.72	11.79±6.11
	F	3.692	0.528	2.549	7.280
	p	0.013*	0.663	0.056	0.000*
GPA	1-1.99 (n=10)	13.70±5.65	8.9±2.18	10.40±2.50	15.90±7.06
	2-2.99 (n=185)	13.43±4.76	13.1±5.12	9.78±5.34	13.96±6.01
	3-4 (n=56)	13.41±3.74	10.96±4.57	8.23±4.19	12.26±5.75
	F	0.017	7.090	2.239	2.445
	p	0.983	0001*	0.109	0.089

*: p>0.05 significance level, t: Independent Groups T-Test, F: One-Way Analysis of Variance (ANOVA), n: number, SD: standard deviation.

Table 3. Comparison of TAS sub-dimensions' means based on variables related to students' internet usage

		TAS sub-dimensions			
Variables		**Social Networking (Mean±SD)**	**Instant Messaging (Mean±SD)**	**Online Gaming (Mean±SD)**	**Website Usage (Mean±SD)**
Internet Connection Purpose	Social Media (n=231)	13.37±4.50	12.54±4.98	9.45±5.04	13.69±6.06
	Non-Social Media (n=20)	14.15±5.48	12.00±5.83	9.60±5.35	13.35±5.84
	t	3.755	1.685	0.314	0.168
	p	0.054*	0.195	0.576	0.682
Daily Average Internet Usage Time	0-2 hours (n=51)	10.17±3.79	9.78±4.50	9.31±4.68	11.50±5.91
	2-4 hours (n=123)	13.24±3.94	12.62±4.41	9.33±4.83	13.22±5.80
	4-6 hours (n=61)	15.60±4.64	14.21±6.12	10.62±6.06	15.85±5.77
	6 hours and above (n=16)	17.06±4.32	13.75±3.04	6.56±1.03	6.56±1.64
	F	20.481	8.291	2.935	5.905
	p	0.000*	0.000*	0.034*	0.001*
Internet Connection Location	Home or dormitory (n=58)	14.41±5.05	13.44±5.31	10.24±5.21	16.60±6.10
	Faculty (n=10)	13.50±6.73	15.30±7.48	9.30±5.47	13.60±7.19
	Mobile (n=183)	13.12±4.26	12.05±4.73	9.22±4.98	12.73±5.67
	F	1.754	3.339	0.887	9.652
	p	0.175	0.037	0.413	0.000

*: p>0.05 significance level, t: Independent Groups T-Test, F: One-Way Analysis of Variance (ANOVA), n: number, SD: standard deviation.

Discussion

Although the present study primarily examined technology addiction in relation to students' daily digital behaviors, these findings should be interpreted within the broader context of nursing education. Nursing education increasingly integrates digital learning platforms, simulation technologies, and online resources. Therefore, students' patterns of technology use in their private lives may indirectly influence their academic engagement, concentration, and professional development. From this perspective, technology addiction is not merely a

Table 4. Comparison of DASS-21 sub-dimensions' means based on students' personal and academic variables

		DASS-21 sub-dimensions		
Variables		**Depression (Mean±SD)**	**Anxiety (Mean±SD)**	**Stress (Mean±SD)**
Gender	Female (n=211)	13.89±4.79	12.89±3.90	14.79±5.17
	Male (n=40)	15.67±5.77	13.12±4.24	14.45±4.11
	t	1.822	0.093	0.437
	p	0.178	0.760	0.509
Grade	First grade (n=74)	16.54±5.11	13.62±4.75	15.66±4.45
	Second grade (n=54)	13.20±4.78	11.88±3.30	15.27±6.47
	Third grade (n=70)	12.88±4.53	13.12±3.53	13.84±4.83
	Fourth grade (n=53)	13.58±4.58	12.75±3.69	14.07±4.03
	F	8.755	2.127	2.124
	p	0.000*	0.097	0.098
GPA	1-1.99 (n=10)	15.20±3.42	13.80±2.09	16.40±4.85
	2-2.99 (n=185)	14.94±5.16	13.11±4.26	14.83±5.40
	3-4 (n=56)	11.48±3.57	12.14±2.93	14.10±3.45
	F	11.389	1.572	1.028
	p	0.000*	0.210	0.359

*: p>0.05 significance level, t: Independent Groups T-Test, F: One-Way Analysis of Variance (ANOVA), n: number, SD: standard deviation.

Table 5. Comparison of DASS-21 sub-dimensions' means based on the variables related to students' internet usage

		DASS-21 Sub-Dimensions		
Variables		**Depression (Mean±SD)**	**Anxiety (Mean±SD)**	**Stress (Mean±SD)**
Internet connection purpose	Social Media (n=231)	14.10±4.98	12.84±3.88	14.78±5.06
	Non-Social Media (n=20)	15.05±5.22	13.90±4.65	14.20±4.49
	t	0.020	1.546	0.309
	p	0.889	0.215	0.579
Daily average internet usage time	0-2 hours (n=51)	14.09±4.62	12.82±4.49	13.72±3.87
	2-4 hours (n=123)	14.08±4.82	12.54±3.41	14.52±4.26
	4-6 hours (n=61)	13.57±5.02	14.04±4.12	14.86±4.97
	6 hours and above (n=16)	17.50±6.42	11.93±4.72	19.12±9.90
	F	2.730	2.409	5.101
	p	0.045*	0.068	0.002*
Internet connection location	Home or Dormitory (n=58)	14.50±5.64	13.20±4.28	16.15±6.60
	Faculty (n=10)	14.20±5.99	14.30±6.37	15.20±6.01
	Mobile (n=183)	14.07±4.74	12.76±3.67	14.26±4.26
	F	0.157	0.902	3.236
	p	0.855	0.407	0.041*

*: p>0.05 significance level, t: Independent Groups T-Test, F: One-Way Analysis of Variance (ANOVA), n: number, SD: standard deviation.

personal lifestyle issue but a factor that may shape learning behaviors, academic performance, and professional readiness.

In this study, nursing students demonstrated moderate levels of technology addiction. While moderate levels may appear non-critical, they may represent a transitional stage toward problematic digital engagement, particularly in a population that is already heavily exposed to digital environments. Previous studies similarly report moderate addiction levels among nursing students,[6,15,18] and Zhang et al.[19] emphasized that nursing students are at risk of uncontrolled internet use. Ac-

Table 6. Relationships between TAS and DASS-21 sub-dimensions

	TAS	
DASS-21	**p**	**r**
Depression	0.007	0.624
Anxiety	0.179	-0.342
Stress	0.000	0.772

cording to data from the Turkish Statistical Institute, the 16–24 age group has the highest internet usage rate in Türkiye.[20] Since most nursing students fall within this age range, their developmental vulnerability combined with academic demands may increase the risk of problematic digital behaviors. In the context of nursing education, even moderate addiction levels may negatively affect attention span, time management, and academic productivity.

Technology addiction differed significantly according to personal and academic variables. Male students reported higher levels of online gaming, whereas female students reported higher website and social media use. Previous studies support these gender-based behavioral differences.[21–24] From an educational perspective, these subdimensions may have different academic implications. For example, excessive online gaming may interfere with structured study time, while excessive social media use may fragment attention and reduce sustained academic focus. Thus, technology addiction should be evaluated not only in terms of frequency but also in terms of its qualitative patterns and their potential academic consequences.

Daily internet use duration was another important factor. Most students reported using the internet for 2–4 hours or more per day. Recommendations within Türkiye's Fight Against Addiction program, coordinated by Yeşilay, suggest limiting screen exposure to 120 minutes per day for individuals over the age of 12.[25] Exceeding this duration may weaken self-regulation skills and promote habitual use. For nursing students, prolonged screen time outside academic purposes may reduce effective study time and impair sleep quality, indirectly affecting academic performance and clinical preparedness.

The relationship between internet use duration and psychological outcomes is particularly important. In this study, longer internet use was associated with higher depression and stress levels. Previous research similarly indicates that prolonged internet exposure increases depression and stress among students.[26] In nursing education, where emotional resilience and interpersonal communication skills are essential, increased psychological distress may negatively influence both academic success and clinical performance. Technology addiction may therefore function both as a maladaptive coping strategy and as a factor that reinforces psychological vulnerability.

Consistent with previous research, depression levels differed according to grade level and GPA. First-year students exhibited higher depression levels, possibly due to adaptation challenges. Moreover, students with lower GPAs had significantly higher depression scores.[27–30] These findings are particularly relevant to nursing education. Academic achievement in nursing is closely linked to clinical competence and patient safety. If technology addiction contributes to decreased academic performance through distraction, time mismanagement, or sleep disturbance, it may indirectly affect professional competence. Therefore, technology addiction should be considered within academic counseling and student support systems.

Students primarily used the internet for social media and accessed it mostly via mobile devices.[31–33] Mobile accessibility increases continuous connectivity and habitual checking behaviors. Differences according to the place of connection suggest that unstructured environments such as home or dormitories may allow more uncontrolled website use, which was also associated with higher stress levels. This contextual pattern highlights that environmental regulation and digital self-discipline may be important areas for educational intervention.

Finally, technology addiction showed a positive correlation with depression and stress. Previous studies indicate that depression and anxiety are both risk factors and consequences of technology addiction.[34–38] This bidirectional relationship suggests that psychological vulnerability and problematic technology use may reinforce one another. For nursing students, who are expected to develop therapeutic communication skills and emotional regulation abilities, this interaction may have both academic and professional implications.

Conclusion

This study provides empirical evidence that technology addiction among nursing students is associated with psychological distress and academic indicators. By evaluating overall technology addiction together with its specific subdimensions and GPA, the findings offer a multidimensional perspective that contributes to a relatively limited body of research in this population. The results highlight the need to address technology addiction not only as a behavioral concern but also as a mental health and educational issue within nursing programs.

Furthermore, the present findings establish a foundation for future longitudinal and interventional studies aimed at clarifying the causal direction between technology addiction, depression, and stress, and at developing targeted prevention and intervention strategies for nursing students.

Ethics Committee Approval: The study was approved by the Çanakkale Onsekiz Mart University Ethics Committee (no: 2024-YÖNP-5475, date: 09/01/2025).

Informed Consent: Written informed consent was obtained from the participants who agreed to participate.

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References

1. Koç A, Tayaz E, Erdem O, Kurt B, Öztaş D. Evaluation of knowledge and opinions of nursing students about addiction. Ankara Med J 2018;18:508–18. [Article in Turkish]
2. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Arlington: American Psychiatric Publishing; 2013.
3. Savci M, Aysan F. Technological addictions and social connectedness: predictor effect of internet addiction, social media addiction, digital game addiction and smartphone addiction on social connectedness. Dusunen Adam J Psychiatr Neurol Sci 2017;30:202–16.
4. van Houwelingen CT, Moerman AH, Ettema RG, Kort HS, Ten Cate O. Competencies required for nursing telehealth activities: A Delphi-study. Nurse Educ Today 2016;39:50–62.
5. Yılmaz G, Fırat M. Teknoloji bağımlılığının çocuklar üzerinde etkileri. In: Demir Gökmen B, editor. Teknoloji bağımlılığı ve mücadele. Ankara: Akademisyen Kitabevi; 2022. p.73–83. [In Turkish]
6. Bayir B, Topbas T. The effect of technology addiction training given to nursing students on the perspectives and addiction levels of students. Arch Psychiatr Nurs 2023;45:152–7.
7. Akkaya G, Babacan Gümüş A, Akkuş Y. Determination of factors affecting the educational stress of nursing students. J Educ Res Nurs 2018;15:202–8. [Article in Turkish]
8. Evgin D, Çalışkan Z, Caner N. Anxiety levels and strategies for coping with stress of nursing students at health college before clinical practice. J SDU Institute Health Sci 2017;8:22–8. [Article in Turkish]
9. Demir Gökmen B. The relationship between technology addiction, self-esteem and defence mechanisms in health students. Sakarya Univ J Holistic Health 2023;6:240–55. [Article in Turkish]
10. Arslan A. Investigation of digital addiction levels of university students in terms of various variables. Int e-J Educ Stud 2020;4:27–41. [Article in Turkish]
11. Kavlak M, Sarılır Aİ, Tönbol B. Does digital game addiction trigger loneliness? J Necmettin Erbakan Univ Ereğli Fac Educ 2022;4:1–13. [Article in Turkish]
12. Cao H, Sun Y, Wan Y, Hao J, Tao F. Problematic Internet use in Chinese adolescents and its relation to psychosomatic symptoms and life satisfaction. BMC Public Health 2011;11:802.
13. Ceyhan AA. Ergenlerin problemli internet kullanım düzeylerinin yordayıcıları. Çocuk Gençlik Ruh Sağ Derg 2011;18:85–94. [Article in Turkish]
14. Dikeç G, Yalnız T, Bektaş B, Turhan A, Çevik S. Relationship between smartphone addiction and loneliness among adolescents. Bağımlılık Derg 2017;18:103–11.
15. Aslan R, Gezgin Yazıcı H, Karabulut E. Hemşirelik öğrencilerinde teknoloji bağımlılığı ile yaşam doyumu ve psikolojik esneklik düzeyleri arasındaki ilişkinin incelenmesi: kesitsel araştırma. Ordu Univ J Nurs Stud 2025;8:156–64. [Article in Turkish]
16. Aydın F. Student views on the problems created by technology addiction in the classroom environment. Master Thesis. Ankara: Ankara University; 2017. [Thesis in Turkish]
17. Yılmaz Ö, Boz H, Arslan A. Validity and reliability study of Turkish short form of Depression Anxiety Stress Scale (DASS-21). J Finance Econom Soc Res 2017;2:78–91. [Article in Turkish]
18. Emre O, Ulutaş A, Nisan F, Görgen AN, Cumurcu HB. Analysis of the correlation between technology and internet addiction in undergraduate students. Batman Univ J Life Sci 2019;9:167–82.
19. Zhang Y, Chen J, Ye H, Volantin L. Psychological effects of cognitive behavioural therapy on internet addiction in adolescents. Medicine 2020;99:e18456.
20. Türkiye İstatistik Kurumu. İstatistiklerle gençlik 2020. Ankara: TÜİK; 2020. Available at: https://www.tuik.gov.tr/media/announcements/istatistiklerle_genclik_2020.pdf. Accessed Mar 26, 2026. [In Turkish]
21. Gökbulut B, Bilen H. Examining the relationship between social media addiction of university students and depression, anxiety and stress. J Higher Educ Sci 2024;14:66–75. [Article in Turkish]
22. Jamir L, Duggal M, Nehra R, Singh P, Grover S. Epidemiology of technology addiction among school students in rural India. Asian J Psychiatr 2019;40:30–8.
23. Kırnık D, Pepeler E, Özbek R. Prospective teachers' attitudes towards the use of social media: Malatya province example. MANAS J Soc Res 2018;7:25–45. [Article in Turkish]
24. Topal M, Küçük-Avcı Ş, İstanbullu A. Investigation of university students' problematic social media use in terms of various variables. Milli Eğitim 2024;53:2013–44. [Article in Turkish]
25. Durmus K, Övür A. Medya etkileri bağlamında okul öncesi dönem çocuklarının yeni medya kullanımının analizi. Yeni Medya Elektronik Derg 2021;5:136–55. [Article in Turkish]

26. Akay A, Ayhan R, Orhan R, Öçalan M. Investigation of university students' leisure time management and technology addiction levels. Int J Cultural Soc Res 2023;9:71–84. [Article in Turkish]
27. Çunkuş N, Karaatlı P, Adana F, Arslantaş H. Factors associated with depressive symptoms and hopelessness level in nursing department students. J Necmettin Erbakan Univ Fac Health Sci 2021;4:6–14. [Article in Turkish]
28. Ulaş B, Tatlıbadem B, Nazik F, Sönmez M, Uncu F. Frequency of depression and related factors in university students. J Celal Bayar Univ Inst Health Sci 2015;2:71–5. [Article in Turkish]
29. Khanehkeshi A, Basavarajapp. The relationship of academic stress with aggression, depression and academic performance of college students in Iran. J Educ Psychol 2011;5:24–31.
30. von Hinke Kessler Scholder S, Davey Smith G, Lawlor DA, Propper C, Windmeijer F. The effect of fat mass on educational attainment: examining the sensitivity to different identification strategies. Econ Hum Biol 2012;10:405–18.
31. Babacan Gümüş A, Şıpkın S, Tuna A, Keskin G. The relationship between problematic internet use, violence tendency and some demographic variables in university students. TAF Prev Med Bull 2015;14:460–7. [Article in Turkish]
32. Aslan E, Yazıcı A. Internet addiction among university students and related sociodemografic factors. Turkish J Clin Psy 2016;19:109–17. [Article in Turkish]
33. Dost A, Kökcü Doğan A, Aslan Huyar D. Internet addiction in nursing students. Ordu Univ J Nurs Stud 2021;4:393–401. [Article in Turkish]
34. Rajab AM, Zaghloul MS, Enabi S, Rajab TM, Al-Khani AM, Basalah A, et al. Gaming addiction and perceived stress among Saudi adolescents. Addict Behav Rep 2020;11:100261.
35. Błachnio A, Przepiórka A, Senol-Durak E, Durak M, Sherstyuk L. The role of self-esteem in Internet addiction: a comparison between Turkish, Polish and Ukrainian samples. Eur J Psychiat 2016;30:149–55.
36. Bozkurt H, Coskun M, Ayaydin H, Adak I, Zoroglu SS. Prevalence and patterns of psychiatric disorders in referred adolescents with Internet addiction. Psychiatry Clin Neurosci 2013;67:352–9.
37. Kim SG, Park J, Kim HT, Pan Z, Lee Y, McIntyre RS. The relationship between smartphone addiction and symptoms of depression, anxiety, and attention-deficit/hyperactivity in South Korean adolescents. Ann Gen Psychiatry 2019;18:1.
38. Selçuk KT, Ayhan D. The relationship between smartphone addiction risk and sleep duration and psychosocial comorbidities in health professional candidates. Perspect Psychiatr Care 2020;56:541–6.

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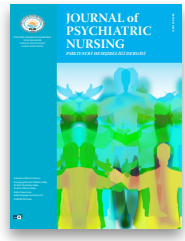

Original Article

Effectiveness of psychoeducational and supportive therapy on the resilience of families with mental disorders

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Abstract

Objectives: This study aims to evaluate the effectiveness of Psychoeducational and Supportive Therapy (PeSo) on the resilience of families with members suffering from mental disorders.

Methods: This study employed a quasi-experimental pre-test and post-test control group design. A total of 120 families were recruited and divided into two groups: the intervention group (n=60) and the control group (n=60). The intervention group received the Psychoeducational and Supportive Therapy (PeSo) module, which was conducted in 6 sessions. Data were collected using a Family Resilience Questionnaire and analyzed using dependent and independent t-tests.

Results: In the intervention group, the mean family resilience score before therapy was 1.87 (SD=0.676), increasing to 2.57 (SD=0.500) after therapy, with a mean difference of 0.700 (SD=0.591), a 95% confidence interval ranging from 0.853 to 0.547, and a p-value<0.001. In the control group, the mean score before therapy was 1.85 (SD=0.685) and 1.97 (SD=0.610) after therapy, with a mean difference of 0.117 (SD=0.415), a 95% confidence interval of 0.224 to 0.009, and a p-value=0.034, indicating a statistically significant improvement in both groups. However, the intervention group showed a much more significant improvement compared to the control group (p<0.001).

Conclusion: Psychoeducational and Supportive Therapy (PeSo) significantly improves the resilience of families with mental disorders. This therapy is recommended as an effective nursing intervention to be integrated into community mental health services to support family caregivers.

Keywords: Mental disorders; psychoeducation; resilience family; supportive therapy

The prevalence of households with members experiencing severe mental disorders in Indonesia is quite significant, reported at 6.7% or around 282,654 households.[1] Mental disorders are a major global public health problem, affecting the quality of life of individuals and the functioning of families more broadly. With the paradigm shift in mental health services from an institutional approach to a community-based approach, families have become the primary caregivers responsible for care, monitoring of symptoms, and maintenance of patient stability. As a result, families directly experience substantial psychological, social, and economic burdens during the caregiving process.[2]

Mental disorders place a heavy psychosocial and economic burden on families as the primary care unit.[3] Families with mental disorders often experience prolonged stress, anxiety, emotional exhaustion, and limited social interaction. The relationship between caregiving burden and caregivers' mental health has been well documented, with caregivers exhibiting higher levels of depression and fatigue than the general population.[4] When families do not receive adequate support and knowledge, their ability to adapt to prolonged stress decreases, which can affect family resilience.

Family resilience is defined as the ability of the family system to survive, adapt, and thrive in the face of crises, including

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mental health issues.[5] This includes effective communication, internal social support, problem-solving skills, and strong collective expectations. A high level of family resilience can reduce negative psychosocial impacts and improve the overall well-being of both the family and the patient.[6]

McCubbin and McCubbin state that family resilience is a combination of positive behavior patterns and functional competencies possessed by each individual in the family and the family unit as a whole. These positive behaviors and individual competencies are needed to respond to stressful and harmful environments (such as significant life events). In addition, this also determines the family's ability to recover by maintaining its integrity as a unit while maintaining and improving the well-being of family members and the family unit as a whole.[7]

To address these challenges, family psychoeducation has been recognized as an important intervention. Family psychoeducation improves families' understanding of the client's condition, enhances caregiving skills, and encourages a proactive role in care.[8] However, knowledge alone is often not enough. Family support (supportive therapy) also plays a key role by providing emotional and instrumental support, which reduces psychological stress.[9] Existing psychosocial data confirm that positive social support increases resilience through adaptive coping mechanisms.[6]

Although each of these therapies has its benefits, the use of a single method often has limitations. Psychoeducation increases knowledge but is not sufficient to overcome severe emotional exhaustion. Conversely, supportive therapy provides emotional support but lacks structured caregiving guidance. Therefore, there is a need to combine psychoeducational therapy and supportive therapy in both theory and practice. Theoretically, this combination of therapies is in line with family systems theory, which emphasizes that family resilience arises from the interaction between increased knowledge through psychoeducation, emotional regulation, and relational support provided by supportive therapy.[6]

Based on this theoretical framework, researchers developed an integrated intervention model called PeSo Therapy (Psychoeducation–Supportive Therapy). This therapy focuses on families with members experiencing mental disorders and is highly relevant to community-based mental health care, using a holistic approach. By combining educational and supportive aspects into a single intervention, PeSo Therapy aims to improve feasibility and sustainability compared to using a single therapy.[5]

Study Aim and Hypothesis

This study aims to evaluate the effectiveness of Psychoeducational and Supportive Therapy (PeSo) on family resilience in caring for patients with mental disorders.

What is presently known on this subject?

- The family is the unit closest to the patient and is the primary caregiver. The family plays a role in determining the care needed by the patient. Long-term treatment often leads to family members feeling overwhelmed and struggling to accept the patient's condition, which ultimately puts the patient at risk of relapse. The combination of psychoeducational and supportive therapy provides families with knowledge in caring for patients and optimizes the support needed for families to become resilient in caregiving.

What does this article add to the existing knowledge?

- The combination of psychoeducational and supportive therapy to enhance family resilience in caring for patients with mental disorders has not previously been implemented in Indonesia. This combination therapy is expected to enhance knowledge and skills in patient care, utilize support systems from both within and outside the family, and thereby create resilient families in caring for patients.

What are the implications for practice?

- This research provides evidence of the need for interventions to enhance family resilience in caring for patients with mental disorders. Family resilience is necessary to prevent relapse in patients with mental disorders. These findings can guide nurses in enhancing family resilience in the community through psychoeducational and supportive therapy.

The hypothesis proposed in this study is:

H1: Psychoeducation and supportive therapy are effective in improving the resilience of families with mental disorders.

Materials and Method

Study Design

This research is a quasi-experimental study with a pre-test-posttest control group design, conducted between July and October 2024 at two primary healthcare centers: Mungkid Health Center and Sawangan Health Center in Magelang, Indonesia.

Sample

The target population for this study includes nuclear families residing in the working areas of Mungkid Health Center and Sawangan Health Center who live with and care for a family member diagnosed with a mental disorder and who have experienced a relapse. According to data obtained from the mental health program in both primary healthcare centers, the total population consisted of 160 eligible families.

A total of 120 respondents were selected as the study sample, consisting of 60 families in the intervention group and 60 families in the control group. The sample size was calculated using a formula to compare two independent means. The calculation was based on a moderate effect size (Cohen's d=0.5), which is generally recommended for psychosocial and behavioral interventions when previous population-based estimates are limited.[10,11] This assumption of a moderate effect size is further supported by previous quasi-experimental studies reporting comparable intervention effects.[12] With a significance level (α)=0.05 and 80% statistical power, the minimum sample size required is 60 families per group.

The intervention and control groups were determined based on the treatment to be evaluated in the study, whereby the intervention group received the treatment being studied, namely PeSo therapy (family psychoeducation and supportive therapy), and the control group received standard care, with the main objective being to compare the effects. Group allocation was performed using a non-random approach. Respondents who met the inclusion criteria were assigned to either the intervention group or the control group based on the order in which they were numbered.

Participants were required to attend all six PeSo therapy sessions to ensure the integrity of the intervention. Criteria for withdrawal from the study included: (1) absence from more than two consecutive sessions, (2) moving out of the study area, (3) hospitalization during the intervention period, or (4) voluntary withdrawal by the respondent. Participants who withdrew were excluded from the final analysis.

Inclusion and Exclusion Criteria

Inclusion Criteria:

- Nuclear families living in the same household as a family member with a mental disorder.
- Families residing in the working area of Mungkid Health Center and Sawangan Health Center.
- Families who have previously experienced a relapse episode of the family member with a mental disorder.

Exclusion Criteria:

• Patients with mental disorders who do not live with family.

• Families with members who have physical disabilities that hinder participation in therapy sessions.

Ethical Considerations

The Health Research Ethics Committee of the Faculty of Health Sciences, Muhammadiyah University Magelang, granted approval for this research on August 30, 2024 (Number: 005/KEPK-FIKES/II.3.AU/F/2024). All procedures were conducted in accordance with the principles of the Declaration of Helsinki. Respondents were informed about this research and provided their consent both in writing and verbally.

Intervention Protocol and Procedure

The intervention used in this study was Psychoeducational and Supportive Therapy (PeSo), using a module as a guideline. This module was developed by the researchers and validated by psychiatric nursing experts before implementation. The intervention was administered by mental health nursing specialists.

The structure and rules of PeSo therapy consisted of six sessions conducted over three weeks (two sessions per week). Each session lasted approximately 60 minutes. Participation in all sessions was mandatory for inclusion in the final analysis. Participants were excluded from the study if they missed more than two consecutive sessions or voluntarily withdrew their consent.

Intervention Phase

This therapy combines educational methods (lectures, booklets) with supportive techniques (group sharing, emotional venting). The content of the six sessions is as follows:

1. **Identifying the problems of the patient and family**
   Facilitators help families recognize the health problems of patients and family members and identify support systems within and outside the family.
2. **Addressing the patient's mental health issues**
   In this session, families are given the opportunity to share their experiences in caring for patients, and facilitators train families on how to care for patients and utilize support systems.
3. **Managing family stress**
   In this session, the facilitator identifies the family's experiences in stress management and then trains the family to manage stress through relaxation exercises and the use of support systems.
4. **Managing family burden**
   In this session, the facilitator identifies the family's experiences in managing family burden, trains the family to manage these burdens, and utilizes support systems.
5. **Preventing patient relapse**
   Facilitators educate families about the meaning, causes, stages of relapse, and its signs and symptoms, and train families on how to prevent relapse.
6. **Conducting monitoring and evaluation of implementation and benefits**
   In the final session, the facilitator evaluates the family's abilities and the benefits of PeSo therapy.

Data Collection Tools

The data collection instrument consists of two parts. Part A is a demographic data sheet designed to obtain information about the family, including age, gender, education, and relationship to the patient. This data is similar to the questionnaire conducted by.[13] Regarding respondent characteristics, this includes age, gender, education, marital status, and relationship to the patient. The same was also reported by[14] regarding the personal information of the patient's family.

Part B consists of the Family Resilience Questionnaire. This instrument was developed and adapted by the researchers based on the dimensions of the Family Resilience Model proposed by McCubbin and McCubbin.[15] These items were specifically modified to align with the Indonesian cultural

Table 1. Study participants characteristics

No	Variabel	Category	Frequency	Percentage
1	Age	20-30 years old	20	16.7
		31-40 years old	9	7.5
		41-50 years old	57	47.5
		51-60 years old	29	24.2
		≥ 61 years old	5	4.2
2	Gender	Man	35	29.2
		Woman	85	70.8
3	Eduction	Elementary School	10	8.3
		Junior high School	33	27.5
		Senior High School	67	55.8
		Bachelor	10	8.3
4	Family relationships	Couple	12	10
		Parent	47	39.2
		Children	50	41.7
		Sibling	11	9.2
5	Family Resilience	Low	37	30.3
		Middle	63	51.6
		High	20	16.4

Table 2. Effectiveness of PeSo therapy on family resilience scores: Analysis within and between groups

Group	Pre-test mean (SD)	Post-test mean (SD)	Within-group p-value[a]	Mean difference (Pre-Post)	Between-group p-value[b]
Intervention (n=60)	1.87 (0.676)	2.57 (0.500)	<0.001	0.700	<0.001
Control (n=60)	1.85 (0.685)	1.97 (0.610)	0.034	0.117	

[a]: Analysis using paired sample t-tests (to compare pre- and post-test scores within each group, [b]: Analysis using independent sample t-tests (to compare post-test scores between the intervention group and the control group. p-value <0.05 is considered statistically significant.

context and the specific conditions of families caring for patients with mental disorders.

Because the instrument was adapted for this study, the researchers conducted validity and reliability tests prior to data collection. A pilot study was conducted on 30 respondents who had similar characteristics to the research population but were not included in the final sample. The validity of the instrument was assessed using Pearson's Product Moment correlation, and the results showed that all 25 items were valid $p<0.05$ (rcount>rtable). The reliability test showed excellent results, with a Cronbach's Alpha coefficient of 0.982.

Statistical Evaluation

Data Analysis

Data analysis was performed using SPSS software version 25.0. The analysis consisted of univariate and bivariate analyses. Univariate analysis was performed to describe the characteristics of the respondents, including age, gender, education level, and relationship with the patient. These variables were presented as frequency distributions and percentages.

Prior to hypothesis testing, a normality test was performed to determine the distribution of the data. Since the data were normally distributed, parametric tests were used. Bivariate analysis was performed using two statistical tests:

1. **Paired t-test:** This test was used to analyze the difference in average resilience scores before and after the intervention in each group (intervention and control).
2. **Independent samples t-test:** This test was used to compare the difference in average resilience scores between the intervention group and the control group.

The statistical significance level was set at $p<0.05$.

Results

Table 1 presents the demographic characteristics of the respondents. The majority of participants were female, aged 41–50 years, with a high school education, with children as caregivers, and family resilience in the moderate category.

Table 2 shows changes in family resilience scores in the intervention and control groups. Paired sample t-test results show a significant increase in resilience scores in both groups

after therapy. In the intervention group, the average score increased from 1.87 in the pre-test to 2.57 in the post-test ($p<0.001$), while the control group showed a statistically significant increase from 1.85 to 1.97 ($p=0.034$) but to a lesser extent. Further analysis using an independent t-test revealed a significant difference between the groups, with the intervention group showing a higher mean difference ($\Delta=0.700$) compared to the control group ($\Delta=0.117$; $p<0.001$). These results indicate that PeSo therapy is more effective than standard community care in improving family resilience.

Discussion

The findings of this study confirm that Psychoeducational and Supportive Therapy (PeSo) significantly improves the resilience of families caring for patients with mental disorders. The results of the analysis show that both groups exhibited changes in resilience over time, but families who received PeSo therapy achieved significantly higher post-intervention resilience scores compared to the control group. This supports the hypothesis that integrated interventions combining knowledge and emotional support are more effective than standard care in helping families care for patients.

These results are consistent with previous studies that suggest family-based interventions are crucial for psychosocial problems. Consistent with the findings, our study validates that increasing family knowledge through psychoeducation helps reduce anxiety and confusion about the patient's condition.[16,17] Furthermore, our results support findings emphasizing that resilient families tend to have open communication and strong emotional support.[18] However, this study expands on previous knowledge by demonstrating the synergistic effects of the PeSo module. Families often face complex challenges, including stigma, isolation, and emotional distress, which cannot be resolved with a single, non-specific intervention.[3,4] By integrating psychoeducation (to address lack of caregiving knowledge and skills) with supportive therapy (to facilitate emotional venting and stress management), PeSo therapy provides a holistic approach. This combination likely explains why the intervention group showed superior resilience compared to the control group, as it empowered families to mobilize internal and external resources.[5,6]

The role of psychoeducation in improving resilience observed in this study can be attributed to the educational component of the PeSo module. Families of patients with mental disorders often experience high levels of stress due to a lack of knowledge about symptom management and treatment adherence. These findings reinforce recent studies which highlight that family psychoeducation effectively reduces caregiver burden by correcting misconceptions and providing practical caregiving strategies.[9,19] When families understand the disease trajectory, it enables them to develop a more resilient outlook and better problem-solving skills.[20]

Supportive therapy plays an important role in strengthening the emotional stability of families in PeSo therapy. Caregivers often face social isolation and emotional exhaustion, which erode family resilience. Our findings align with studies that found interventions facilitating emotional venting and peer support significantly reduced emotional distress within families.[13] By providing a safe space to express frustration and anxiety, PeSo therapy likely enhances families' adaptive coping mechanisms, as supported by evidence emphasizing that emotion regulation is a core component of resilient caregiving systems.[21]

The effectiveness of PeSo therapy observed in this study also highlights important clinical implications. As noted in the literature, such interventions can reduce the risk of relapse and potentially lower treatment costs.[17] Because families play an important role in the rehabilitation and social reintegration of patients,[2,17] integrating PeSo therapy into community mental health services is highly recommended. This strategy offers a practical way for nurses to shift from patient-centered care to a family-centered approach, ensuring that caregivers are not "forgotten patients" but active and resilient partners in the recovery process.

This synergistic intervention expands the existing literature by demonstrating the combined effects of the two approaches. While single-component interventions often address only one aspect of care, the integration of psychoeducation and supportive therapy in PeSo provides holistic benefits. This is consistent with the latest recommendations for mental health nursing, which advocate family-centered care.[22] This comprehensive approach explains why the intervention group showed superior resilience compared to the control group.

Limitations

Although the findings are positive, several limitations should be acknowledged. First, this study was conducted in a specific region, which may limit the generalizability of the findings to other populations with different cultural or socioeconomic contexts. Second, data collection relied on self-administered questionnaires, which may be subject to social desirability bias. Finally, this study only evaluated the immediate post-intervention effects; therefore, the long-term sustainability of the increase in family resilience remains unknown and requires further longitudinal research.

Conclusion

This study concludes that Psychoeducational and Supportive Therapy (PeSo) is effective in significantly improving the resilience of families caring for patients with mental disorders. The

findings show that the PeSo intervention produces superior results compared to standard community care alone. The integration of psychoeducation and supportive therapy has been proven to be an important strategy in helping families adapt to the challenges of caregiving.

Based on these results, it is recommended that community mental health services integrate the PeSo therapy module as a complementary nursing intervention to strengthen the family support system. Furthermore, given the limitations of the study regarding short-term evaluation and specific demographics, future research should use a Randomized Controlled Trial (RCT) design with a longitudinal approach to evaluate the long-term sustainability of the intervention's effects across different populations.

Ethics Committee Approval: The study was approved by the Faculty of Health Sciences, Muhammadiyah University Magelang Ethics Committee (no: 005/KEPK-FIKES/II.3.AU/F/2024, date: 30/08/2024).

Informed Consent: Informed consent was obtained from all individual participants included in the study.

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References

1. Riskesdas. Hasil Riset Kesehatan Dasar Badan Penelitian dan Pengembangan Kesehatan Kementrian Kesehatan Republik Indonesia. Jakarta: Kementerian Kesehatan RI; 2018. [Article in Indonesian]
2. Ong HS, Fernandez PA, Lim HK. Family engagement as part of managing patients with mental illness in primary care. Singapore Med J 2021;62:213–9.
3. Viana MC, Gruber MJ, Shahly V, Alhamzawi A, Alonso J, Andrade LH, et al. Family burden related to mental and physical disorders in the world: results from the WHO World Mental Health (WMH) surveys. Rev Bras Psiquiatr 2013;35:115–25.
4. Soh XC, Hartanto A, Ling N, Reyes M, Sim L, Majeed NM. Prevalence of depression, anxiety, burden, burnout, and stress in informal caregivers: An umbrella review of meta-analyses. Arch Gerontol Geriatr Plus 2025;2:100197.
5. Wei W, Dong L, Ye J, Xiao Z. Current status and influencing factors of family resilience in families of children with epilepsy: a cross-sectional study. Front Psychiatry 2024;15:1354380.
6. Zhang Y, Hu Y, Yang M. The relationship between family communication and family resilience in Chinese parents of depressed adolescents: a serial multiple mediation of social support and psychological resilience. BMC Psychol 2024;12:33.
7. Apostelina E. Resiliensi keluarga pada keluarga yang memiliki anak autis. J Penelit dan Pengukuran Psikol 2012;1:164–76. [Article in Indonesian]
8. Arisandy D, Amanda Astri P. Psikoedukasi menguatkan resiliensi keluarga dalam merawat pasien skizofrenia di puskesmas gandus palembang. J Pengabdi Inov Masy Indones 2025;4:217–22. [Article in Indonesian]
9. Sari A, Duman ZÇ. Effects of the family support and psychoeducation program based on the Calgary Family Intervention Model on the coping, psychological distress and psychological resilience levels of the family caregivers of chronic psychiatric patients. Arch Psychiatr Nurs 2022;41:1–10.
10. Cohen J. Statistical power analysis for the behavioral sciences. 2nd ed. Hillsdale, NJ: Lawrence Earlbaum Associates; 1988.
11. Flanagan J, Beck CT. Polit & Beck's nursing research: generating and assessing evidence for nursing practice. 12th ed. Mexico: Lippincott Williams & Wilkins; 2024.
12. Yilmaz R, Karaoglan Yilmaz FG, Keser H. Vertical versus shared e-leadership approach in online project-based learning: a comparison of self-regulated learning skills, motivation and group collaboration processes. J Comput High Educ 2020;32:628–54.
13. Hayes KN, Rossetti KG, Zlomke K. Community support, family resilience and mental health among caregivers of youth with autism spectrum disorder. Child Care Health Dev 2023;49:130–6.
14. Marzban A, Fereidooni-Moghadam M, Ghezelbash S. The relationship between spiritual intelligence and resilience in family caregivers of patients with chronic mental disorders. Perspect Psychiatr Care 2022;58:2846–53.
15. Hanson SMH, Gedaly-Duff V, Kaakinen JR. Family health care nursing theory, practice, and research. 3rd ed. Philadelphia: F.A. Davis Company; 2005.
16. Ricky DP, Keliat BA, Daulima NHC. Efek terapi perilaku, terapi kognitif perilaku dan psikoedukasi keluarga pada klien halusinasi menggunakan pendekatan teori berubah kurt lewin. J Keperawatan Jiwa Persat Perawat Nas Indones 2014. [Article in Indonesian]
17. Iswanti DI, Nursalam N, Fitryasari R, Mendrofa FAM, Kandar K. Family empowerment strategies for relapse prevention in individuals with schizophrenia: a scoping review. J Psychosoc Nurs Ment Health Serv 2024;62:19–27. [Article in Indonesian]

18. Syam R, Fakhri NF, Jalal NM, Gaffar SB, Evalista M. Psikoedukasi ketahanan keluarga sebagai solusi penanganan kenakalan remaja di era digital. J GEMBIRA (Pengabdian Kpd Masyarakat) 2024;2:776–83. [Article in Indonesian]
19. Okafor AJ, Monahan M. Effectiveness of psychoeducation on burden among family caregivers of adults with schizophrenia: a systematic review and meta-analysis. Nurs Res Pract 2023;2023:1–16.
20. Basu D, Nagpal S, Mutiso V, Ndetei D, Lauwrens Z, Hadfield K, et al. Enhancing resilience and mental health of children and adolescents by integrated school- and family-based approaches, with a special focus on developing countries: a narrative review and call for action. World Soc Psychiatry 2020;2:7.
21. Panzeri A, Bottesi G, Ghisi M, Scalavicci C, Spoto A, Vidotto G. Emotional regulation, coping, and resilience in informal caregivers: a network analysis approach. Behav Sci (Basel) 2024;14:709.
22. National Collaborating Centre for Mental Health (UK). Service user experience in adult mental health: improving the experience of care for people using adult NHS mental health services. Leicester (UK): British Psychological Society (UK); 2012.

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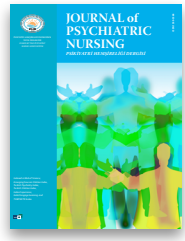

Original Article

Determination of psychosocial care competence, therapeutic alliance and burnout levels in nurses

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Abstract

Objectives: This study aims to determine the psychosocial care competence, therapeutic alliance, and burnout levels of nurses and examine the relationships between them.

Methods: The study was conducted between January and April 2025 with 226 nurses working at Malatya Turgut Özal Medical Center. Data were collected using a Sociodemographic Information Form, the Psychosocial Care Competence Self-Assessment Scale, the Brief Revised Working Inventory/bond subscale, and the Maslach Burnout Inventory via Google Forms. Descriptive statistics, the Kolmogorov-Smirnov test, the Kruskal-Wallis test, the Mann-Whitney U test, and Spearman's correlation test were used in the analysis of the data.

Results: The mean age of the participants was 30.63±6.43. Psychosocial care competence levels showed significant differences based on education and income status, while therapeutic alliance/bond levels showed significant differences based on education ($p<0.001$). A weak negative relationship was found between the psychosocial care competence and burnout levels of the participants, while there was a moderate positive relationship between their psychosocial care competence and therapeutic alliance/bond levels, and there was a weak negative relationship between their burnout and therapeutic alliance/bond levels ($p<0.001$).

Conclusion: It was determined that as the psychosocial care competence and therapeutic alliance/bond levels of nurses increased, their burnout levels decreased. Based on the findings of this study, initiatives aimed at increasing the psychosocial care competence and therapeutic alliance levels of nurses may shed light on the development of effective interventions for nurses to cope with burnout.

Keywords: Burnout; nursing; psychosocial care; therapeutic alliance

When the harmony among the physical, social, and psychological aspects of life is disrupted, individuals may display emotional reactions such as anger, grief, and hopelessness, as well as behavioral reactions such as refusing treatment, hiding one's illness, and social isolation.[1,2] Psychosocial reactions negatively affect the course of the illness and the treatment process, prolonging hospital stay durations, increasing mortality and morbidity rates, and making it difficult to develop effective coping methods for the illness.[3,4] Nurses undertake important responsibilities in preventing these risks and providing psychosocial care within the scope of holistic care.[5] Being able to assess the psychosocial dimension of a patient's condition first requires knowing the criteria of psychosocial care.[6] Nurses identify the psychological symptoms of a patient through observation and effective communication and provide psychosocial support.[7] Psychosocial care aims for the individual to be well in every aspect, recognize their strengths, and improve their quality of life.[8] Previous

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studies have shown that nurses fall short in psychosocial care, experience difficulties, and encounter various barriers in practice.[9–12] The insufficient adoption of psychosocial assessment in nursing practices and the belief that it is primarily the duty of psychiatric nurses are among the main barriers.[6] Psychosocial care reduces hospital stay and healthcare expenditures while increasing care satisfaction and reducing the anxiety and stress levels of patients.[4,13] Nurses should know the importance of psychosocial care, recognize the behavioral and emotional reactions of patients, and be competent in demonstrating an appropriate approach.[14] Factors like professional experience, professional attitudes, higher education, interpersonal communication, and closely following technological developments affect competence.[15] Skills related to identifying, planning, and implementing psychosocial care reflect the competence level of a nurse.[16] Moderate levels of psychosocial care competence have been found among nurses.[17–19]

Psychosocial care includes nursing interventions such as active listening, establishing empathy, ensuring the therapeutic relationship and forming the alliance, and teaching the patient coping methods for stress.[1] The successful implementation of psychosocial care is possible through a therapeutic alliance based on mutual trust between the nurse and the patient.[20,21] Therapeutic alliance is defined as the patient and counselor reaching an agreement on the goals and tasks of the treatment process and establishing an emotional bond during this process.[22] Establishing a strong therapeutic alliance supports the developmental process of the patient, improves clinical outcomes, and prevents treatment from remaining incomplete by facilitating the patient's participation and adherence to treatment.[22,23] Therapeutic alliance initially focuses on the uniqueness of the individual and initiates the helping relationship, then becomes the star component of care and enables the main practices to take place. It also enables nurses to better understand the events patients have experienced throughout their lives and becomes a valuable nursing care tool that is effective in care and decision-making stages related to the patient.[24] Additionally, it allows qualified nursing interventions to be included in care.[25] In interventions, a strong nurse-patient alliance is not only limited to improvements in clinical outcomes and patient care satisfaction but also contributes to reducing the stress levels of nurses.[26]

Burnout, which is considered to be inversely proportional to psychosocial care and therapeutic alliance, emerges in professions requiring intense human interaction and emotional connection, and chronic work stress causes individuals experiencing burnout to become desensitized toward the people they serve.[27,28] In the healthcare sector, nurses have to struggle with burnout more than other healthcare personnel.[28] According to a meta-analysis, emotional exhaustion is seen at a rate of 24%, depersonalization is seen at a rate of 30%, and low personal accomplishment is observed at a rate of 28% among nurses working in palliative care.[29] In a study conducted by Yazıcı et al.[30] in Türkiye, burnout levels of nurses working in neonatal units were found to be 76.1%. Equipment and personnel shortages, negative behaviors of patients and their relatives, unclear job descriptions, financial issues, shift work, unit characteristics, the course of the illness, and individual factors lead to burnout in nurses.[31–34] Burnout reduces the quality of healthcare services and negatively affects patient safety, work continuity, institutional functioning, psychosocial care quality, and the nurse-patient alliance.[35,36] To reduce the burnout levels of nurses and improve the quality of care, it is important for healthcare institutions to include psychosocial care in patient care processes and provide training aimed at improving the coping, communication, and awareness skills of nurses.[28] In this study, it was aimed to investigate the psychosocial care competence, therapeutic alliance, and burnout levels of nurses and determine the relationships between these variables. Since nurses have difficulty integrating psychosocial care and therapeutic alliance into the necessary diagnosis, planning, and implementation processes in line with the care needs of patients, determining the relationships between psychosocial care competence, therapeutic alliance, and burnout is highly important for creating awareness among nurses and reducing burnout rates.

What is presently known on this subject?

- Although there are studies examining the psychosocial care competence, therapeutic alliance, and burnout levels of nurses separately, no comprehensive study investigating the relationships between them has been encountered.

What does this article add to the existing knowledge?

- The results revealed that when psychosocial care competence and therapeutic alliance/bond levels were considered together in nurses, they had a protective effect on burnout.

What are the implications for practice?

- The results of this study may guide practices that will improve the ability of nurses to provide psychosocial care and establish a therapeutic alliance, creating an effective intervention area in preventing and managing burnout.

Research Questions

- What are the levels of psychosocial care competence, therapeutic alliance, and burnout levels of nurses, and what are the relationships between them?
- Do the sociodemographic characteristics of nurses affect their psychosocial care competence, therapeutic alliance, and burnout levels?

Materials and Method

Design

This is a descriptive correlational study.

Time and Setting

The study was conducted at Malatya Turgut Özal Medical Center (Turgut Özal Tıp Merkezi, TÖTM) between January and April 2025.

Population and Sample

The sample of the study consisted of nurses working at TÖTM who met the inclusion criteria. The minimum required sample size for the study was determined as 213 people in a power analysis conducted based on 0.95 power, an error margin of 0.05, and a 0.25 effect size.[37] Individuals who met the inclusion criteria were enrolled in the sample using a non-probability sampling method until a sufficient sample size was reached. The study was completed with a total of 226 individuals.

Inclusion Criteria

- Being open to communication and cooperation,
- Being 18-65 years old.

Exclusion Criteria

- Being on long-term leave or sick leave during the study period,
- Working in administrative units.

Variables

Dependent Variables:

- Psychosocial Care Competency Levels,
- Therapeutic Alliance Levels,
- Burnout Levels.

Independent Variables:

- Age,
- Marital Status,
- Education Level,
- Unit of Employment,
- Years of Experience as a Nurse,
- Income Status,
- Working Schedule,
- Average Weekly Working Hours.

Data Collection Instruments

A Sociodemographic Information Form, the Psychosocial Care Competence Self-Assessment Scale, the Brief Revised Working Alliance Inventory, and the Maslach Burnout Inventory were used to collect data.

Sociodemographic Information Form

The form was prepared based on the review of the relevant literature conducted by the researcher. It consisted of 8 questions about participant characteristics, including age, marital status, education level, unit of employment, years of experience working as a nurse, income status, working schedule, and average weekly working hours.[38]

Psychosocial Care Competence Self-Assessment Scale (PCC-SAS)

The scale was created to measure the psychosocial care competence levels of nurses. The Turkish validity and reliability study of the scale was conducted by Karataş and Kelleci (2021). Each item of the 5-point Likert-type scale is scored as 'Does not describe me at all (1)', 'Describes me a little (2)', 'Undecided (3)', 'Describes me well (4)', or 'Describes me very well (5)'. Some items of the 44-item scale (items 6, 12, 39, and 40) are scored in reverse. The range of total scale scores is 44-220. Higher scores indicate that the respondent has a higher self-assessment of their psychosocial care competence. In the validity and reliability study of the scale, some items were removed, similar results to those in the original version were obtained, and the number of items was reduced to 18. The scale consists of 4 dimensions: 'Symptom Identification', 'Use of Knowledge', 'Intervention', and 'Diagnosis'. The Cronbach's alpha coefficient of the scale was reported as 0.93.[4] In this study, Cronbach's alpha coefficient was found to be 0.96.

Brief Revised Working Alliance Inventory (BR-WAI)

The original version of the scale was created by Horvath and Greenberg (1989). Later, Soygüt and Işıklı (2008) conducted the Turkish validity and reliability study of the scale. The scale consists of 36 items, and it has two forms: patient and therapist. Prepared in line with Bordin's theory on the conceptualization of therapeutic alliance, the scale consists of 3 dimensions: task, goal, and bond, each containing 12 items. A total score for the overall scale or a separate score for each dimension can be obtained and interpreted. The range of total scale scores is 12-84. Higher total scores indicate a strong therapeutic alliance established with the patient. The Brief Revised Working Alliance Inventory (BR-WAI) consists of a total of 12 items based on the Working Alliance Inventory. It is a 7-point Likert-type scale. While creating the short form of the scale, Tracey and Kokotovic (1989) selected 4 items from each dimension that would yield similar results to the original scale. The Cronbach's alpha coefficient of the patient form varied between 0.90 and 0.92, while the Cronbach's alpha coefficient of the overall scale was 0.98.[39] In this study, only the bond dimension (items 3, 5, 7, and 9) of the scale was used, and the Cronbach's alpha coefficient of this dimension was found to be 0.89.

The items in the bond dimension are as follows:

- I believe my patient feels close to me.
- I believe I can help my patient.
- I appreciate my patient.
- My patient and I trust each other.

Maslach Burnout Inventory (MBI)

The first form of the scale was created by Maslach in 1981. The validity and reliability study of the scale in Turkish was conducted by Ergin in 1992. It is a 5-point Likert-type scale with response options scored from 0 to 4. The scale has 3 dimensions: depersonalization, emotional exhaustion, and personal accomplishment, and consists of 22 items. Five items constitute the depersonalization dimension, 9 items constitute the emotional exhaustion dimension, and 8 items constitute the personal accomplishment dimension. While the scoring of the depersonalization and emotional exhaustion dimensions progresses from 0 to 4, the opposite applies for personal accomplishment. The score ranges of the dimensions are 0-36 for emotional exhaustion, 0-20 for depersonalization, and 0-32 for personal accomplishment. For emotional exhaustion, scores between 0 and 11 are considered low, those between 12 and 17 are considered moderate, and those at or above 18 are considered high risk. For depersonalization, scores between 0 and 5 are considered low, those between 6 and 9 are considered moderate, and those at or above 10 are considered high risk. For personal accomplishment, scores between 0 and 21 are considered high, those between 22 and 25 are considered moderate, and those at or above 26 are considered low risk. While the items in the depersonalization and emotional exhaustion dimensions are negative statements, those in the personal accomplishment dimension are positive statements. Higher scores obtained from the depersonalization and emotional exhaustion dimensions indicate increased burnout levels, while low personal accomplishment is considered an indicator of high burnout.[40–42] In our study, the Cronbach's alpha coefficient of the scale was found to be 0.88.

Data Collection

The data were collected at TÖTM. Ethics committee approval and institutional permission were obtained for the study. The Google Forms platform was used to obtain consent from nurses who met the inclusion criteria and inform them about the study. The data were collected using 4 forms: a Sociodemographic Information Form, PCC-SAS, BR-WAI/bond dimension, and MBI.

Data Analysis

The data were analyzed using the SPSS 23.0 program. Normal distribution assumptions were evaluated with the Kolmogorov-Smirnov test ($p<0.001$). Since parametric test assumptions were not met, the Mann-Whitney U, Kruskal-Wallis, and Bonferroni-corrected Mann-Whitney U tests were used. Categorical data are presented as frequency and percentage values, continuous data are presented as mean, standard deviation, and min-max values, and the relationships between scale scores were examined with Spearman's correlation test.

Ethical Aspect of the Study

Approval (04.02.2025) (2025/6901) was obtained from İnönü University Scientific Research and Publication Ethics Committee, and legal permission (20.01.2025) (E-68636013-544971) was obtained from Malatya Turgut Özal Medical Center. Necessary permissions were obtained from the researchers who conducted the validity and reliability studies of the scales used in the study. Nurses who volunteered to participate and met the inclusion criteria were included in the study. Information about the purpose, duration, and scope of the study and the explanation that participation was voluntary were provided online via Google Forms to nurses who agreed to participate. The ethical principles stated in the Declaration of Helsinki were followed throughout all procedures in the study.

Limitations

The results of this study are limited to the nurses in the sample and cannot be generalized. The limitations of the study included the fact that only nurses working at TÖTM were included, and the information obtained regarding psychosocial care competence, therapeutic alliance, and burnout levels was based on self-reports.

Results

This section presents the results of the statistical analyses of the data collected from the participants.

It was determined that 60.6% (n=137) of the participants were 18-30 years old, 53.1% (n=120) were single, 82.3% (n=186) had undergraduate degrees, 53.1% (n=120) were working in internal medicine clinics, 34.1% (n=77) had work experience longer than 8 years, 65.5% (n=148) had medium levels of income, 77.4% (n=175) worked day and night shifts, and 49.6% (n=112) worked less than 40 hours per week. The ages of the participants ranged from 22 to 50, while their mean age was 30.63±6.43 (Table 1).

In the comparisons of the mean total PCC-SAS scores of the participants based on their sociodemographic characteristics, significant differences were found in relation to their education levels and income statuses. According to the results of the post hoc test (Bonferroni-corrected Mann-Whitney U test), this difference originated from the participants who had graduate education, and the psychosocial care competence levels of those whose income levels were medium or high were also higher than those of the participants whose income levels were low ($p<0.001$). The mean BR-WAI/bond scores of the participants significantly differed based on their education levels. According to the results of the post hoc test (Bonferroni-corrected Mann-Whitney U test), the therapeutic alliance/bond dimension levels of the participants who had vocational health high school and associate degrees were higher than

Table 1. Sociodemographic characteristics (n=226)

	Frequency (n)	Percentage (%)
Age (years)		
18-30	137	60.6
31-45	75	33.2
46-65	14	6.2
Marital status		
Married	106	46.9
Single	120	53.1
Education level		
Vocational high school of health	12	5.3
Associate	10	4.4
Undergraduate	186	82.3
Graduate	18	8.0
Unit of employment		
Emergency service	25	11.1
Internal medicine clinics	120	53.1
Surgical clinics	36	15.9
Intensive care	31	13.7
Operating room	14	6.2
Years of experience as a nurse		
Less than 1	27	11.9
1-4	61	27.0
5-8	61	27.0
More than 8	77	34.1
Income status		
Low	15	6.6
Medium	148	65.5
High	61	27.0
Very high	2	0.9
Working schedule		
Day shift	50	22.1
Day+night shift	175	77.4
Night shift	1	0.4
Weekly average working hours		
Less than 40 hours	112	49.6
40-50 hours	89	39.4
More than 50 hours	25	11.1
	Mean±SD	**Min-Max**
Age	30.63±6.43	22-50

Min: Minimum, Max: Maximum, SD: Standard deviation.

those of the participants who had undergraduate education (p<0.001). There was no statistically significant difference in the mean total MBI scores of the participants based on their sociodemographic characteristics (p>0.001) (Table 2).

The mean total PCC-SAS score of the participants was 67.37±13.83, which indicated moderate levels of self-assessed psychosocial care competence. This suggested that the participants did not see themselves sufficiently competent in evaluating their patients psychosocially and providing psychosocial care to their patients. The mean BR-WAI/Bond score of the participants was 20.04±4.45, which indicated above-moderate levels of therapeutic alliance. This suggested that the participants were willing to establish the emotional bond necessary for a therapeutic alliance between the nurse and the patient. The mean total MBI score of the participants was 35.45±12.64, which indicated above-moderate levels of burnout in general. It was determined that the mean scores of the participants were moderate for the emotional exhaustion dimension, moderate for the depersonalization dimension, and high for the mean personal accomplishment dimension. According to the results of the correlation analyses, as the emotional exhaustion and depersonalization dimension scores of the participants increased, their levels of burnout increased, while as their scores in the personal accomplishment dimension increased, their levels of burnout decreased (Table 3).

A weak, negative, and statistically significant relationship was found between the PCC-SAS and MBI scores of the participants (r=-0.230), while there was a moderate, positive, and significant relationship between their PCC-SAS scores and BR-WAI/Bond scores (r=0.558), and there was a weak, negative, and significant relationship between their BR-WAI/Bond scores and MBI scores (r=-0.293). It was determined that as the psychosocial care competence and therapeutic alliance/bond levels of the participants increased, their levels of burnout decreased, and as their therapeutic alliance/bond levels increased, their psychosocial care competence levels increased (p<0.001) (Table 4).

Discussion

In this section, the data regarding the psychosocial care competence, therapeutic alliance, and burnout levels of nurses are discussed along with the literature. It was determined that 60.6% of the nurses participating in the study were 18-30 years old, 53.1% were single, and 82.3% had undergraduate degrees. It was found that 53.1% of the participants worked in internal medicine clinics, 34.1% had been working for more than 8 years, 65.5% had medium income, 77.4% worked on day and night shifts, and 49.6% worked less than 40 hours per week.

Psychosocial Care Competence Levels of Nurses

Psychosocial care practices consist of steps that relieve, empower, encourage, and develop a sense of trust in the patient. Psychosocial care also helps maintain a comfortable life by enabling the patient to understand their self-worth, raising their hope, increasing their social interaction with other individuals, and opening new doors for overcoming difficult situations.[1] After psychosocial care provided by midwives/nurses to families experiencing perinatal loss, Xie et al.[43] observed fa-

Table 2. Comparisons of the Psychosocial Care Competence Self-Assessment Scale, Brief Revised Working Alliance Inventory/Bond Dimension, and Maslach Burnout Inventory scores of the participants based on their sociodemographic characteristics (n=226)

	PCC-SAS		BR-WAI/Bond		MBI	
Age	**Med (Min-Max)**	**Mean±SD**	**Med (Min-Max)**	**Mean±SD**	**Med (Min-Max)**	**Mean±SD**
18-30	70.0 (29.0-90.0)	67.04±13.49	20.0 (5.0-28.0)	19.66±4.54	39.0 (2.0-63.0)	35.86±12.37
31-45	70.0 (25.0-90.0)	67.12±14.64	20.0 (11.0-28.0)	20.61±4.30	35.0 (1.0-63.0)	35.41±12.86
46-65	74.0 (34.0-82.0)	70.35±13.14	21.50 (13.0-28.0)	20.71±4.26	35.0 (8.0-49.0)	31.71±14.38
KW	1.953		1.564		0.733	
p	0.377		0.457		0.693	
Marital status						
Married	70.0 (25.0-90.0)	66.94±13.63	21.0 (11.0-28.0)	20.28±4.28	35.0 (2.0-59.0)	34.42±12.37
Single	71.0 (25.0-90.0)	67.56±14.05	20.0 (5.0-28.0)	19.83±4.61	37.50 (1.0-63.0)	36.36±12.86
MWU	6238.0		5982.0		5828.0	
p	0.803		0.439		0.278	
Education level						
Vocational high school of health	75.0 (35.0-90.0)	70.66±17.33	23.0 (15.0-28.0)	22.83±3.78	32.50 (2.0-54.0)	29.75±15.37
Associate	77.50 (40.0-90.0)	73.80±15.81	23.0 (16.0-28.0)	22.80±4.34	38.50 (17.0-56.0)	37.80±12.56
Undergraduate	70.0 (25.0-90.0)	65.87±13.52	20.0 (5.0-28.0)	19.61±4.47	38.0 (1.0-63.0)	36.01±12.76
Graduate	76.0 (61.0-90.0)	75.88±9.08	21.50 (15.0-28.0)	21.11±3.49	30.50 (17.0-48.0)	32.16±8.19
KW	13.584		11.026		4.770	
p	0.004*		0.012*		0.189	
Unit of employment						
Emergency service	67.0 (46.0-90.0)	66.12±11.99	19.0 (5.0-28.0)	18.80±5.12	37.0 (2.0-63.0)	36.28±13.62
Internal medicine clinics	71.50 (25.0-90.0)	68.82±12.97	20.50 (7.0-28.0)	20.20±4.46	40.0 (1.0-63.0)	36.55±12.62
Surgical clinics	70.50 (25.0-83.0)	65.88±13.66	20.0 (12.0-27.0)	19.47±3.90	34.0 (11.0-63.0)	34.69±11.51
Intensive care	70.0 (29.0-90.0)	66.19±16.40	20.0 (8.0-28.0)	20.58±4.81	41.0 (8.0-58.0)	35.38±13.38
Operating room	65.50 (29.0-90.0)	62.00±17.83	20.50 (17.0-28.0)	21.21±3.46	28.50 (9.0-39.0)	26.64±9.96
KW	3.783		3.513		9.293	
p	0.436		0.476		0.054	
Years of experience						
Less than 1	72.0 (47.0-90.0)	70.55±10.87	20.0 (10.0-28.0)	20.59±4.97	40.0 (3.0-56.0)	36.29±13.75
1-4	69.0 (29.0-83.0)	64.91±12.44	20.0 (5.0-26.0)	19.37±3.92	34.0 (8.0-63.0)	34.18±11.66
5-8	70.0 (30.0-90.0)	68.14±14.27	20.0 (7.0-28.0)	20.09±4.80	39.0 (1.0-63.0)	36.85±13.17
More than 8	72.0 (25.0-90.0)	67.29±15.29	20.0 (8.0-28.09	20.33±4.40	35.0 (7.0-63.0)	35.06±12.69
KW	3.848		1.686		2.603	
p	0.278		0.640		0.457	
Income status						
Low	59.0 (25.0-82.0)	57.20±16.39	16.0 (7.0-25.0)	17.00±5.39	39.0 (19.0-57.0)	39.33±11.14
Medium	70.0 (25.0-90.0)	67.49±13.29	20.0 (5.0-28.0)	20.04±4.50	39.0 (1.0-63.0)	35.44±13.28
High	72.0 (25.0-90.0)	69.62±13.26	20.0 (13.0-28.0)	20.80±3.82	34.0 (7.0-59.0)	34.40±11.51
Very high	55.0 (38.0-72.0)	55.00±24.04	19.50 (16.0-23.0)	19.50±4.94	39.0 (35.0-43.0)	39.00±5.65
KW	8.685		6.199		2.159	
p	0.034*		0.102		0.540	
Working schedule						
Day shift	70.0 (25.0-90.0)	68.76±11.51	20.0 (11.0-28.0)	20.20±3.77	35.0 (12.0-59.0)	35.72±11.14
Day+night shift	71.0 (25.0-90.0)	66.85±14.46	20.0 (5.0-28.0)	20.02±4.64	38.0 (1.0-63.0)	35.30±13.07
Night shift	-	-	-	-	-	-
KW	0.226		1.236		1.433	
p	0.893		0.539		0.488	
Weekly working hours						
Less than 40	70.0 (25.0-90.0)	68.05±11.70	20.0 (5.0-28.0)	20.04±4.18	35.0 (1.0-63.0)	34.44±12.34
40-50	70.0 (25.0-90.0)	66.70±15.74	21.0 (7.0-28.0)	20.40±4.62	40.0 (2.0-63.0)	36.22±12.99
More than 50	71.0 (34.0-89.0)	65.80±15.62	18.0 (10.0-28.0)	18.76±4.95	41.0 (8.0-59.0)	37.24±12.87
KW	0.064		2.685		2.292	
p	0.969		0.261		0.318	

*: p<0.001; PCC-SAS: Psychosocial Care Competence Self-Assessment Scale; BR-WAI/Bond: Brief Revised Working Alliance Inventory/Bond Dimension; MBI: Maslach Burnout Inventory; Min: Minimum; Max: Maximum; Med: Median; X: Mean; SD: Standard deviation; KW: Kruskal-Wallis test; MWU: Mann-Whitney U test.

Table 3. Total scale and subscale scores of the participants (n=226)

	Mean±SD	Possible Min-Max
PCC-SAS	67.37±13.83	18-90
BR-WAI/bond	20.04±4.45	4-28 (bond dimension) 12-84 (total scale)
MBI	35.45±12.64	0-88
Emotional exhaustion	17.46±8.15	0-36
Depersonalization	7.27±4.41	0-20
Personal accomplishment	10.71±4.73	0-32

PCC-SAS: Psychosocial Care Competence Self-Assessment Scale, BR-WAI/Bond: Brief Revised Working Alliance Inventory/Bond Dimension, MBI: Maslach Burnout Inventory, Min: Minimum, Max: Maximum, X: Mean, SD: Standard deviation.

Table 4. Relationships between the scale scores of the participants (n=226)

		MBI		BR-WAI/Bond	
PCC-SAS	r	-0.230**	p<0.001	0.558**	p<0.001
MBI	r			-0.293**	p<0.001

**: p<0.001. PCC-SAS: Psychosocial Care Competence Self-Assessment Scale, BR-WAI/Bond: Brief Revised Working Alliance Inventory/Bond Dimension, MBI: Maslach Burnout Inventory, r: Spearman's Correlation.

vorable changes in the anxiety, depression, and posttraumatic stress disorder levels of families. Holistic care, which includes psychosocial care, contributes to increasing the professional expertise levels of nurses, strengthening their communication with colleagues and other individuals, increasing their professional satisfaction, motivation, and job satisfaction, and developing empathy and autonomy skills.[44] In this study, nurses were found to have moderate levels of psychosocial care competence based on their self-assessments. There are studies reporting higher levels of psychosocial care competence among nurses in comparison to those found in this study.[4,45] There are also studies that obtained results similar to this study.[46–48] Accordingly, it can be stated that the psychosocial care competence levels of nurses are moderate in general. The moderate levels of psychosocial care competence observed in this study may be attributed to the possibility that the participants saw themselves as insufficient in providing psychosocial care and were aware that psychosocial care should be included in the care process, but due to heavy workload and other working conditions, only physical care could be provided.

Psychosocial Care Competence Comparisons According to the Sociodemographic Characteristics of Nurses

Psychosocial care is often overlooked, and physical care is prioritized due to deficiencies in the education of student nurses, disruptions in the mechanisms of healthcare institutions, or difficulties in understanding, internalizing, and maintaining psychosocial care. The reason for this is that tangible physical symptoms are easier to detect compared to psychological symptoms that require empathic skills.[4] In the study conducted by Arslan and Yazıcı with intensive care nurses, it was seen that 40% of the nurses consulted psychiatric services when evaluating their patients psychologically.[11] Psychosocial care should be included more in the curriculum of nursing students during undergraduate education, in-service training should be continued after starting the profession, and additionally, to eliminate the educational deficiencies that arise in initiating and maintaining psychosocial care, more importance should be given to consultation-liaison psychiatry nursing (CLPN) in hospitals, and job opportunities should be created.[3] In the study conducted by Abu Shosha et al.,[10] which included the experiences of nurses regarding the psychosocial care needs of children with thalassemia and their families, nurses stated that they needed training programs to provide better psychosocial care to these children and their families. In this study, a significant difference was found in the psychosocial care competence levels of the participants based on their education levels, and the source of this difference was the group of participants with graduate-level education. In the study performed by Altan Sarıkaya and Duva with nurses who had graduate education, the psychosocial care competence levels of nurses were above moderate.[2] There are also studies that did not find a significant relationship between the education status and psychosocial care competence of nurses.[6,7] Belhaj Haddou et al.[19] stated that when sufficient education was not available in identifying and evaluating psychosocial care needs, psychosocial skill levels worsened. In a study examining the psychosocial skill levels of nurses providing care to cancer patients, the skill levels of nurses with undergraduate and graduate education levels were found to be higher. Additionally, nurses who had previously participated in training programs related to psychosocial care were reported to have higher skill levels.[49] In the study carried out by Arends et al.[50] to determine the psychosocial care needs of cancer patients, nurses were first asked to identify the psychosocial care needs of cancer patients before receiving training, they were then given psychosocial care training, and after the training, they saw themselves as more competent in this regard. It can be

argued that as the education level of nurses increases, they see themselves as more competent in evaluating the patient psychologically and providing psychosocial care.

In recent years, the inadequate wages of nurses have caused a decrease in their motivation toward the service provided and led nurses to experience psychological problems. Erçevik et al.[51] reported that nurse salaries were not sufficient to meet their living expenses. Receiving salaries that are not at a level that provides satisfaction is an expected situation to affect the quality of care provided by nurses. In this study, a significant relationship was found between the income levels and psychosocial care competence of the participants. The psychosocial care competence of nurses with medium and high levels of income was found to be higher than that of those with low income. Yusefi et al.,[52] who addressed the quality of care provided by nurses in physical, psychosocial, and communication dimensions, reported that all dimensions were at moderate levels, and no statistically significant relationship was found between the quality of care provided by nurses and their income levels. Contrary to this study, there are also studies that did not reveal a significant relationship between the income levels and psychosocial care competence of nurses.[4,6,7] The satisfaction of nurses with their salary may lead them to feel psychologically well and increase the quality of care provided by them due to their satisfaction with their jobs.

Therapeutic Alliance Levels of Nurses

Nurses, who hold a valuable position in the field of health, need to establish a healthy bond that includes strong and solid relationships with individuals to manage care and treatment, which are accepted as the cornerstone of the profession, establish the nurse-patient alliance, and fulfill their duties and responsibilities more effectively.[53] Establishing an emotional bond based on sincerity within mutual trust and respect is one of the conditions that must first be ensured for the formation of a therapeutic alliance.[54] The therapeutic bond is accepted as a fundamental element for ensuring the adaptation of the patient to their environment, understanding the needs of the patient, and acknowledging the influence of other aspects of their life.[55] This phenomenon contributes to the effectiveness of the psychosocial care process by influencing the interaction between the nurse and the patient and plays an important role in preventing burnout.[53] In this study, the therapeutic alliance/bond levels of the participants were moderate. In a study conducted with mental health nurses in Indonesia to evaluate the effects of sociodemographic characteristics on establishing a therapeutic alliance, the therapeutic alliance/bond levels of the nurses were found to be above moderate.[56]

El Abidi et al.[25] examined the therapeutic relationship between the patient and the nurse in a study involving 234 patients and 58 nurses, and the therapeutic alliance/bond levels of the nurses were determined to be moderate, while nurses were more inclined toward the therapeutic relationship compared to patients. Indeed, this is natural because the formation and management of the therapeutic alliance is primarily the responsibility of those who perform the therapeutic approach (e.g., therapist, physician, nurse).

Therapeutic Alliance Comparisons According to the Sociodemographic Characteristics of Nurses

The therapeutic bond, which emphasizes that effort must be made both to ensure that the bond established between the patient and the counselor is strong and to achieve agreement in treatment, also affects the ability of the counselor to understand the problems of the patient, find solutions to their problems, and manage the treatment productively.[57] Establishing a solid therapeutic alliance may involve certain difficulties, as it requires having sufficient theoretical and technical knowledge, being skilled in ensuring social interaction, being able to establish emotional bonds effectively, and being an expert in the field.[58] Overcoming the difficulties that may arise while forming the alliance, managing events and situations effectively, and ensuring and maintaining interpersonal relationships require the counselor to be competent in the field and have high awareness. This can only be achieved through education.[23] In this study, a significant difference was found in the therapeutic alliance/bond levels of the participants based on their education levels, and the difference was determined to originate from the participants who had vocational health high school and associate degrees. According to Roviralta-Vilella et al.,[59] having higher levels of education was associated with establishing a better therapeutic relationship. Moreno-Poyato and Rodríguez-Nogueira reported that the therapeutic alliance/bond levels of nurses who had doctoral and master's education were significantly higher than those of nurses who had undergraduate education.[57] In the study conducted by Yosep et al.,[56] nurses with high levels of education were identified as more inclined to establish a therapeutic alliance. In the study conducted by Al-Shammari et al.[58] with nurses at a community mental health center in Hafar Al Batin, no significant relationship was found between the education levels and therapeutic alliance levels of nurses. The therapeutic alliance levels of the participants who had vocational health high school and associate degrees may have been higher because the number of nurses with these education levels participating in the study was lower than the number of those with undergraduate or graduate education.

Burnout Levels of Nurses

Nurses experience decreases in productivity in both their work and private life because they encounter many negative factors throughout their professional life. The reason for

this is that nurses are the first authority exposed to the problems of patients and their relatives.[60] Taking precautions to overcome burnout and making positive adjustments in professional life increase the quality of care provided by nurses. At the same time, this acts as a shield against problems such as weariness and indifference toward work and difficulties in concentrating on work.[61] In this study, the burnout levels of nurses were found to be moderate. In the study conducted by Kekeç and Tan, the burnout levels of nurses were found to be high.[33] Erçevik and Bahçecik also reported moderate levels of burnout in nurses.[51] The results of this study were consistent with the literature. The burnout levels of nurses can be evaluated based on the total score of the MBI, as well as based on separate dimension scores. In this study, the scores of the participants in the emotional exhaustion and depersonalization dimensions of MBI indicated moderate levels of burnout, while their scores in the personal accomplishment dimension indicated low levels. Similar results were obtained in the study conducted by Uzun and Mayda.[27] In a study conducted with 250 nurses in Saudi Arabia, nurses received high or moderate scores in the emotional exhaustion and depersonalization dimensions of MBI, while they received low scores in the personal accomplishment dimension.[62] It is thought that the reasons for the high burnout levels of nurses include the lack of motivational resources that would increase their productivity in response to intense and stressful working conditions, their excessive workload, and the lack of clarity in job descriptions.

Burnout Comparisons According to the Sociodemographic Characteristics of Nurses

The most common symptoms of burnout in nurses involve them often describing themselves as exhausted, unwilling to go to work, physically and mentally worn out, indifferent to people who need help, experiencing sleep and appetite problems, and being depressive and tense.[28] It was stated that nurses who experienced excessive burnout symptoms in the early stages of their professional life were more prone to depression, sleep disorders, and cognitive impairments.[63] In this study, no significant difference was identified in the burnout levels of the participants based on their age, marital status, education level, years of work, income status, working schedule, or weekly working hours.

Relationships between the Psychosocial Care Competence, Therapeutic Alliance, and Burnout Levels of Nurses

The biopsychosocial model argues that to achieve person-centered care, there must be an agreement based on alliance in the relationship between the counselor and the patient.[64] A solid relationship based on therapeutic alliance allows the establishment of a bond based on trust and increases the quality of psychosocial care. Thus, the chance of psychological practices being included in care may increase.[65] From this perspective, more studies are needed to understand the effectiveness of the relationship established based on alliance in psychosocial practices and determine methods that will strengthen the nurse-patient relationship in the process of improving care.[66] In this study, a positive correlation was observed between the psychosocial care competence and the therapeutic alliance/bond levels of nurses, which would indicate the important place of these variables in establishing the nurse-patient alliance. Windle et al.[67] conducted a systematic review and meta-analysis of 29 randomized controlled trials involving a total of 5294 individuals and reported that when patients received the psychosocial care they desired, their therapeutic alliance scores also increased. In the study conducted by Bishop et al.,[68] a strong therapeutic alliance was found to increase patient satisfaction and reduce psychosocial problems. Integrating psychosocial care into the holistic care process evaluated by the nurse in line with the needs of the patient may contribute to the establishment of a high-quality emotional bond with the patient on the way to forming a healthy nurse-patient alliance.

When quality psychosocial care is not provided, undesirable outcomes may occur not only for patients but also for healthcare institutions and nurses. Problems such as nurses experiencing difficulties in establishing and maintaining effective communication with patients and their relatives, increased tension, and dissatisfaction toward work are just a few of these undesirable outcomes.[6] In one study, it was shown that increasing burnout levels negatively affected the quality of care provided to patients.[69] In this study as well, it was determined that as the burnout levels of the participants increased, psychosocial care was negatively affected. Tasks such as answering phones in the clinic, addressing material shortages, and completing files and documents increase the burden on nurses, leading to diminished involvement in patient care and decreases in the quality of care provided, which may cause increases in the burnout levels of nurses and shortcomings in psychosocial care.[28]

Burnout may weaken the therapeutic alliance and affect the creativity and alliance-building abilities of the counselor. This may affect the success of the therapeutic alliance, which plays the leading role in the counselor-patient relationship, and it may lead the counselor to feel inadequate in achieving sufficient personal satisfaction.[70] In this study conducted with nurses, a negative relationship was found between burnout and therapeutic alliance. Rodriguez-Nogueira et al. associated a high-quality therapeutic alliance with low burnout levels.[71] In a study conducted at a mental health institution, increased burnout among mental health workers was associated with decreased therapeutic alliance levels.[72] The results of this study

were consistent with those of other studies in the relevant literature. The lack of suitability of professional working conditions for performing skills such as active listening, providing feedback when the patient needs it, or giving necessary explanations may increase burnout in nurses and hinder the establishment of an effective therapeutic alliance with the patient.[73]

Conclusion and Recommendations

In this study, which was conducted to determine the psychosocial care competence, therapeutic alliance/bond, and burnout levels of nurses, the following results were obtained:

While the psychosocial care competence and burnout levels of nurses were found to be moderate, their therapeutic alliance/bond levels were above moderate. As the psychosocial care competence and therapeutic alliance/bond levels of the nurses increased, their burnout levels decreased. As the education and income levels of the nurses increased, their psychosocial care competence also increased. The nurses who had vocational health high school and associate degrees saw themselves as more competent in establishing a therapeutic alliance/bond with their patients compared to those who had undergraduate education.

In healthcare institutions, awareness-based training can be provided for nurses to include psychosocial care in the stage of providing care to their patients and improve their competence levels and communication skills. During the period when nurses receive undergraduate education, topics related to evaluating the patient psychosocially, providing care, and learning therapeutic communication techniques can be included more in the course curriculum. Adjustments can be made in working hours and the number of personnel to reduce the burnout levels of nurses. Moreover, psychological support can be provided for nurses to develop effective coping strategies in the face of the problems they experience. Activities can be organized to increase the motivation of nurses for work. By improving working conditions, the levels of tension and stress experienced by nurses due to work can be reduced. Future research should include experimental studies on this topic to clearly determine the reasons why nurses place psychosocial care in the background compared to physical care when providing care to their patients, understand the stages of forming a therapeutic bond based on alliance with the patient, better identify the situations that cause burnout, and resolve existing issues.

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Informed Consent: The Google Forms platform was used to obtain consent from nurses who met the inclusion criteria and inform them about the study.

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References

1. Arslan Y, Yazıcı G. Psychosocial care approach of intensive care nurses and the role of consultation liaison psychiatry nursing. Turk J Helath Res 2021;2:29–35. [Article in Turkish]
2. Altan Sarıkaya N, Duva İ. Psychosocial care proficiency self-assessment and related factors of nurses with postgraduate education. J Psy Nurs 2024;15:113–9.
3. Demiray T, Serbest Ş, Er S. Nursing Students' experiences regarding psychosocial care provided to individuals with physical illnesses: A qualitative study. Health Care Acad J 2025;12:59–67. [Article in Turkish]
4. Karataş H, Kelleci M. Psikososyal Bakım Yetkinliği Öz Değerlendirme Ölçeği'nin geliştirilmesi geçerlik ve güvenirlik çalışması. J Psychiatric Nurs 2021;12:263–71. [Article in Turkish]
5. Sırma S, Akın E. Healing care environment in nursing. J Nurs Sci 2024;7:393–403. [Article in Turkish]
6. Tektaş P, Kaçmaz ED, Bingöl U. Determination of nurse's psychosocial care proficiency. Prog Health Sci 2023;13:69–75.
7. Saygın Şahin B, Kutlu FY. Psychosocial caregiving status and proficiency of intensive care nurses: A descriptive and correlational study. Turkiye Klinikleri J Nurs Sci 2024;16:534–43.
8. İnan ŞF. Psychosocial dimension of care. In: Kara KM, Akın E, editors. Basic nursing principles concepts principles practices. İstanbul: İstanbul Tıp Kitapevleri; 2021. p.239–58. [In Turkish]
9. Nunes VV, Feitosa LGGC, Fernandes MA, Almeida CAPL, Ramos CV. Primary care mental health: nurses' activities in the psychosocial care network. Rev Bras Enferm 2020;73(Suppl 1):e20190104. Erratum in: Rev Bras Enferm 2020;73:e202073n6e09. [Article in English, Portuguese]
10. Abu Shosha GM, Al-Kalaldeh M, Shoqirat N. Nurses' experiences of psychosocial care needs of children with thalassaemia and their families in Jordan: A phenomenological study. Nurs Open 2022;9:2858–66.
11. Arslan Y, Yazıcı G. Determination of intensive care nurses' needs for consultation liaison psychiatry nursing in psychosocial care of patients. J General Health Sci 2022;4:92–105. [Article in Turkish]
12. Yıldırım N, Güner P, İnci F. Psychosocial services provided to cancer patients and nurses' difficulties in psychosocial assessment and intervention: A nationwide study research. J Nursology 2024;27:101–10.

13. Coşkun M, Aslan E. The use of emotional freedom technique and psychosocial care in infertile women. Value Health Sci 2024;14:316–20. [Article in Turkish]
14. Kamışlı S. Psychosocial approaches. In: Kamışlı S, Terzioğlu C, Terakye G, editors. Psychosocial nursing approaches I: psychodrama examples. Ankara: Ankara Nobel Tıp Kitapevleri; 2021. p.1–14. [In Turkish]
15. Güvendi Oruç Ö. Nursing competencies and nursing management in Covid-19 period. In: Cizrelioğulları MN, Kılılı R, editors. 4th ECLSS International Online Conference on Economics and Social Sciences. Kıbrıs: Kyrenia Proceedings Book; 2020. p.315–25. [In Turkish]
16. Özcan G, Özkaraman A, Özgenel F. Evaluation of psychological resilience and psychosocial care competencies of oncology nurses: a cross-sectional study. BMC Nurs 2025;24:1272.
17. Demir H, Dinç S. Evaluation of the relationship between communication skills and psychosocial care skills of nurses. J Nursology 2024;27:195–201.
18. Kaplan Uyan T, Soysal S, Çetinkaya D. The relationship between nurses psychosocial care competencies and mental health literacy level. Suleyman Demirel Univ J Health Sci 2024;15:358–67.
19. Belhaj Haddou M, El Mouaddib H, Oumghar N, Khouchani M, Elkhoudri N. Self-assessment of psychosocial care proficiency among nurses and oncologists at the Mohammed VI university hospital center (Morocco). J Cancer Educ 2025;40:551–8.
20. Paul N, Ribet Buse E, Knauthe AC, Nothacker M, Weiss B, Spies CD. Effect of ICU care bundles on long-term patient-relevant outcomes: a scoping review. BMJ Open 2023;13:e070962.
21. Öztürk E, Ayhan H. Basic principles and basic components of psychotherapy. Artuklu İnsan Toplum Bil Derg 2021;6:136–58. [Article in Turkish]
22. Aslan B, Sapmaz Yurtsever S. Terapi sürecinde karşı aktarım ve terapötik ittifakın ilişkisi üzerine sistematik bir gözden geçirme. AYNA Klinik Psikol Derg 2025;12:358–99. [Article in Turkish]
23. Ertürk H, Saygılı S. Therapeutic alliance ruptures as a challenge in psychotherapy process. FSMİA 2024;24:267–98. [Article in Turkish]
24. Sebastião MAG, Delfini G, Weber A, Toledo VP, Garcia APRG. Therapeutic relationship in nurses' work process at psychosocial care centers. SMAD 2024;20:e-213938.
25. El-Abidi K, Moreno-Poyato AR, Cañabate-Ros M, Garcia-Sanchez JA, Lluch-Canut MT, Muñoz-Ruoco E, et al. The therapeutic relationship from the perspective of patients and nurses in the first days of admission: A cross-sectional study in acute mental health units. Int J Ment Health Nurs 2024;33:134–42.
26. Aznar-Huerta A, Moreno-Poyato AR, Cardó-Vila G, Vives-Abril T, Leyva-Moral JM. Understanding the process of acceptance within the nurse-patient therapeutic relationship in mental health care: a grounded theory. Healthcare (Basel) 2024;12:2233.
27. Uzun LN, Senih Mayda A. Investigation of burnout level in nurses according to different variables: Example of a university hospital. Konuralp Tıp Derg 2020;12:137–43. [Article in Turkish]
28. Türe A, Yolbaş B, Bıyık M. Hemşirelikte tükenmişlik. In: Şahna E, Akgül H, editors. Sağlık bilimlerinde güncel araştırmalar-I. Ankara: Gece Kitaplığı; 2022. p.55–70. [In Turkish]
29. Gómez-Urquiza JL, Albendín-García L, Velando-Soriano A, Ortega-Campos E, Ramírez-Baena L, Membrive-Jiménez MJ, et al. Burnout in palliative care nurses, prevalence and risk factors: a systematic review with meta-analysis. Int J Environ Res Public Health 2020;17:7672.
30. Yazıcı MU, Teksam O, Agın H, Erkek N, Arslankoylu AE, Akca H, et al The burden of burnout syndrome in pediatric ıntensive care unit and pediatric emergency department: a multicenter evaluation. Pediatr Emerg Care 2021;37:e955–61.
31. Kazu İY, Yıldırım D. Mesleki tükenmişlik: etki eden faktörler, belirtileri ve sonuçları. JRES 2021;8:462–73. [Article in Turkish]
32. Gezgin Yazıcı H, Çokdinçer S. Hemşirelerde tükenmişlik ve hasta bakım ilişkisi. Cumhuriyet Nurs J 2024;8:136–43. [Article in Turkish]
33. Kekeç D, Tan M. Determination of burnout level of nurses working in intensive care units. OTSBD 2021;6:64–72. [Article in Turkish]
34. Temel B, Erkoç A. Koronavirüs salgını koşullarında hemşirelerde tükenmişlik ve yaşam kalitesi arasındaki ilişki. J Long Life Nurs 2023;4:19–39. [Article in Turkish]
35. Dall'Ora C, Ball J, Reinius M, Griffiths P. Burnout in nursing: a theoretical review. Hum Resour Health 2020;18:41.
36. Kayaoğlu K, Aslanoğlu E. Determination of the relationship between burnout syndrome and compassion fatigue in psychiatric nurses. Türkiye Klinikleri J Nurs Sci 2021;13:676–82. [Article in Turkish]
37. Faul F, Erdfelder E, Lang AG, Buchner A. G*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behav Res Methods 2007;39:175–91.
38. Türkan Aslan Z, Baykara Mat ST. Examining the relationship between compassion fatigue and caregiving behaviors in nurses: A cross sectional study. SHYD 2024;11:362–71. [Article in Turkish]
39. Gülüm IV, Uluç S, Soygüt G. Psychometric properties of the turkish working alliance ınventory-short form. Turk Psikiyatri Derg 2018;29:47–53.
40. Maslach C, Jackson SE, Leiter MP, Schaufeli WB, Schwab RL. Maslach burnout inventory. Consulting Psychologists Press 1986. p.3463–4.
41. Ergin C. Doktor ve hemşirelerde tükenmişlik ve Maslach tükenmişlik ölçeğinin uyarlanması, VII. Ulusal Psikoloji Kongresi. Ankara: Türk Psikologlar Derneği Yayınları; 1992. p.143–54. [In Turkish]
42. Özsoylu S, Akyıldız B, Dursun A. Burnout level of nurses working in a university hospital and factors affecting it. J Pediatr Emerg Intensive Care Med 2017;4:104–9. [Article in Turkish]
43. Xie J, Hunter A, Biesty L, Grealish A. The impact of midwife/nurse-led psychosocial interventions on parents experiencing perinatal bereavement: An integrative review. Int J Nurs Stud 2024;157:104814.
44. Kardaş Ç, Ünlüsoy Dinçer N. Metaphor analysis for holistic nursing care: constructing a puzzle. DEUHFED 2022;15:317–27. [Article in Turkish]

45. Kabataş Yıldız M, Çelik Eren D. Relationship between nurses' psychological preparedness levels for disaster threat and their psychosocial care competencies. SBÜ Hemşirelik Derg 2025;7:153–62. [Article in Turkish]
46. Gerçek A, Okanlı A, Durmuş M. Psychosocial care competencies and compassion fatigue in intensive care nurses: A cross sectional study. J Intensive Care Nurs 2024;28:93–101.
47. Yaşar N, Babaoğlu E. Evaluation of psychosocial care competencies of nurses according to the unit they work in. FBU-JOHS 2025;5(Suppl):85–100.
48. Toluk M, Alagöz E, Afşar F. The relationship between emotional expression skills and psychosocial care competencies among nurses in Turkey: a cross-sectional study. BMC Nurs 2025;24:1229.
49. Yıldırım N, Güner P, İnci F. The level of psychosocial skills of nurses caring for cancer patients and affecting factors results of a multicenter study. Psyho-Onclogie 2024;18:223–31.
50. Arends SAM, Eeltink CM, Ploos van Amstel FK, Oosten AW, Ruijter DC, van der Loo N, et al. Enhancing nurses' communication about psychosocial needs and changes in intimacy and sexuality in patients with advanced cancer: a mixed-method study. Int J Nurs Stud Adv 2025;8:100335.
51. Erçevik R, Bahçecik AN. Investigation of work-related tension and burnout levels in nurses. Sağ Aka Derg 2024;11:586–93. [Article in Turkish]
52. Yusefi AR, Sarvestani SR, Kavosi Z, Bahmaei J, Mehrizi MM, Mehralian G. Patients' perceptions of the quality of nursing services. BMC Nurs 2022;21:131.
53. Hartley S, Raphael J, Lovell K, Berry K. Effective nurse-patient relationships in mental health care: A systematic review of interventions to improve the therapeutic alliance. Int J Nurs Stud 2020;102:103490.
54. Sylvestre A, Gobeil S. The therapeutic alliance: A must for clinical practice. CJSLPA 2020;44:125–36.
55. Moreno-Poyato AR, Rodríguez-Nogueira Ó; MiRTCIME.CAT working group. The association between empathy and the nurse-patient therapeutic relationship in mental health units: a cross-sectional study. J Psychiatr Ment Health Nurs 2021;28:335–43.
56. Yosep I, Mediani HS, Lindayani L. Working alliance among mental health nurses in Indonesia: A comparative analysis of socio-demographic characteristics. Belitung Nurs J 2021;7:125–30.
57. Vaz AM, Ferreira LI, Gelso C, Janeiro L. The sister concepts of working alliance and real relationship: A meta-analysis. Couns Psychol Q 2024;37:247–68.
58. Al-Shammari MZA, Alshammari FZA, Al-Anzi FK, Alanazi YMA, Alshammari KHD, Al-Shammary MZ. Examining the relationship between nurses' emotional intelligence and their ability to establish therapeutic alliances with patients in a community mental health center in Hafr Al-Batin. JICRCR 2024;7:1741–9.
59. Roviralta-Vilella M, Moreno-Poyato AR, Rodríguez-Nogueira Ó, Duran-Jordà X, Roldán-Merino JF; MiRTCIME. CAT Working Group. Relationship between the nursing practice environment and the therapeutic relationship in acute mental health units: A cross-sectional study. Int J Ment Health Nurs 2019;28:1338–46.
60. Köroğlu Ö, Bahar E. Sağlık kurumlarında çalışan hemşirelerin tükenmişlik algılarının işten ayrılma niyetlerine etkisi. J Business Res 2021;13:3453–66. [Article in Turkish]
61. Aydın T, Ağaçdiken Alkan S. In nurses colleague solidarity in COVID-19 pandemia process and burnout status. J Samsun Health Sci 2021;6:11–22. [Article in Turkish]
62. Qedair JT, Balubaid R, Almadani R, Ezzi S, Qumosani T, Zahid R, Alfayea T. Prevalence and factors associated with burnout among nurses in Jeddah: a single-institution cross-sectional study. BMC Nurs 2022;21:287.
63. Rudman A, Arborelius L, Dahlgren A, Finnes A, Gustavsson P. Consequences of early career nurse burnout: A prospective long-term follow-up on cognitive functions, depressive symptoms, and insomnia. EClinicalMedicine 2020;27:100565.
64. Paap D, Karel YHJM, Verhagen AP, Dijkstra PU, Geertzen JHB, Pool G. The working alliance ınventory's measurement properties: a systematic review. Front Psychol 2022;13:945294.
65. Rettig AE, Moore K, Savona E, Scala A. take-a-break intervention: improving oncology nurse Wellness. Clin J Oncol Nurs 2021;25:210–4.
66. Yu J, Jiang C. Enhancing mental health in oncology the role of psychiatric interventions and nurse-patient relationships. Psycho Oncologie 2025;19: 3641.
67. Windle E, Tee H, Sabitova A, Jovanovic N, Priebe S, Carr C. Association of patient treatment preference with dropout and clinical outcomes in adult psychosocial mental health interventions: a systematic review and meta-analysis. JAMA Psychiatry 2020;77:294–302.
68. Bishop F, Al-Abbadey M, Roberts L, MacPherson H, Stuart B, Carnes D, et al. Direct and mediated effects of treatment context on low back pain outcome: a prospective cohort study. BMJ Open 2021;11:e044831.
69. Abraham CM, Zheng K, Norful AA, Ghaffari A, Liu J, Poghosyan L. Primary care practice environment and burnout among nurse practitioners. J Nurse Pract 2021;17:157–62.
70. Cavarretta MV, Pellerin H, Maurel E, Anzalone SM, Truck I, Cohen D, et al. The effectiveness of online therapy in promoting wellbeing and reducing burnout among psychotherapists. Front Psychol 2025;16:1510383.
71. Rodríguez-Nogueira Ó, Leirós-Rodríguez R, Pinto-Carral A, Álvarez-Álvarez MJ, Morera-Balaguer J, Moreno-Poyato AR. Relationship between competency for evidence-based practice and level of burnout of physical therapists with the establishment of the therapeutic relationship. Physiother Theory Pract 2024;40:357–65.
72. D'Addazio M, Poddighe L, Bianchi R, Calza S, Carnevale M, Starace F, et al. Burnout, working alliance, and ward atmosphere: A multisite study of mental health professionals and patients with schizophrenia. Stress Health 2024;40:e3492.
73. Karunarathna I, Aluthge P, Perera N, Gunathilake S, De Alvis K, Gunawardana K, et al. Effective communication strategies for building strong therapeutic alliance through psychotherapy principles. Uva Clinical Anaesthesia and Intensive Care 2024;1–13.

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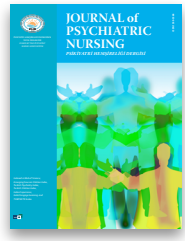

Original Article

Comparison of sexual self-consciousness, self-confidence, self-efficacy, satisfaction, and dyadic adjustment between people living with HIV and HIV-negative individuals: Case–control study

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Abstract

Objectives: HIV is a sexually transmitted virus. After infection, the sexual lives of individuals and their compatibility with their partners may be adversely affected. This study aimed to compare sexual self-consciousness, self-confidence, self-efficacy, sexual satisfaction, and dyadic adjustment between People Living With HIV (PLWH) and HIV-negative individuals.

Methods: This case–control study was conducted with 52 PLWH and 225 HIV(-) individuals between June 1 and July 31, 2022. All individuals were asked to complete the Introductory Information Form, the Sexual Self-Consciousness Scale, the Sexual Self-Confidence Scale, the Sexual Self-Efficacy Scale, the New Sexual Satisfaction Scale, and the Revised Dyadic Adjustment Scale.

Results: In PLWH, the mean scores of sexual self-confidence, sexual self-disclosure, sexual satisfaction, and self-centered sexual satisfaction were found to be significantly lower, whereas the mean score of sexual self-efficacy was higher than those of HIV(-) individuals. It was found that being single, living in an extended family, and living in a city center increased exposure to HIV. It was determined that sexual self-disclosure reduced exposure to HIV, whereas sexual awareness and sexual self-efficacy increased exposure to HIV. In PLWH, sexual self-consciousness was found to negatively affect sexual satisfaction; sexual self-confidence and dyadic adjustment were found to increase sexual satisfaction; and sexual satisfaction was found to positively affect dyadic adjustment.

Conclusion: Living with HIV negatively affects self-confidence and satisfaction related to sexuality. Awareness and self-efficacy regarding sexuality increase, whereas sexual self-disclosure decreases after exposure to HIV. Integrating sexual health counseling that focuses on sexual self-confidence, self-disclosure, and couple dynamics into routine HIV care may contribute to improving sexual satisfaction and relationship adjustment in people living with HIV.

Keywords: HIV; people living with HIV; sexual life; sexuality

Sexuality is one of the most fundamental human needs and plays a central role in individuals' physical, psychological, and social development.[1] An individual's self-perception, capacity to establish emotional intimacy, and the quality of interpersonal relationships are largely associated with the way sexuality is perceived and experienced.[2,3] However, engaging in sexual activity under unsafe conditions may increase the risk of transmission of sexually transmitted infections, particularly HIV.[4] Therefore, sexual behaviors should be considered not only as a biological process but also as a multidimensional phenomenon encompassing psychological and social aspects.[5,6]

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The quality of an individual's sexual behaviors is shaped by psychological constructs such as sexual self-consciousness, sexual shyness, self-expression, and sexual self-efficacy.[7–10] Sexual self-consciousness refers to individuals' perceptions and evaluations of their own sexual life and sexual identity,[8,9] whereas sexual shyness is defined as difficulty in discussing sexual topics and an inability to openly express sexual feelings.[8,9,11] Sexual self-efficacy reflects an individual's belief in their ability to effectively manage sexual emotional responses and behaviors.[10,12] These constructs directly influence individuals' sexual decision-making processes, communication with partners, and their capacity to maintain safer sexual practices. Research indicates that individuals with high levels of sexual shyness tend to remain silent and conceal their sexual problems rather than sharing them.[13–15] This situation may lead to decreased individual sexual satisfaction as well as weakened communication between partners.[16,17] Particularly in societies where open discussion of sexuality is socially and culturally restricted, perceptions of sexuality as "sinful" or "shameful" may contribute to the chronicity of sexual problems.[15,18] Such sociocultural pressures also negatively affect individuals' ability to develop awareness regarding their sexuality and to seek help.[15,18,19] These psychological and cultural dynamics demonstrate that sexuality is not merely an individual experience but also a construct closely associated with health behaviors, risk perception, and interpersonal relationships.[20,21] Maintaining safer sexual behaviors is directly linked to sexual self-consciousness, the ability to express oneself, and perceptions of self-efficacy.[22] In this context, understanding the psychological dimensions of sexuality holds particular importance in relation to sexually transmitted infections, especially chronic, stigma-related conditions such as HIV.[4,23,24]

An individual's self-perception, capacity to establish emotional intimacy, and the quality of interpersonal relationships are largely associated with the way sexuality is perceived and experienced.[25] However, engaging in sexual activity under unsafe conditions may increase the risk of transmission of sexually transmitted infections, particularly HIV.[4,26] Therefore, sexual behaviors should be considered not only as a biological process but also as a multidimensional phenomenon encompassing psychological and social dimensions.[27,28] The quality of an individual's sexual behaviors is shaped by psychological constructs such as sexual self-consciousness, sexual shyness, self-expression, and sexual self-efficacy.[7–10,12,29,30] These constructs directly influence individuals' sexual decision-making processes, communication with partners, and their capacity to maintain safer sexual practices.[31] Studies indicate that individuals with high levels of sexual shyness tend to remain silent and conceal their sexual problems rather than sharing them.[32,33] This situation may lead to decreased individual sexual satisfaction as well as weakened communication between partners.[34] Particularly in societies where open discussion of sexuality is socially and culturally restricted, sexual problems may become chronic.[35,36] Such sociocultural pressures also negatively affect individuals' ability to develop awareness regarding their sexuality and their help-seeking behaviors.[37,38] These psychological and cultural dynamics demonstrate that sexuality is not merely an individual experience but also a construct closely associated with health behaviors, risk perception, and interpersonal relationships.[39] Maintaining safer sexual behaviors is particularly important in relation to individuals' sexual self-consciousness, self-expression skills, and perceptions of self-efficacy.[40,41] In this context, understanding all dimensions of sexuality holds significant importance in relation to chronic and stigma-associated conditions such as HIV.

What is presently known on this subject?

- There is a widespread perception that the sexual lives of people living with HIV (PLWH) are negatively affected and that couple compatibility may be impaired. In addition, due to the stigma associated with sexually transmitted infections, PLWH may tend to conceal their diagnosis and avoid open sexual communication within relationships.

What does this article add to the existing knowledge?

- This study showed that PLWH had lower sexual self-confidence, higher sexual self-efficacy, and lower sexual satisfaction compared with HIV-negative individuals. While awareness and self-efficacy regarding sexuality appeared to increase after diagnosis, sexual self-disclosure decreased. Moreover, higher levels of sexual self-consciousness were associated with reduced sexual satisfaction among PLWH, highlighting the complex psychosocial dimensions of sexuality in this population.

What are the implications for practice?

- The findings suggest that sexual health assessment in PLWH should extend beyond virological suppression, antiretroviral therapy adherence, and condom use. Comprehensive counseling approaches that include partners may help address reduced sexual self-confidence and satisfaction. Integrating tailored sexual health education and psychosocial support into routine HIV care could improve overall sexual well-being and relationship dynamics.

HIV/AIDS remains a major public health concern worldwide as one of the most significant sexually transmitted infections affecting individuals across all age groups. Current global estimates indicate that approximately 40 million people are living with HIV worldwide and that millions of new infections are reported each year, highlighting that HIV continues to pose a substantial and ongoing global health burden.[4] This situation is important not only for understanding the medical impact of HIV but also for emphasizing the psychosocial and relational challenges experienced by people living with HIV (PLWH), particularly in the context of sexuality and intimate relationships.[42,43] Risky sexual behaviors, such as inconsistent condom use and limited communication between partners, remain among the primary factors contributing to HIV transmission.[44] Although advances in antiretroviral therapy have transformed HIV into a manageable chronic condition and significantly reduced transmission risk, PLWH may continue to experience concerns related to sexual confidence, self-disclosure, stigma, and relationship dynamics.[45] Therefore, contemporary HIV

care increasingly extends beyond biomedical management and emphasizes holistic, biopsychosocial approaches that include sexual health counseling, partner involvement, and regular psychosocial assessments.[46,47] In this context, understanding the multidimensional aspects of sexuality—such as sexual self-consciousness, sexual confidence, sexual self-efficacy, sexual satisfaction, and dyadic adjustment—has become critically important.

Global prevalence data indicate that the number of individuals maintaining long-term intimate relationships while living with HIV is increasing; this trend highlights the need for research that examines not only risky behaviors but also the psychological and relational dimensions of sexual well-being.[48,49] This perspective provides an important theoretical framework for the present study, which aims to contribute to a more comprehensive understanding of sexuality among people living with HIV (PLWH).[50] In certain sociocultural contexts where open discussion of sexuality is limited, studies suggest that PLWH may experience social expectations or internalized beliefs that restrict sexual expression.[51] HIV-related stigma, fear of self-disclosure, and concerns about negative judgment may influence how PLWH perceive and express their sexuality, often leading to the concealment of sexual needs and reduced openness within intimate relationships.[52] Rather than being explained solely by individual preferences, this tendency is described in the literature as a psychosocial response shaped by stigma, discrimination, and cultural norms surrounding HIV and sexuality.[24,42] Although numerous studies have examined different dimensions of sexuality among PLWH, research that simultaneously investigates sexual self-consciousness, sexual behaviors, and dyadic adjustment with a sexual partner within the same theoretical framework remains limited. The existing literature has largely focused on specific outcome variables such as sexual function, condom use, or risk behaviors, whereas psychological and relational dimensions have generally been addressed independently.[24] This fragmented approach makes it difficult to fully understand the dynamic and multilayered interaction between the psychological components of sexuality (e.g., sexual self-consciousness and sexual self-confidence) and relational processes (e.g., dyadic adjustment and partner interaction). Consequently, this gap in the literature restricts a holistic evaluation of sexual well-being among PLWH and highlights the need for research that conceptualizes sexuality as a multidimensional construct. In line with this need, the present study was designed to examine sexual self-consciousness, sexual self-confidence, sexual self-efficacy, sexual satisfaction, and dyadic adjustment simultaneously, aiming to complement the fragmented perspective in the literature with a more holistic model. Furthermore, the case–control design of the study enables comparison with a control group sharing similar sociodemographic characteristics with PLWH, thereby allowing clearer interpretation of observed differences. In this way, the study seeks to generate stronger and more comparative evidence to inform both clinical practice and sexual health counseling. Therefore, this study aimed to compare sexual self-consciousness, self-confidence, self-efficacy, sexual satisfaction, and dyadic adjustment between people living with HIV (PLWH) and HIV-negative individuals.

Research Questions

- Is there a significant difference in the total and subscale mean scores of the Sexual Self-Consciousness Scale (SCS) between PLWH and HIV-negative individuals?
- Is there a significant difference in the total and subscale mean scores of the Sexual Self-Confidence Scale (SSCS) between PLWH and HIV-negative individuals?
- Is there a significant difference in the mean scores of the Sexual Self-Efficacy Scale (SSES) between PLWH and HIV-negative individuals?
- Is there a significant difference in the total and subscale mean scores of the New Sexual Satisfaction Scale (NSSS) between PLWH and HIV-negative individuals?
- Is there a significant difference in the total and subscale mean scores of the Revised Dyadic Adjustment Scale (RDAS) between PLWH and HIV-negative individuals?
- When considered together, how do sociodemographic characteristics; the total and subscale mean scores of the Sexual Self-Consciousness Scale; the total and subscale mean scores of the Sexual Self-Confidence Scale; the mean score of the Sexual Self-Efficacy Scale; the total and subscale mean scores of the New Sexual Satisfaction Scale; and the total and subscale mean scores of the Revised Dyadic Adjustment Scale affect exposure to HIV?
- When considered together, how do sexual self-consciousness, sexual self-confidence, sexual self-efficacy, and dyadic adjustment affect sexual satisfaction?
- When considered together, how do sexual self-consciousness, sexual self-confidence, sexual self-efficacy, and sexual satisfaction affect dyadic adjustment?

Materials and Method

Research Type

This is a case–control study.

Research Setting and Period

This study was carried out in the Infectious Diseases Outpatient Clinic of Şanlıurfa Training and Research Hospital between June 1, 2022, and July 31, 2022.

Research Variables

Dependent variables: The mean scores of the Sexual Self-Consciousness Scale, Sexual Self-Confidence Scale, Sexual Self-Efficacy Scale, New Sexual Satisfaction Scale, Revised Dyadic Adjustment Scale, and living with HIV status.

Independent variables: Descriptive characteristics of PLWH and HIV-negative individuals.

Population and Sample

The study population consisted of individuals who applied to the Infectious Diseases Outpatient Clinic of the hospital. A total of 136 HIV-positive cases who applied to the clinic for treatment between June 1, 2022, and July 31, 2022, were included in the study. The number of HIV-negative individuals who applied to the clinic during this period was 349. The sample size was calculated using G*Power version 3.1. In this case–control study, for the two-tailed comparison of mean values between two independent groups, a Type I error rate of 0.05, a statistical power of 0.80, and a medium effect size (Cohen's d=0.50) were assumed. The group allocation ratio (N2(control)/N1(case)) was set at 4; accordingly, the minimum required sample size was calculated as 40 participants for the case group (PLWH) and 160 participants for the control group, resulting in a total sample size of 200.[53,54] A total of 277 individuals were included, 52 of whom were living with HIV in the case group and 225 were HIV(-) individuals in the control group. Each HIV(-) individual who was similar in terms of sex and age group variables, providing at least four times the number of individuals living with HIV, was selected using a simple randomization method and included in the control group. Data were collected through face-to-face interviews with individuals. The interviews with the participants lasted 15–20 minutes on average.

In case–control studies, especially when the case group is rare or difficult to access, increasing the size of the control group is a recommended sampling strategy to enhance statistical power. In epidemiological research, increasing the control-to-case ratio up to 4:1 is known to contribute to more precise estimation of effect sizes, reduce standard error, and decrease the likelihood of Type II error. In the present study, the number of people living with HIV who were under regular follow-up during the study period was limited; therefore, it was not feasible to expand the case group. Instead, the control group was intentionally enlarged to strengthen the power of between-group comparisons and to ensure the stability of parameter estimates in regression analyses. During the G*Power analysis, the group allocation ratio (N2/N1) was set at 4, and the sample size was calculated based on this assumption. Accordingly, HIV-negative individuals with similar age and sex characteristics were selected using a simple random sampling method, and the control group was formed to be at least four times larger than the case group. Thus, methodological efficiency was maintained while the statistical reliability of comparative analyses was improved despite the limited number of cases.

Inclusion and Exclusion Criteria

Inclusion criteria comprised people living with HIV (PLWH) who were aware of their HIV diagnosis, receiving regular antiretroviral therapy, virologically suppressed, and not using antidepressant treatment, as well as HIV-negative individuals. All PLWH were under routine clinical follow-up; therefore, they were assumed to have received standard counseling and information regarding HIV infection as part of regular care. Individuals who were married or had a sexual partner and who voluntarily agreed to participate were included in the study. Exclusion criteria comprised individuals who did not meet the inclusion criteria; those who were unaware of their HIV diagnosis or were not under regular clinical follow-up; individuals receiving antidepressant treatment; those without a spouse or sexual partner; individuals with communication difficulties that could interfere with completing the questionnaires; participants who provided incomplete or insufficient responses in the data collection instruments; and those who declined to participate in the study. The flow chart of the inclusion process of the individuals is given in Figure 1.

Data Collection Tools

Introductory Information Form

This form, developed by the researchers, consists of a total of 13 questions assessing the sociodemographic characteristics of individuals.

Sexual Self-Consciousness Scale (SCS)

This form was developed by van Lankveld et al.[9] and adapted into Turkish by Celik This scale consists of 12 items in a five-point Likert-type format and includes two subdimensions (sexual shyness and sexual self-focus).[8,9] In the score calculation of the scale, a minimum score of 0 and a maximum score of 42 points can be obtained. Higher scores obtained from the scale indicate higher levels of sexual self-consciousness. Increased scores in the sexual shyness subdimension reflect greater sexual inhibition, whereas higher scores in sexual self-focus indicate increased attention toward one's own sexual experiences. The Cronbach alpha coefficient was determined as 0.85 by van Lankveld et al.[9] and 0.83 by Celik in the Turkish version.[8,9] In this study, it was found to be 0.84.

Sexual Self-Confidence Scale (SSCS)

It was developed by Celik and is a four-point Likert-type scale consisting of 13 items and three subdimensions (self-disclosure, courage, and awareness). In the score calculation of the scale, a minimum of 13 and a maximum of 52 points can be ob-

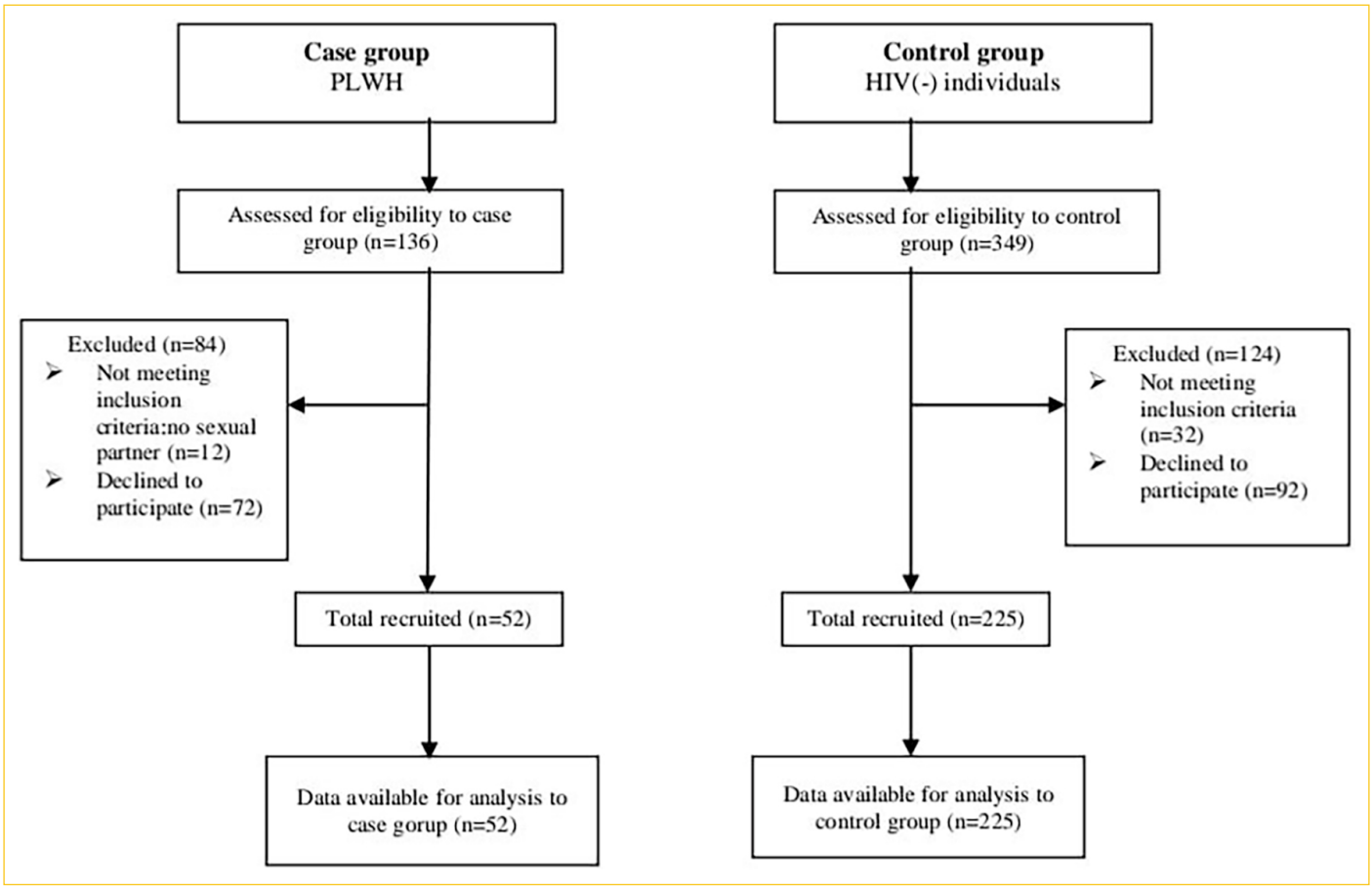

Figure 1. Flow chart of the selection process of individuals included in the case and control group.

PLWH: People living with HIV.

tained.[29] Higher total scores indicate greater sexual self-confidence. Higher scores in the subdimensions of self-disclosure, courage, and awareness reflect greater openness in sexual expression, increased sexual courage, and enhanced awareness regarding sexuality. The Cronbach alpha coefficient was reported as 0.88 by Celik.[29] In this study, it was found to be 0.91.

Sexual Self-Efficacy Scale (SSES)

It was developed by Humphreys & Kennett and adapted into Turkish by Celik. This scale consists of five items and is a Likert-type scale. A minimum of 5 and a maximum of 40 points can be obtained.[12,55] Higher scores obtained from the scale indicate greater perceived sexual self-efficacy, whereas lower scores reflect reduced confidence in managing sexual situations. The Cronbach alpha value was determined as 0.83 by Humphreys & Kennett and 0.71 by Celik.[12,55] In this study, it was found to be 0.66.

New Sexual Satisfaction Scale (NSSS)

It was developed by Stulhofer et al.[56] and adapted into Turkish by Tuğut. This scale is a five-point Likert-type scale consisting of 20 items and two subdimensions (self-centered and spousal/partner sexual activity–centered). In the score calculation of the scale, a minimum of 20 and a maximum of 100 points can be obtained.[57] Higher total scores represent higher levels of sexual satisfaction. The self-centered and partner-centered subdimensions reflect satisfaction related to individual sexual experiences and partner-related sexual interaction, respectively. The Cronbach alpha value was reported as 0.95 by Stulhofer et al.[56] and 0.94 by Tuğut.[57] In this study, it was found to be 0.96.

Revised Dyadic Adjustment Scale (RDAS)

It was developed by Spanier[58] and revised by Busby et al.[59] This scale was adapted into Turkish by Bayraktaroğlu & Çakıcı.[58–60] This scale consists of 14 items and three subdimensions (satisfaction, consensus, conflict). In the score calculation of the scale, a minimum of 14 and a maximum of 70 points can be obtained. Higher total scores indicate better dyadic adjustment and relationship quality. Increased scores in the satisfaction and consensus subdimensions reflect stronger relationship harmony, whereas higher conflict scores indicate lower relational compatibility. The Cronbach alpha value was found to be 0.87 by Busby et al.[59] and 0.88 by Bayraktaroğlu & Çakıcı.[59,60] In this study, it was found to be 0.85.

Statistical Analysis

Data were analyzed using SPSS 26.0 (IBM SPSS Statistics Version 26, SPSS Inc., Chicago, Illinois, USA, 2019). Descriptive statistics were expressed as number (percentage) for categorical variables and mean±standard deviation for continuous variables. The Kolmogorov–Smirnov test and visual inspections (histograms and normality plots) were used to evaluate the normality of continuous data distributions. For comparisons between two independent groups, the Independent Samples t-test was used for normally distributed continuous variables. The chi-square test was applied to examine associations between categorical variables. Binary logistic regression analysis (enter method) was performed to identify factors associated with living with HIV status. In addition, regression analyses were conducted within the PLWH group to determine variables affecting sexual outcomes. Before regression analyses, model assumptions were evaluated, including multicollinearity among independent variables. Results of regression analyses were reported using odds ratios (OR) with 95% confidence intervals (CI). All statistical tests were two-tailed, and statistical significance was set at $p<0.05$ with a 95% confidence level.

Ethical Consideration

Ethics committee approval was obtained from the Muş Alparslan University Scientific Research and Publication Ethics Committee (Date: 31.05.2022, No: 8/19), and institutional permission was obtained from Şanlıurfa Training and Research Hospital (Date: 12.04.2022). All procedures were conducted in accordance with the principles of the Declaration of Helsinki. All participants were fully informed about the purpose and procedures of the study, and written and verbal informed consent was obtained prior to participation. The anonymity and confidentiality of all participants were carefully protected; no personal identifying information was collected, and the data were used solely for scientific purposes.

Results

It was determined that there was a significant difference between PLWH and HIV(-) individuals in terms of marital status (p=0.01), family type (p=0.004), and longest-lived place (p=0.002). Accordingly, it was determined that PLWH were more likely to be single, have an extended family structure, and spend the longest time in the city center compared with HIV(-) individuals (Table 1).

A significant difference was determined between the SSCS, SSCS self-disclosure, SSES, NSSS, and NSSS self-centered mean scores of PLWH and HIV(-) individuals ($p<0.05$). Accordingly, the mean scores of sexual self-confidence, self-disclosure, satisfaction, and self-centered satisfaction of PLWH were found to be significantly lower, whereas the mean scores of sexual self-efficacy were higher than those of HIV(-) individuals (Table 2).

The results of logistic regression analyses between living with HIV, selected sociodemographic variables, sexual self-consciousness, self-confidence, self-efficacy, satisfaction, and dyadic adjustment are shown in Table 3. A total of 47.0% of the dependent variable was explained by the independent variables ($p<0.01$). Accordingly, being single (OR=8.34), living in an extended family (OR=2.90), living in a city center (OR=3.58), sexual awareness (OR=1.52), and sexual self-efficacy (OR=1.16) had a positive effect on HIV-positive status, whereas sexual self-disclosure (OR=0.83) negatively affected HIV-positive status ($p<0.05$) (Table 3).

In PLWH, sexual self-consciousness was found to negatively affect satisfaction (p=0.04), whereas self-confidence and dyadic adjustment positively affected satisfaction (p=0.01). It was also determined that satisfaction positively affected dyadic adjustment (p=0.01) (Table 4).

Discussion

In this study, people living with HIV (PLWH) were found to have lower levels of sexual self-confidence, sexual self-disclosure, and sexual satisfaction compared with HIV-negative individuals; however, no significant differences were observed between the groups in terms of mean scores for sexual self-consciousness and dyadic adjustment. Notably, the decrease in sexual satisfaction among the PLWH group was particularly pronounced in the ego-centered dimension, whereas partner-centered satisfaction remained at a similar level. Furthermore, the higher levels of sexual self-efficacy observed among PLWH suggest that the experience of living with HIV may have an empowering effect in certain areas related to sexual behaviors. These findings indicate that the impact of HIV on sexuality and relationship dynamics is not unidirectional but may vary across different psychosocial dimensions.

Sociodemographic Characteristics and HIV Exposure

In this study, being single, living in an urban center, and having an extended family structure were found to be associated with HIV exposure. Similarly, the literature suggests that unmarried individuals may be more prone to risky sexual behaviors due to greater partner turnover and broader social networks.[61–63] Living in urban centers is also considered a factor that may increase risk behaviors, as individuals have greater access to entertainment environments and more frequent social interactions.[64] These findings highlight not only behavioral risks but also the influence of sociocultural context on the way sexuality is experienced. In particular, limited pri-

Table 1. Comparison of sociodemographic characteristics of case and control group

Sociodemographic characteristics	Case = HIV(+) (n=52)	Control = HIV(-) (n=225)	Statistical analysis	
	% (n)	% (n)	Test	p
Age, mean (±SD)	33.1 (±8.4)	31.5 (±7.2)	t=1.3	0.16
Age group			X^2=3.13	0.20
25 and below	11.5 (6)	20.9 (47)		
26-35	59.6 (31)	58.2 (131)		
36 and over	28.8 (15)	20.9 (47)		
Sex			X^2=0.19	0.65
Female	17.3 (9)	20.0 (45)		
Male	82.7 (43)	80 (180)		
Marital status			X^2=6.62	**0.01**
Married	67.3 (35)	83.1 (187)		
Single	32.7 (17)	16.9 (38)		
Family type			X^2=8.17	**0.004**
Nuclear	55.8 (29)	75.6 (170)		
Extended	44.2 (23)	24.4 (55)		
Longest lived place			X^2=12.80	**0.002**
City center	73.1 (38)	51.6 (116)		
Town district	7.7 (4)	32.0 (72)		
Village	19.2 (10)	16.4 (37)		
Education status			X^2=2.96	0.81
Literate and below	3.8 (2)	7.1 (16)		
Primary school	7.7 (4)	5.8 (13)		
Middle school	15.4 (8)	10.7 (24)		
High school	28.8 (15)	24.9 (56)		
Two-year Undergraduate	9.6 (5)	15.1 (34)		
Undergraduate	28.8 (15)	30. (68)		
Master degree and above	5.8 (3)	6.6 (14)		
Social security			X^2=0.11	0.73
Yes	80.8 (42)	78.7 (177)		
No	19.2 (10)	21.3 (48)		
Working status			X^2=0.22	0.63
Working	73.1 (38)	69.8 (157)		
Not working	26.9 (14)	30.2 (68)		
Income status			X^2=1.76	0.41
Income<Expense	26.9 (14)	25.8 (58)		
Income=Expense	53.8 (28)	46.2 (104)		
Income>Expense	19.2 (10)	28.0 (63)		

p<0.05 is statistically significance value. t: Independent sample t test, X^2=Chi-square, SD: Standard deviation.

vacy within extended family structures may lead individuals to experience their sexual identity and relationships more privately, which can complicate the planning of safer sexual behaviors. From this perspective, the study contributes to the existing literature by demonstrating that HIV risk is associated not only with individual choices but also with characteristics of the social environment.

Sexual Self-Consciousness

In this study, no statistically significant difference was found between people living with HIV (PLWH) and HIV-negative individuals in terms of total sexual self-consciousness scores or subdimension means. This finding suggests that an HIV diagnosis may not always directly alter individuals' internal aware-

Table 2. Comparison of the mean scores of Sexual Self-Consciousness Scale, Sexual Self-Confidence Scale, Sexual Self-Efficacy Scale, New Sexual Satisfaction Scale and Revised Dyadic Adjustment Scale of case and control group

Scales	Case = HIV(+) (n=52)	Control = HIV(-) (n=225)	Statistical analysis			
	Mean (±SD)	Mean (±SD)	t Test	p	%95 CI	
					Lower	Upper
SCS	22.4 (±9.8)	23.5 (±8.9)	-0.77	0.44	-3.85	1.6
Sexual embarrassment	8.8 (±6.4)	9.1 (±5.8)	-0.23	0.81	-2.02	1.5
Sexual self-focus	13.5 (±5.1)	14.4 (±4.9)	-1.13	0.25	-2.37	0.63
SSCS	37.0 (±8.9)	39.7 (±7.6)	-2.02	**0.04**	-5.36	-0.03
Sexual self-disclosure	18.4 (±5.9)	21.4 (±4.7)	-3.46	**0.001**	-4.84	-1.29
Sexual courage	8.8 (±2.6)	8.9 (±2.3)	-0.10	0.91	-0.78	0.70
Sexual awareness	9.7 (±1.9)	9.3 (±1.9)	1.36	0.17	-0.17	0.99
SSES	32.3 (±6.3)	27.0 (±6.1)	5.5	**0.001**	3.40	7.15
NSSS	67.7 (±20.3)	74.4 (±14.6)	-2.24	**0.02**	-12.67	-0.74
Self-centered	33.7 (±11.0)	37.3 (±7.7)	-2.27	**0.02**	-6.89	-0.44
Spousal/partner sexual activity centered	34.0 (±10.5)	37.0 (±8.1)	-1.94	0.05	-6.17	0.08
RDAS	47.5 (±8.5)	48.5 (±7.6)	-0.85	0.39	-3.38	1.33
Satisfaction	17.8 (±3.4)	18.5 (±3.2)	-1.36	0.17	-1.70	0.30
Consensus	23.5 (±4.9)	23.6 (±4.5)	-0.07	0.94	-1.44	1.34
Conflict	10.2 (±2.1)	10.4 (±1.9)	-0.65	0.51	-0.80	0.40

p<0.05 is statistically significance value. SCS: Sexual self-consciousness scale, SSCS: Sexual self-confidence scale, SSES: Sexual self-efficacy scale, NSSS: New sexual satisfaction scale, RDAS: Revised dyadic adjustment scale, SD: Standard deviation, t: independent sample t test, CI: Confidence interval.

ness of their sexuality. The literature indicates that sexual self-consciousness is shaped not only by illness experiences but also by broader psychosocial factors such as personality traits, sociocultural norms, and the meanings individuals attribute to sexuality.[15,65] Although stigma and anxiety processes among PLWH have been proposed to influence sexual self-perception, individuals who receive regular treatment and remain under clinical follow-up may develop a more balanced perception of sexuality over time.[24,66] The fact that the study sample consisted of individuals receiving regular antiretroviral therapy and who were virologically suppressed may explain why sexual self-consciousness levels were similar to those of the HIV-negative group. This finding suggests that the transformation of HIV into a biomedically manageable chronic condition may limit potential negative effects on sexual self-perception. On the other hand, the absence of differences in sexual self-consciousness scores does not imply that the psychological processes related to sexuality among PLWH remain entirely unaffected. Sexual self-consciousness is a multidimensional construct influenced by factors such as stigma, cultural norms, and partner relationships.[67–69] Therefore, the lack of significant differences between groups in this study may indicate that sexual self-consciousness is more strongly associated with individual and sociocultural variables than with HIV status itself.

Sexual Self-Confidence

In this study, people living with HIV (PLWH) were found to have lower levels of sexual self-confidence compared with HIV-negative individuals. Sexual self-confidence is closely associated with an individual's ability to express their sexuality, feel competent in sexual situations, and establish secure communication with a partner.[29] Previous studies have shown that the experience of sexually transmitted infections may negatively affect sexual self-perception by increasing fear of stigma, feelings of guilt, and concerns about rejection.[42,65,70] In this context, the decrease in sexual self-confidence following an HIV diagnosis may be related not only to physical health concerns but also to processes of social judgment and internalized stigma. After receiving an HIV diagnosis, individuals may feel a heightened responsibility to protect their partners and may adopt more cautious behaviors in sexual situations to avoid potential negative reactions. When considered alongside reduced sexual self-confidence, this suggests that HIV may exert a significant psychosocial impact on individuals' sexual self-perception and interpersonal communication processes. In contrast, higher levels of sexual self-confidence among HIV-negative individuals may be explained by the absence of illness-related stigma and the experience of sexual communication as a less anxiety-provoking process.

Table 3. Binary Logistic Regression Analysis Between Status Living with HIV, Some Sociodemographic Variables, Sexual Self-Consciousness, Sexual Self-Confidence, Sexual Self-Efficacy, Sexual Satisfaction and Dyadic Adjustment of Individuals

Factors associated with status living with HIV	B	p	OR	95% CI	
				Lower	Higher
Age	0.05	0.10	1.05	0.990	1.122
Sex (male)	-1.05	0.14	0.34	0.084	1.435
Marital status (single)	2.12	**0.01**	8.34	2.267	30.700
Family type (extended)	1.06	**0.027**	2.90	1.128	7.470
Where she/he spent the longest time of her life (city center)	1.27	**0.01**	3.58	1.362	9.443
Education status (high school and above)	-0.21	0.70	0.81	0.269	2.442
Social security status (no)	0.17	0.78	1.19	0.334	4.258
Working status (no)	-1.12	0.08	0.32	0.091	1.161
Economic status (income is equal to expense or more than expense)	-0.07	0.88	0.93	0.350	2.470
Sexual self-consciousness: *Sexual Embarrassment*	-0.03	0.38	0.96	0.880	1.050
Sexual self-consciousness: *Sexual Self-Focus*	0.006	0.90	1.006	0.916	1.105
Sexual self-confidence: *Sexual Self-Disclosure*	-0.17	**0.01**	0.83	0.738	0.947
Sexual self-confidence: *Sexual Courage*	-0.09	0.37	0.91	0.742	1.119
Sexual self-confidence: *Sexual Awareness*	0.41	**0.01**	1.52	1.120	2.062
Sexual self-efficacy	0.15	**0.01**	1.16	1.085	1.246
Sexual satisfaction: *Self-Centered*	-0.06	0.12	0.94	0.873	1.016
Sexual satisfaction: *Spousal/Partner Sexual Activity Centered*	-0.05	0.19	0.95	0.880	1.027
Dyadic adjustment: *Satisfaction*	0.31	0.27	1.36	0.778	2.394
Dyadic adjustment: *Consensus*	0.39	0.21	1.49	0.792	2.808
Dyadic adjustment: *Conflict*	0.14	0.65	1.15	0.622	2.137
Dyadic adjustment	-0.28	0.36	0.75	0.410	1.382
Constant	-6.28	**0.01**	0.002		
Statistical analysis Chi-square=95.274, df=21, p<0.01, Nagelkerke R Square=0.470					

p<0.05 is statistically significance value. OR: Odds ratio, B: Unstandardized coefficients, OR: Odds ratio, CI: Confidence Interval.

In this study, people living with HIV (PLWH) were found to have statistically significantly lower levels of sexual self-disclosure compared with HIV-negative individuals. Sexual self-disclosure refers to an individual's capacity to share sexual feelings, thoughts, expectations, and boundaries with a partner and is considered a fundamental component of healthy relationship dynamics and sexual satisfaction.[71] This finding suggests that an HIV diagnosis may exert a constraining effect on individuals' sexual communication processes. The literature indicates that HIV-related stigma, the obligation to disclose one's status to a partner, fear of rejection, and concerns about transmission may reduce individuals' willingness to express themselves in sexual contexts.[72] In this regard, PLWH may adopt a more cautious and controlled approach to sexual communication due to a perceived responsibility to protect their partners or to avoid potential negative reactions. This tendency can be interpreted as an important psychosocial mechanism contributing to reduced sexual self-disclosure. On the other hand, although sexual awareness levels in this study were associated with HIV exposure, the lower levels of self-disclosure suggest that increased awareness of sexual experiences among PLWH does not always translate into open communication. While heightened awareness may be related to increased risk perception and more careful evaluation of sexual behaviors, societal stigma and internalized concerns may suppress the expression of this awareness at the level of communication. The higher levels of sexual self-disclosure observed among HIV-negative individuals may be explained by the absence of illness-related stigma, reduced fear of rejection, and the ability to establish partner communication within a less threatening context. This comparative finding highlights an important advantage of the case–control design and allows the specific effects of HIV on sexual communication processes to be more clearly understood.

Sexual Self-Efficacy

One of the notable findings of this study was that people living with HIV (PLWH) demonstrated higher levels of sexual self-efficacy compared with HIV-negative individuals. Although studies directly examining sexual self-efficacy re-

Table 4. Findings related to multiple linear logistic regression analysis regarding sexual satisfaction and dyadic adjustment in case group (PLWH)

Independent variable	Dependent variable = Sexual satisfaction				
				95% CI for B	
	B	t	p	Lower	Upper
Sexual self-consciousness	-0.17	-2.04	**0.04**	-0.719	0.005
Sexual self-confidence	0.35	3.82	**0.01**	0.381	1.226
Sexual self-efficacy	0.02	0.18	0.85	-0.524	0.627
Dyadic adjustment	0.55	5.78	**0.01**	0.869	1.795
Constant		-1.41	0.16	45.668	8.002
Statistical analysis	R=0.816 Adjusted R^2=0.665 F=23.329 p<0.01, Durbin - Watson=2.020				
Independent variable	**Dependent variable = Dyadic adjustment**				
				95% CI for B	
	B	t	p	Lower	Upper
Sexual self-consciousness	0.09	0.95	0.34	-0.09	0.263
Sexual self-confidence	-0.06	-0.53	0.59	-0.296	0.171
Sexual self-efficacy	0.15	1.47	0.14	-0.073	0.472
Sexual satisfaction	0.74	5.78	**0.01**	0.204	0.421
Constant		3.44	**0.01**	8.431	32.153
Statistical analysis	R=0.742 Adjusted R^2=0.550 F=14.359 p<0.01, Durbin - Watson=1.688				

p<0.05 is statistically significance value. B: Standardized coefficient, CI: Confidence Interval.

main limited, research focusing on condom-use self-efficacy and safer sexual behaviors suggests that following an HIV diagnosis, individuals may develop enhanced self-regulation skills and increased awareness of risk management related to protective behaviors.[30,41] This finding indicates that the experience of living with HIV may reshape individuals' cognitive evaluations of their sexual behaviors. At first glance, this result may appear contradictory when considered alongside lower levels of sexual self-confidence; however, it can be explained by the fact that self-efficacy reflects a cognitive belief associated with risk avoidance and behavioral control. Increased contact with healthcare services after diagnosis, participation in counseling and educational processes, and a heightened sense of responsibility to reduce transmission risk may strengthen perceptions of sexual self-efficacy among PLWH. In this context, higher sexual self-efficacy may reflect not greater confidence in sexual performance but rather a perceived capacity to maintain safer behaviors and protect one's partner. Furthermore, the elevated self-efficacy levels observed among PLWH may be interpreted as an adaptive mechanism through which the experience of chronic illness enhances individuals' sense of behavioral control. This interpretation underscores that sexuality in the context of HIV should be understood not only in terms of performance or satisfaction but also as a multidimensional construct related to responsibility, risk management, and health behaviors.

Sexual Satisfaction and Relational Dynamics

In this study, people living with HIV (PLWH) were found to have lower overall levels of sexual satisfaction compared with HIV-negative individuals. When subdimensions were examined, a significant difference was observed particularly in ego-centered sexual satisfaction scores between the groups, whereas no significant difference was found in partner-centered sexual satisfaction. This finding suggests that the experience of living with HIV may influence individuals' subjective evaluation of their sexual experiences, while not necessarily altering partner-focused relational perceptions to the same extent. The literature indicates that sexual satisfaction among PLWH may decrease due to experiences of stigma, concerns related to disclosing HIV status to a partner, fear of transmission, and relational stressors.[48,49,73] The lower levels of ego-centered sexual satisfaction, in particular, may reflect more critical internal evaluations of one's body, performance, or sexual adequacy following an HIV diagnosis. Increased self-monitoring tendencies and potential performance-related anxiety may reduce spontaneity in sexual experiences, thereby negatively affecting individual satisfaction. In contrast, the absence of differences in partner-centered sexual satisfaction scores suggests that emotional attachment, empathy toward the partner, or perceptions of relational satisfaction among PLWH may remain comparable to those of HIV-negative individuals. This finding indicates that an HIV diagnosis does not necessarily

weaken dyadic dynamics; in some cases, the sense of responsibility to protect a partner and maintain relational commitment may help preserve partner-focused satisfaction. Indeed, the literature suggests that although chronic illness experiences may influence individual sexual perceptions, relational closeness and emotional bonds can remain relatively stable.[74] Furthermore, within the PLWH group, sexual self-consciousness was found to negatively predict sexual satisfaction, whereas sexual self-confidence showed a positive effect. Higher sexual self-consciousness may increase individuals' tendency to continuously monitor and evaluate themselves, thereby reducing ego-centered satisfaction; conversely, greater sexual self-confidence may enhance both overall satisfaction and subjective sexual experience by fostering feelings of competence and acceptance. The higher levels of overall and ego-centered satisfaction observed among HIV-negative individuals may be explained by the absence of chronic illness–related concerns and transmission responsibility. These findings demonstrate that sexual satisfaction is not a unidimensional construct; rather, individual perceptions and relational dynamics may be affected at different levels. Accordingly, interventions aimed at enhancing sexual satisfaction among PLWH should extend beyond biomedical treatment and incorporate psychological support that strengthens subjective sexual experiences, as well as couple-focused counseling approaches.

Dyadic Adjustment and the Contribution of a Multidimensional Approach

In this study, no statistically significant difference was found between people living with HIV (PLWH) and HIV-negative individuals in terms of total dyadic adjustment scores or the mean scores of dyadic adjustment subdimensions. This finding suggests that an HIV diagnosis may not always directly and negatively affect relational domains such as relationship satisfaction, partner consensus, emotional intimacy, and joint functioning. The absence of differences at the subdimension level is particularly noteworthy, as it indicates that the experience of living with HIV does not necessarily lead to simultaneous deterioration across all components of the couple relationship and that individuals may be able to maintain their relational dynamics. Dyadic adjustment is a multilayered construct reflecting different aspects of a relationship. In this context, it is important to evaluate dimensions such as partner consensus, emotional bonding, shared activities, and relational satisfaction separately. The lack of differences in both total scores and subdimension means in this study suggests that PLWH may have developed adaptive strategies within relational processes. The literature reports that partner support, open communication, and joint coping skills can play a protective role in maintaining relationship adjustment among individuals living with HIV.[67–69] Particularly among couples experiencing chronic illness, increased mutual understanding and shared responsibility are considered key factors in sustaining relational balance.[75] Advances in antiretroviral therapy and the transformation of HIV into a manageable chronic condition may have increased individuals' ability to maintain long-term romantic relationships. Reduced uncertainty about the illness among individuals receiving regular treatment and clinical follow-up may support the development of more balanced partnerships. In this context, the absence of differences in dyadic adjustment and its subdimensions suggests that an HIV diagnosis does not inevitably impair relational functioning and that some couples may develop relational resilience over time. Although differences were observed in individual sexual variables such as sexual self-confidence, sexual self-efficacy, and sexual satisfaction, the similarity in dyadic adjustment scores indicates that the individual psychological dimensions of sexuality and relational adjustment do not always progress in parallel. In other words, even when an individual's sexual perceptions or satisfaction levels change, the overall relationship adjustment of the couple may remain stable. This finding highlights that evaluating sexual health solely through individual-level measures may be insufficient and that the relational context should also be considered. The comparative structure provided by the case–control design strengthens the interpretation of this finding regarding dyadic adjustment. Comparing groups with similar sociodemographic characteristics suggests that relationship adjustment cannot be explained solely by HIV status and may also be influenced by sociocultural factors, communication skills, and partner support. These results indicate that, within HIV care, not only individual-focused but also couple-based psychosocial support approaches may play an important role in maintaining relationship health.

Original Contribution of the Study and Clinical Interpretation

The findings of this study demonstrate that sexual life among people living with HIV (PLWH) cannot be understood within a unidimensional framework. The similarity of sexual self-consciousness and dyadic adjustment scores between PLWH and HIV-negative individuals suggests that an HIV diagnosis does not necessarily lead to direct negative effects on sexual self-perception or relationship adjustment. However, the lower levels of sexual self-confidence and sexual self-disclosure observed in the PLWH group indicate that perceived stigma and communication-related anxieties associated with HIV may influence the psychosocial dimensions of sexuality. Furthermore, the higher levels of sexual self-efficacy may reflect increased perceptions of responsibility toward protective behaviors and enhanced self-regulation skills following the experience of illness. In terms of sexual satisfaction, the lower levels of ego-centered satisfaction among PLWH suggest

that the individual pleasure dimension of sexual experience may be more strongly affected by psychological processes, whereas the absence of differences in partner-centered satisfaction indicates that relational bonds may remain preserved.

These multidimensional findings highlight the importance of holistic interventions in HIV care that extend beyond biomedical treatment and incorporate strategies aimed at strengthening sexual self-confidence, supporting self-disclosure skills, and addressing dyadic dynamics. By simultaneously examining sexual self-consciousness, sexual self-efficacy, sexual satisfaction, and dyadic adjustment, this study represents one of the limited investigations that evaluate the psychological and relational aspects of sexuality among PLWH within a comprehensive framework, thereby offering an original contribution to the existing literature.

Limitations

This study has several limitations. First, the sample consisted only of individuals who applied to a single center, which may limit the generalizability of the findings. Second, HIV-negative participants may have had other underlying health conditions that were not fully controlled for in the study design. Third, all measurement tools were based on self-report, which may have introduced response bias. In addition, environmental and cultural conditions in which participants reside may have influenced their perceptions and responses; however, these contextual factors were not specifically controlled for within the research design. Therefore, the findings should be interpreted with caution in light of these limitations.

Conclusion and Recommendations

In this study, People Living With HIV (PLWH) were found to have lower sexual self-confidence, higher sexual self-efficacy, and lower sexual satisfaction compared with HIV-negative individuals. While awareness and self-efficacy regarding sexuality increased among PLWH, self-disclosure related to sexuality decreased. In addition, higher levels of sexual self-consciousness were found to negatively affect sexual satisfaction in this group.

These findings highlight the importance of a holistic evaluation of the sexual lives of individuals living with HIV, even when they are virologically suppressed, receiving regular antiretroviral therapy, and consistently using condoms. Nurses and other healthcare professionals should integrate sexual health assessment into routine HIV care, provide individualized counseling, and include partners in education and support programs when appropriate. Nursing interventions focusing on enhancing sexual self-confidence and sexual self-consciousness, reducing sexual shyness, and strengthening communication skills may contribute to improved sexual well-being and quality of sexual life among PLWH.

From a clinical practice perspective, structured sexual health education programs and counseling models led by nurses may help address the psychosocial and relational aspects of sexuality that are often overlooked during routine follow-up. Multidisciplinary approaches that consider the emotional, cultural, and relational dimensions of sexuality are recommended.

Future studies should include multicenter and longitudinal designs to better understand causal relationships and cultural influences on sexuality among PLWH. In addition, qualitative and mixed-method studies exploring partner dynamics, stigma, and communication patterns may provide deeper insight into the factors affecting sexual satisfaction and sexual self-confidence in this population.

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References

1. Mitchell KR, Lewis R, O'Sullivan LF, Fortenberry JD. What is sexual wellbeing and why does it matter for public health? Lancet Public Health 2021;6:e608–13.
2. Chesli SR, Bostani Khalesi Z, Chenari SS. The role of sexual self-esteem, sexual desire, and sexual assertiveness in the female sexual function. Psicol Reflex Crit 2024;37:21.
3. Zhang W. The role of sex in intimate relationships: an exploration based on martin buber's intersubjective theory. Front Psychol 2022;13:850278.
4. UNAIDS Global AIDS Update 2025. AIDS, crisis and the power to transform. Geneva: Joint United Nations Programme on

HIV/AIDS; 2025. Available at: https://www.unaids.org/sites/default/files/2025-07/2025-global-aids-update-JC3153_en.pdf. Accessed Feb 4, 2026.
5. Kismödi E, Cottingham J, Gruskin S, Miller AM. Advancing sexual health through human rights: the role of the law. Glob Public Health 2015;10:252–67.
6. Grulich AE, Mercer CH, Sturrock B, Baral S, Turpin N, Phanuphak N, et al. Partial progress in sexual and reproductive health and rights: the influence of sociocultural, behavioural, structural, and technological changes on epidemiological trends. Lancet 2025;406:2100–18.
7. Hensel DJ, Fortenberry JD, O'Sullivan LF, Orr DP. The developmental association of sexual self-concept with sexual behavior among adolescent women. J Adolesc 2011;34:675–84.
8. Celik E. The validity and reliability of the Turkish version of the sexual self-consciousness scale. Turk Stud 2013a;8:1703–13.
9. van Lankveld JJ, Geijen WE, Sykora H. The sexual self-consciousness scale: psychometric properties. Arch Sex Behav 2008;37:925–33.
10. Bailes S, Creti L, Fichten CS, Libman E, Brender W, Amsel R. Sexual self-efficacy scale for female functioning. In: Davis CM, Yarber WL, Bauserman R, Shreer G, Davis SL, editors. Handbook of sexuality-related measures. New York: Routledge Press; 1998. p.531–4.
11. Gómez-Berrocal C, Moyano N, Álvarez-Muelas A, Sierra JC. Sexual double standard: A gender-based prejudice referring to sexual freedom and sexual shyness. Front Psychol 2022;13:1006675.
12. Celik E. Adaptation of Sexual Self-Efficacy Scale Turkish culture: A study of validity and reliability. Jour of Europ Educ 2013b;3:1–10. [Article in Turkish]
13. Çankaya S, Aslantaş BN. Determination of sexual attitude, sexual self-consciousness, and sociocultural status in women with and without lifelong vaginismus: a case-control study. Clin Nurs Res 2022;31:1340–51.
14. Waling A, Farrugia A, Fraser S. Embarrassment, shame, and reassurance: emotion and young people's access to online sexual health information. Sex Res Social Policy 2023;20:45–57.
15. Alan Dikmen H, Cankaya S. Associations between sexual violence and women's sexual attitudes, sexual self-consciousness, and sexual self-efficacy. J Interpers Violence 2021;36:11304–26.
16. Merwin KE, Rosen NO. Perceived partner responsiveness moderates the associations between sexual talk and sexual and relationship well-being in individuals in long-term relationships. J Sex Res 2020;57:351–64.
17. Rausch D, Rettenberger M. Predictors of sexual satisfaction in women: a systematic review. Sex Med Rev 2021;9:365–80.
18. Karacam Ö, Totan T, Korkmaz YB, Koyuncu M. Turkish adaptation of the Hendrick Brief Sexual Attitudes Scale, validity and reliability study. Anatol J Psychiatr 2012;3(2):138–44. [Article in Turkish]
19. Li H, Wei C, Tucker J, Kang D, Liao M, Holroyd E, et al. Barriers and facilitators of linkage to HIV care among HIV-infected young Chinese men who have sex with men: a qualitative study. BMC Health Serv Res 2017;17:214.
20. Sierra JC, Gómez-Carranza J, Álvarez-Muelas A, Cervilla O. Association of sexual attitudes with sexual function: general vs. specific attitudes. Int J Environ Res Public Health 2021;18:10390.
21. Ramírez-Santos J, Castro-Luna G, Lucas-Matheu M, Parrón-Carreño T, Nievas-Soriano BJ. Competence and attitude of family physicians towards sexuality regarding their sexual orientation, age, or having a partner-survey study and validation. Int J Environ Res Public Health 2022;19:11029.
22. Nagtalon-Ramos J, Ayres C, Faught B. Sexual and reproductive health knowledge, attitudes, and self-efficacy among young adult Filipino American women. J Transcult Nurs 2022;33:576–84.
23. Logie CH, Lacombe-Duncan A, Wang Y, Kaida A, Conway T, Webster K, et al. Pathways From HIV-related stigma to antiretroviral therapy measures in the HIV care cascade for women living With HIV in Canada. J Acquir Immune Defic Syndr 2018;77:144–53.
24. Turan B, Budhwani H, Fazeli PL, Browning WR, Raper JL, Mugavero MJ, et al. How does stigma affect people living with HIV? The mediating roles of internalized and anticipated HIV stigma in the effects of perceived community stigma on health and psychosocial outcomes. AIDS Behav 2017;21:283–91.
25. Muise A, Impett EA, Rosen NO. Keeping the spark alive: Being motivated to meet a partner's sexual needs sustains sexual desire in long-term relationships. J Pers Soc Psychol 2020;119:1208–26.
26. Richner DC, Lynch SM. Sexual health knowledge and sexual self-efficacy as predictors of sexual risk behaviors in women. Psychol Women Q 2024;48:133–46.
27. Nery-Hurwit MB, Kalpakjian CZ, Kreschmer JM, Quint EH, Ernst S. Development of a conceptual framework of sexual well-being for women with physical Disability. Womens Health Issues 2022;32:376–87.
28. McKee A, Albury K, Dunne M, Grieshaber S, Hartley J, Lumby C, et al. Healthy sexual development: A multidisciplinary framework for research. Int J Sex Health 2010;22:14–9.
29. Celik E. Development of a sexual self-confidence scale and its psychometric properties. Hacettepe Univ J Educ 2015;30:48–61.
30. Closson K, Dietrich JJ, Lachowsky NJ, Nkala B, Palmer A, Cui Z, et al. Sexual self-efficacy and gender: a review of condom use and sexual negotiation among young men and women in sub-saharan Africa. J Sex Res 2018;55:522–39.
31. Wesche R, Toman M, Grafsky EL, Gupta S, Tarantino MR. Developing an inclusive model of young heterosexual and sexual minority women's sexual decision-making. J Sex Res 2025;62:500–14.
32. Jones AC, Robinson WD, Seedall RB. The role of sexual communication in couples' sexual outcomes: a dyadic path analysis. J Marital Fam Ther 2018;44:606–23.
33. Waling A, Farrugia A, Fraser S. Embarrassment, shame, and reassurance: emotion and young people's access to online sexual health information. Sex Res Social Policy 2023;20:45–57.

34. Mallory AB. Dimensions of couples' sexual communication, relationship satisfaction, and sexual satisfaction: A meta-analysis. J Fam Psychol 2022;36:358–71.
35. Bauermeister JA, Muessig KE, LeGrand S, Flores DD, Choi SK, Dong W, et al. HIV and sexuality stigma reduction through engagement in online forums: results from the HealthMPowerment intervention. AIDS Behav 2019;23:742–52.
36. Munea AM, Alene GD, Debelew GT, Sibhat KA. Socio-cultural context of adolescent sexuality and youth friendly service intervention in West Gojjam Zone, Northwest Ethiopia: a qualitative study. BMC Public Health 2022;22:281.
37. De Schrijver L, Fomenko E, Krahé B, Motmans J, Roelens K, Vander Beken T, et al. Sexual victimization in LGB+ persons in Belgium: consequences, help-seeking behavior, and othering-based stress. Healthcare (Basel) 2025;13:2744.
38. Maycott J, Arayasirikul S. Low risk perception of harm from substance use and sexual behaviors among online help-seeking sexual and gender minoritized people in San Francisco, California: cross-sectional survey. JMIR Form Res 2025;9:e81753.
39. Ferrer RA, Klein WMP, Avishai-Yitshak A. Emotion and health decision making: Extending the appraisal tendency framework. Health Psychol 2020;39:185–95.
40. Widman L, Golin CE, Grodensky CA, Suchindran C. Do safer sex self-efficacy, attitudes toward condoms, and HIV transmission risk beliefs differ among men who have sex with men, heterosexual men, and women living with HIV? AIDS Behav 2013;17:1873–82.
41. Siqueira LR, da Cunha GH, Lopes MVO, Dantas MB, Gomes MEC, de Abreu WC, et al. Self-efficacy and consistent condom use by people living with HIV and seroconcordant and serodiscordant sexual partners in the Ceará, Brazil. AIDS Care 2024;36:1731–44.
42. Earnshaw VA, Smith LR, Chaudoir SR, Amico KR, Copenhaver MM. HIV stigma mechanisms and well-being among PLWH: a test of the HIV stigma framework. AIDS Behav 2013;17:1785–95.
43. Burger RL, Cohen CR, Mocello AR, Dworkin SL, Frongillo EA, Weke E, et al. Relationship power, antiretroviral adherence, and physical and mental health among women living with HIV in Rural Kenya. AIDS Behav 2023;27:416–23.
44. Courtenay-Quirk C, Pals SL, Colfax G, McKirnan D, Gooden L, Eroğlu D. Factors associated with sexual risk behavior among persons living with HIV: gender and sexual identity group differences. AIDS Behav 2008;12:685–94.
45. Rodger AJ, Cambiano V, Bruun T, Vernazza P, Collins S, Degen O, et al. Risk of HIV transmission through condomless sex in serodifferent gay couples with the HIV-positive partner taking suppressive antiretroviral therapy (PARTNER): final results of a multicentre, prospective, observational study. Lancet 2019;393:2428–38.
46. World Health Organization. Consolidated guidelines on HIV prevention, testing, treatment, service delivery and monitoring: recommendations for a public health approach. Geneva: World Health Organization; 2021.
47. Van Doren N, Mulauzi N, Tebbetts S, Mkandawire J, Neilands TB, Ssewamala F, et al. Addressing depression, stress, and hopelessness through an economic and relationship-strengthening intervention: Findings from a pilot randomized controlled trial among people with HIV in Malawi. J Affect Disord 2026;392:120196.
48. Litzinger S, Gordon KC. Exploring relationships among communication, sexual satisfaction, and marital satisfaction. J Sex Marital Ther 2005;31:409–24.
49. MacNeil S, Byers ES. Dyadic assessment of sexual self-disclosure and sexual satisfaction in heterosexual dating couples. J Soc Pers Relat 2005;22:169–81.
50. Remien RH, Stirratt MJ, Nguyen N, Robbins RN, Pala AN, Mellins CA. Mental health and HIV/AIDS: the need for an integrated response. AIDS 2019;33:1411–20.
51. Misra S, Mehta HT, Eschliman EL, Rampa S, Poku OB, Wang WQ, et al. Identifying "what matters most" to men in botswana to promote resistance to HIV-related stigma. Qual Health Res 2021;31:1680–96.
52. Chaudoir SR, Fisher JD, Simoni JM. Understanding HIV disclosure: a review and application of the Disclosure Processes Model. Soc Sci Med 2011;72:1618–29.
53. Cohen J. Statistical power analysis. Curr Dir Psychol Sci 1992;1:98–101.
54. Faul F, Erdfelder E, Lang AG, Buchner A. G*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behav Res Methods 2007;39:175–91.
55. Humphreys TP, Kennett DJ. The reliability and validity of instruments supporting the sexual self-control model. Can J Hum Sex 2010;19:1–13.
56. Stulhofer A, Busko V, Brouillard P. Development and bicultural validation of the new sexual satisfaction scale. J Sex Res 2010;47:257–68.
57. Tuğut N. Turkish version of the New Sexual Satisfaction Scale: A validity and reliability study. J Happiness Well-Being 2016;4:183–95.
58. Spanier GB. Measuring dyadic adjustment: A new scale for assessing the quality of marriage and similar dyads. J Marriage Fam 1976;38:15–28.
59. Busby DM, Christensen C, Crane RD, Larson JH. A revision of the dyadic adjustment scale for use with distressed and nondistressed couples: Construct hierarchy and multidimensional scales. J Marital Fam Ther 1995;21:289–98.
60. Bayraktaroğlu HT, Çakıcı ET. Psychometric properties of revised form dyadic adjustment scale in a sample from North Cyprus. Int J Edu Sci 2017;19:113–9.
61. Tlou B. The influence of marital status on HIV infection in an HIV hyperendemic area of rural South Africa, 2000-2017. Afr J AIDS Res 2019;18:65–71.
62. Copen CE, Leichliter JS, Spicknall IH, Aral SO. Sexually transmitted infection risk reduction strategies among US adolescents and adults with multiple opposite-sex sex partners or perceived partner nonmonogamy, 2011-2017. Sex Transm Dis 2019;46:722–7.
63. Nalugoda F, Guwatudde D, Bwaninka JB, Makumbi FE, Lutalo T, Kagaayi J, et al. Marriage and the risk of incident HIV infection in Rakai, Uganda. J Acquir Immune Defic Syndr 2014;65:91–8.

64. Kawuki J, Kamara K, Sserwanja Q. Prevalence of risk factors for human immunodeficiency virus among women of reproductive age in Sierra Leone: a 2019 nationwide survey. BMC Infect Dis 2022;22:60.
65. San Martín C, Simonelli C, Sønksen J, Schnetzler G, Patel S. Perceptions and opinions of men and women on a man's sexual confidence and its relationship to ED: results of the European Sexual Confidence Survey. Int J Impot Res 2012;24:234–41.
66. Ekstrand ML, Heylen E, Mazur A, Steward WT, Carpenter C, Yadav K, et al. The role of HIV stigma in art adherence and quality of life among rural women living with HIV in India. AIDS Behav 2018;22:3859–68.
67. Rintamaki L, Kosenko K, Hogan T, Scott AM, Dobmeier C, Tingue E, et al. The role of stigma management in HIV treatment adherence. Int J Environ Res Public Health 2019;16:5003.
68. Reif S, Wilson E, McAllaster C, Pence B. The relationship of HIV-related stigma and health care outcomes in the US deep south. AIDS Behav 2019;23(Suppl 3):242–50.
69. Thapa R, Yang Y. Experiences, emotions, and adjustments of HIV-infected men in HIV-concordant marital relationship in Cambodia. Am J Mens Health 2018;12:1215–25.
70. Celik E, Arıcı N. Using a structural equation model to examine factors affecting married individuals' sexual embarrassment. Educ Sci Theor Pract 2014;14:1689–707. [Article in Turkish]
71. Mark KP, Lasslo JA. Maintaining sexual desire in long-term relationships: a systematic review and conceptual model. J Sex Res 2018;55:563–81.
72. Yu Y, Qin K, Xiao F, Cai H, Sun Y, Li J, et al. HIV disclosure among sexually infected people living with HIV and AIDS in China: prevalence, influencing factors, and negative outcomes. AIDS Behav 2023;27:2411–29.
73. Schönnesson LN, Zeluf G, Garcia-Huidobro D, Ross MW, Eriksson LE, Ekström AM. Sexual (Dis)satisfaction and its contributors among people living with HIV infection in Sweden. Arch Sex Behav 2018;47:2007–26.
74. Rojas Castro D, Le Gall JM, Andreo C, Spire B. Stigma, discrimination, and sexual (dis)satisfaction among people living with HIV: results from the "AIDES et toi" survey. AIDS Care 2010;22:961–9.
75. Hou J, Falconier MK, Tam W, Cheung MW, Fu R, Bu H, et al. Dyadic coping and relationship satisfaction among couples with a chronic illness: A meta-analytical actor-partner interdependence model. Clin Psychol Rev 2025;119:102587.

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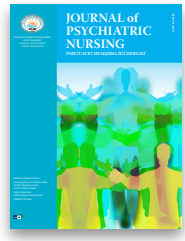

Original Article

The effect of emotional freedom technique on psychological distress in newly diagnosed multiple sclerosis patients: A randomized controlled trial

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Abstract

Objectives: Multiple Sclerosis can lead to significant emotional and physiological challenges, especially during the initial phase following diagnosis. Emotional Freedom Technique, a self-administered intervention combining cognitive and somatic elements, may offer a complementary approach to conventional care.

Methods: This randomized controlled trial included 36 participants diagnosed with Multiple Sclerosis within the last three months. The study was registered at ClinicalTrials.gov (NCT number: NCT04969562). Participants were allocated using block randomization to either an intervention group (n=18), which received six sessions of Emotional Freedom Technique in addition to routine care, or a control group (n=18), which received routine care only. Blinding was maintained during the sampling, allocation, data collection, and data analysis stages. Cognitive function was assessed using the Symbol Digit Modalities Test, and psychological distress was measured using the Subjective Units of Distress Scale, with assessments conducted at baseline and after the intervention. Within-group differences were analyzed using the Wilcoxon signed-rank test, and between-group differences were evaluated using the Mann–Whitney U test. Effect sizes (r) were calculated for the outcome variables.

Results: No substantial differences were observed between the groups regarding depression, anxiety, or overall psychological distress following the intervention. However, participants in the intervention group demonstrated modest improvements in cognitive function (r=0.54), indicating a moderate-to-large effect size.

Conclusion: The findings suggest that Emotional Freedom Technique may have positive effects on cognitive functioning and certain physiological indicators, even if its impact on emotional distress is limited in the short term.

Keywords: Cognition; distress; emotional freedom; multiple sclerosis

Multiple sclerosis (MS) is a chronic autoimmune and neurodegenerative disease characterized by inflammation, demyelination, and axonal damage, affecting more than 2.8 million people worldwide.[1] The uncertain clinical picture of MS creates many psychosocial problems that increase the psychological distress of individuals diagnosed with MS.[2] Symptoms that occur with MS significantly affect the quality of life of individuals diagnosed with MS.[3] In addition to various psychosocial risk factors, depression and anxiety may accompany individuals diagnosed with MS due to the biological processes associated with MS.[4] According to a study conducted with individuals diagnosed with MS, 48% of individuals show symptoms of stress, anxiety, and depression within the first year after diagnosis.[5] In a study conducted with individuals newly diagnosed with MS, it was found that individuals experienced anxiety, fear of death, and intense stress during the diagnosis

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process.[6] Distress, depressive symptoms, and anxiety in individuals diagnosed with MS may impair the individual's functionality, negatively affect quality of life, and increase somatic symptoms.[7] These problems are felt intensely in the process, from finding out about the disease to its acceptance, and can directly affect the patient's social functionality and relationship with other people.[8] There are studies that have shown that individuals diagnosed with MS need help in coping and psychosocial support after being diagnosed.[9,10]

Multiple sclerosis (MS) is a chronic disease characterized not only by physical impairments but also by neuropsychiatric symptoms and cognitive deficits.[11] Cognitive problems are common in MS and negatively affect patients' daily functioning, including social interaction, work status, and quality of life.[12] Psychosocial and psychotherapeutic interventions play a crucial role in the management of psychological symptoms in individuals diagnosed with multiple sclerosis. Previous studies have shown that cognitive behavioral therapy, mindfulness-based interventions, and structured stress management programs can effectively reduce depression, anxiety, and psychological distress, while also improving quality of life and cognitive functioning in individuals with MS.[2,11,13–15] In particular, brief and structured interventions have gained importance in the early stages following diagnosis, as newly diagnosed individuals often experience intense emotional distress and adjustment difficulties.[6,9] However, long-term psychotherapeutic interventions may not always be feasible due to fatigue, disease burden, and limited access to specialized mental health services. It is important to provide brief and effective intervention methods to reduce depression, anxiety, and psychological distress and improve the quality of life of individuals diagnosed with MS.[13] Emotional Freedom Technique (EFT) is an effective short-term intervention that is easy to implement and gives control to the patient.[16,17] Emotional Freedom Technique (EFT) is a psychophysiological intervention that integrates elements of cognitive behavioral therapy, exposure therapy, and somatic stimulation through acupressure applied to specific acupuncture points.[18,19] EFT is an intervention in which a person's physical or psychological awareness is focused on a specific topic and simultaneously stimulates selected acupuncture points along meridians in the body, especially on the head and upper body, by tapping them with fingertips.[17] EFT is reported to be effective in various psychiatric disorders such as anxiety, depression, and post-traumatic stress disorder, and the effect persists over time.[18] In the literature, there are studies that show that depression and anxiety in individuals with MS are related to cognitive function impairment.[20–22] Therefore, providing brief and effective intervention methods to reduce depression, anxiety, and psychological distress and to improve the quality of life of individuals diagnosed with MS is of particular importance.[13] Emotional Freedom Technique (EFT) is a brief psychophysiological intervention that integrates elements of cognitive behavioral therapy, exposure therapy, and somatic stimulation through the stimulation of acupuncture points.[16–19] EFT focuses on a specific physical or psychological concern while selected acupuncture points, primarily on the head and upper body, are stimulated by fingertip tapping.[17] EFT has been reported to be effective in various psychiatric conditions, including anxiety, depression, and post-traumatic stress disorder, with effects that may persist over time.[18] In the literature, several studies have demonstrated that depression and anxiety in individuals with MS are closely associated with impairments in cognitive functioning.[20–22]

What is presently known on this subject?

- Multiple sclerosis is associated with high rates of depression, anxiety, and psychological distress, particularly in the early period after diagnosis. Emotional Freedom Technique (EFT) has been studied in various populations and shown potential benefits for anxiety, depression, and stress reduction. However, no prior studies have examined the effects of EFT in newly diagnosed MS patients, especially regarding cognitive outcomes.

What does this article add to the existing knowledge?

- This study provides the first evidence on the use of EFT in newly diagnosed MS patients, showing that while short-term effects on distress, anxiety, and depression were limited, EFT improved cognitive functioning. The findings also demonstrate reductions in physiological markers such as blood pressure and pulse rate following EFT sessions. These results suggest a broader therapeutic role of EFT beyond emotional regulation.

What are the implications for practice?

- EFT may be considered as a safe, cost-effective, and self-administered complementary intervention to support cognitive and physiological well-being in MS patients. Integrating EFT into holistic nursing care could empower patients to actively manage their health. Future larger-scale trials are needed to confirm its utility and inform clinical guidelines.

Although the effectiveness of EFT has been examined in different populations, existing findings are not entirely consistent, and reported effect sizes are often modest or context-dependent. Systematic reviews and meta-analyses indicate that while EFT may show beneficial effects for certain psychological outcomes, the magnitude and consistency of these effects vary across studies and populations.[23,24] To date, no study has investigated the effectiveness of EFT in individuals newly diagnosed with MS, nor has its potential impact on cognitive functions been examined. Identification and intervention of depressive symptoms or anxiety levels of individuals diagnosed with MS are especially important in the treatment of newly diagnosed individuals. EFT is a short, easy, reliable, cost-effective, and self-administered method, and the fact that it is a self-administered method allows the individual to manage the disease.[16,17] However, it is stated that studies with a high level of evidence are needed to evaluate the effectiveness of EFT.[24] Based on these requirements, it is thought that the results of this study, which was planned in a randomized controlled experimental design, can make an important contribution to both literature and practice, particularly by informing early supportive care approaches and comple-

mentary intervention planning for individuals newly diagnosed with MS. From a psychiatric nursing perspective, such interventions may also have practical implications for clinical practice, as EFT can be integrated into psychoeducation and patient education programs delivered by nurses to support coping and psychological well-being in individuals with MS. Psychiatric nurses play a key role in the psychosocial care of individuals with chronic neurological conditions such as MS, particularly in the early stages following diagnosis. Nurse-led supportive interventions and psychoeducational approaches can contribute to improving coping strategies, reducing psychological distress, and promoting patient self-management. Unlike previous studies examining EFT in various clinical or non-clinical populations, the present study focuses specifically on individuals newly diagnosed with MS and evaluates both psychological outcomes and cognitive functioning. By using a randomized controlled design, this study aims to provide higher-level evidence regarding the potential role of EFT as an early supportive intervention in MS care.

The aim of this study was to investigate the effect of EFT on depressive symptoms, anxiety, psychological distress levels, Symbol Digit Modalities Test (SDMT) scores, resting heart rate, and blood pressure of individuals with newly diagnosed multiple sclerosis.

Hypotheses

H1: Depressive symptom levels of individuals with newly diagnosed multiple sclerosis who receive Emotional Freedom Technique (EFT) will be lower following the intervention compared with those in the control group.

H2: Anxiety levels of individuals with newly diagnosed multiple sclerosis who receive Emotional Freedom Technique (EFT) will be lower following the intervention compared with those in the control group.

H3: Psychological distress levels of individuals with newly diagnosed multiple sclerosis who receive Emotional Freedom Technique (EFT) will be lower following the intervention compared with those in the control group.

H4: Symbol Digit Modalities Test (SDMT) scores of individuals with newly diagnosed multiple sclerosis who receive Emotional Freedom Technique (EFT) will be higher following the intervention compared with those in the control group.

H5: Resting heart rate levels of individuals with newly diagnosed multiple sclerosis who receive Emotional Freedom Technique (EFT) will be lower after the intervention compared to pre-intervention measurements.

H6: Blood pressure levels of individuals with newly diagnosed multiple sclerosis who receive Emotional Freedom Technique (EFT) will be lower after the intervention compared to pre-intervention measurements.

Materials and Method

Design

This study was a randomized controlled experimental trial (Clinical Trials number NCT04969562). This randomized controlled trial was reported in accordance with the CONSORT guidelines. The completed CONSORT checklist has been provided as Supplementary File (See CONSORT Checklist).

Settings and Participants

This study was conducted between February 2021 and October 2021 in newly diagnosed adult individuals with MS who received outpatient treatment in the MS treatment unit of a university hospital. The sample of the study consisted of individuals diagnosed with multiple sclerosis within the last three months. The inclusion criteria for the study were: being over the age of 18, being cooperative and oriented enough to follow the given instructions, having been diagnosed with MS in the last three months, receiving MS treatment for at least the past month, and having received 3 or more points on the Subjective Units of Distress Scale (SUD), which measures psychological distress. The exclusion criteria for the study were: being at the flare-up stage of the psychiatric disease, using psychiatric medication for less than three months, and having MS attacks.

To determine the sample size, a power analysis was conducted based on a study examining the effectiveness of EFT in individuals with post-traumatic stress disorder.[25] According to the power analysis with a medium-level effect size, $p<0.05$, and power 0.80, a total of 36 individuals (18 individuals in each group) should be included in the study. During the recruitment process, 48 individuals were assessed for eligibility. Of these, 12 individuals declined to participate due to lack of time to attend the sessions. Consequently, 36 individuals were randomized to the intervention (n=18) and control (n=18) groups. During the follow-up period, three participants in the intervention group were lost to follow-up (two withdrew from the study and one experienced an MS attack), and one participant in the control group was lost to follow-up due to an MS attack. However, all randomized participants were included in the intention-to-treat analysis.

Randomization

Randomization was performed using a stratified block randomization method based on gender. Given that the prevalence of MS is higher in women than in men[26] and consistent with the distribution observed at the study center (three women to one man), randomization was stratified by gender in a 3:1 ratio. Block sizes of four were used. The randomization sequence was generated using a computer-based random number generator according to predefined block patterns and prepared in advance by a researcher not involved in participant recruitment,

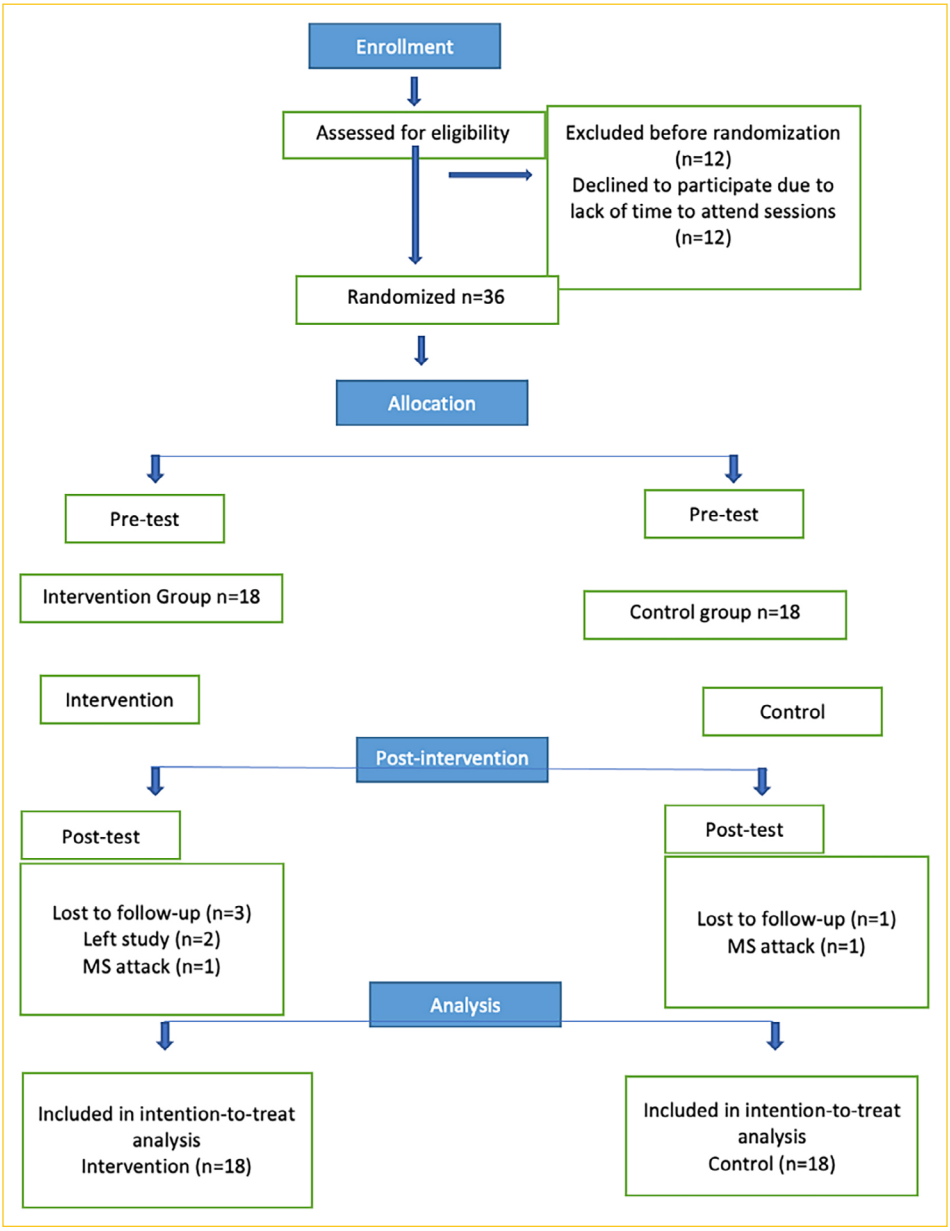

Figure 1. CONSORT flow diagram of the study participants.

data collection, or intervention delivery. The randomization procedure was conducted by an independent researcher, and the allocation sequence was placed in sealed envelopes and delivered to the researcher responsible for participant recruitment. Participants were assigned to either the intervention (A) or control (B) group based on this sequence. The flow of participants through the study is presented in Figure 1.

Data Collection

In the outpatient treatment unit, participants were allocated to two groups according to the randomization scheme by an independent researcher. Following allocation, baseline assessments were conducted for both groups prior to the initiation of the intervention by a researcher who was not involved in the intervention process. EFT was applied to one of the groups, while the other group continued their routine treatment. For the EFT group, Subjective Units of Distress (SUD) ratings, resting heart rate, and blood pressure were assessed immediately before and immediately after each EFT session. Depression, anxiety, psychological distress, and cognitive function (Symbol Digit Modalities Test; SDMT) were assessed at baseline (prior to the first session) and immediately after completion of the sixth EFT session. For the control group, depression, anxiety, psychological distress, and cognitive function were assessed at baseline and at the end of the six-week period corresponding to the intervention duration. The control group did not receive EFT and continued with routine medical care only. Physiological measurements (resting heart rate and blood pressure)

were assessed repeatedly only in the EFT group, as these measurements were directly related to the intervention sessions.

Intervention

The individuals with MS in the intervention group participated in six sessions of Emotional Freedom Technique (EFT) at seven-day intervals, with each session lasting approximately 30–45 minutes. In the first session, participants discussed the emotions experienced following their MS diagnosis. Subsequently, the EFT procedure was demonstrated step by step. The details of the intervention were reported according to the Template for Intervention Description and Replication (TIDieR) checklist, and the procedure is presented in Supplementary Material 1 (Suppl 1). The intervention was delivered by a researcher who holds a certification in Emotional Freedom Technique. Prior to the main study, a pilot application was conducted to evaluate the feasibility and clarity of the intervention procedures, and participants involved in the pilot study were not included in the final study sample.

Control Group

Participants assigned to the control group were asked to continue their routine treatment for six weeks. No EFT sessions were provided to this group during the study period. However, the same assessment procedures were applied to both groups. Upon completion of the study, participants in the control group were offered the opportunity to receive the Emotional Freedom Technique (EFT) intervention, consisting of six sessions conducted at seven-day intervals, with each session lasting approximately 35–45 minutes, if they wished to participate.

Instruments

The data were collected using a sociodemographic data form, the Subjective Units of Distress Scale (SUDS), the HAD scale (Hospital Anxiety and Depression Scale), and the SDMT (Symbol Digit Modalities Test). The scales and their administration methods are provided in Supplement 1.

Data Analysis

Data were analyzed using SPSS version 24.0. Normality of continuous variables was assessed using the Shapiro–Wilk test. Descriptive statistics were presented as mean±standard deviation or median (interquartile range), as appropriate. Given the relatively small sample size and the distributional characteristics of the data, non-parametric statistical methods were selected. Between-group comparisons at baseline and post-intervention were performed using the Mann–Whitney U test, while within-group pre–post comparisons were conducted using the Wilcoxon signed-rank test. To estimate intervention-related change between groups, post–pre difference (change) scores were calculated and compared using the Mann–Whitney U test. Repeated physiological measurements (blood pressure and pulse rate) within the intervention group were analyzed using the Wilcoxon signed-rank test. Categorical variables were compared using the chi-square test. Analyses were conducted according to the intention-to-treat (ITT) principle. Missing data were limited and were handled using the last observation carried forward (LOCF) method as a conservative approach. The primary outcome of the study was psychological distress. Other outcomes (depression, anxiety, cognitive function, and physiological indicators) were considered secondary and exploratory. Therefore, no formal correction for multiple comparisons was applied. A two-tailed p value <0.05 was considered statistically significant.

Ethical Considerations

Ethical approval for this study was obtained from the Non-invasive Research Ethics Committee of Dokuz Eylul University (Date: 29.03.2021, Approval No: 2021/10-29). Institutional permission was also granted. Prior to participation, all individuals were informed about the purpose of the study. Both written and verbal informed consent were obtained from all participants. The ethics committee approved the use of verbal consent as part of the study protocol. Confidentiality and voluntary participation were strictly ensured throughout the research process. This study was conducted in accordance with the Declaration of Helsinki.

Results

The results are presented in relation to the prespecified study hypotheses, including between-group differences in post–pre change scores and within-group changes over time.

The Characteristics of the Participants

There was no significant difference between the EFT group and the control group in terms of age, educational status, marital status, employment status, smoking, alcohol use, and having any other disease other than MS. Sociodemographic data are given in Table 1.

Comparison of the Depression Scores

It was determined in the comparison made with the Mann–Whitney U test between the EFT group and the control group that the depression scores of the control group prior to the intervention were significantly higher compared to the EFT group ($U=97.500$, $p=0.041$). In the comparison made after the intervention, it was seen that there was no significant difference ($U=145.000$, $p=0.586$). The EFT group's before and after intervention scores were compared within themselves, and it was determined that there was no statistically significant difference ($Z=-1.369$, $p=0.171$). The control group's before and after intervention scores were compared within themselves,

Table 1. Sociodemographic characteristics of the EFT group and the control group

	EFT group (n=18)	Control group (n=18)	Test value, p value
Age[1](Mean±SD)	30.00±8.43	32.78±9.27	U=136.000 p=0.419
Education status[2]			
Primary Education	1 (33.3%)	2 (66.7%)	X^2=5.466
High School	12(70.6%)	5 (29.4%)	df= 2
University	5 (31.3%)	11 (68.8%)	p=0.65
Marital status[2]			
Married	7 (38.9%)	12 (66.7%)	X^2=3.916
Single	9 (50.0%)	6 (33.3%)	df= 2
Divorced/died	2 (11.1%)	0 (0.0%)	p=0.095
Working status[2]			
Working	8 (44.4%)	11 (61.1%)	X^2=1.292
Not working	3 (16.7%)	3 (16.7%)	df= 2
Student	7 (38.9%)	4 (22.7%)	p=0.521
Other disease[2]			
Yes	3 (16.7%)	4 (22.2%)	X^2=0.177
No	15 (83.3%)	14 (77.8%)	df=1 p=0.674

[1]: Mann Whitney U Test; [2]: Chi Squared Test. EFT: Emotional freedom technique, SD: Standard deviation.

and it was determined that there was a statistically significant difference. It was found that the scores of the control group decreased significantly at the end of the six-week period (Z=−3.354, p=0.001). According to the results of this analysis, it was determined that there is a significant difference between the two groups (U=99.500, p=0.046). It was found that the control group's depression levels significantly decreased after the intervention. The results are given in Table 2.

Comparison of the Anxiety Scores

It was determined in the comparison made with the Mann–Whitney U test between the EFT group and the control group that the anxiety scores of the control group prior to the intervention were significantly higher compared to the EFT group (U=95.500, p=0.034). In the comparison made after the intervention, it was found there was no significant difference (U = 132.000, p=0.339). There was a difference between the first measurements of the EFT group and the control group; the difference prior to and after the application was evaluated with the Mann–Whitney U test. According to the results of this analysis, it was determined that there was a significant difference between the EFT group and the control group (U=99.000, p=0.045). The results are given in Table 2.

Comparison of the Psychological Distress Scores

There is no statistically significant difference between the psychological distress scores of the EFT group and the con-

Table 2. Comparison of the EFT group and the control group in terms of Depression, Anxiety, Psychological Distress and SDMT scores before and after the intervention

	Depression				Anxiety				Psychological distress				Cognitive function			
	Pre-test	Post-test	Differ. (Pi-Prei)	Z value, p value	Pre-test	Post-test	Differ. (Pi-Prei)	Z Value, p Value	Pre-test	Post-test	Differ. (Pi-Prei)	Z Value, p Value	Pre-test	Post-test	Differ. (Pi-Prei)	Z Value, p Value
EFT group (n=18)	4.33	3.38	-0.94	Z=1.369,	5.27	3.55	-1.05	Z=1.656,	7.72	5.94	-1.78	Z=-3.198	54.44	57.22	-2.78	Z=-2.308
Mean SD	4.14	4.03	3.63	p=0.171	4.41	3.51	3.70	p=0.098	1.90	2.41	1.59	p=0.001*	10.58	11.52	4.52	p=0.021*
Control group (n=18)	7.38	3.72	-3.66	Z= 3.354,	8.44	4.94	-3.83	Z=-2.588,	7.94	5.16	-2.78	Z=-2.981	48.38	49.55	-1.17	Z=-0.808
Mean SD	4.20	4.01	3.44	p=0.001*	4.17	4.34	4.28	p=0.01*	1.62	3.09	2.86	p=0.003*	11.07	13.22	5.39	p=0.419
U value,	U=97.500,	U=145.000,	U=99.500		U=95.500	U=132.000	U=99.000		U=150.000	U=138.000	U=133.000		U=113.000	U=111.000	U=131.500	
p value	p=0.041*	p=0.586	p=0.046*		p=0.034*	p=0.339	p=0.045*		p=0.697	p=0.444	p=0.354		p=0,121	p=0.106	p=0.333	

Differ (Post–Pre) values represent post-intervention minus pre-intervention scores. U: Mann-Whitney U test, Z: Wilcoxon test, p<0.05, *: p<0.05. EFT: Emotional freedom technique, SDMT: Symbol digit modalities test

Table 3. Comparison of blood pressure and pulse parameters of the EFT group before and after each session

	Before session (mean values±SD)	After session (mean values±SD)	p value	Z value
Systolic 1st session	120.22 (13.58)	120.83 (14.21)	0.929	-0.089
Diastolic 1st session	75.94 (10.64)	74.22 (8.66)	0.117	-1.569
Pulse 1st session	85.83 (12.98)	81.67 (12.99)	0.005*	-2.796
Systolic 2nd session	118.66 (11.18)	117.61 (14.07)	0.534	-0.621
Diastolic 2nd session	76.06 (8.49)	74.44 (9.38)	0.056	-1.908
Pulse 2nd session	89.22 (10.34)	83.83 (10.22)	0.028*	-2.204
Systolic 3rd session	115.33 (12.58)	115.77 (15.29)	0.777	-0.283
Diastolic 3rd session	73.67 (11.08)	72.28 (9.36)	0.175	-1.357
Pulse 3rd session	88.17 (10.84)	84.39 (8.77)	0.043*	-2.027
Systolic 4th session	114.88 (10.91)	115.55 (15.56)	0.581	-0.552
Diastolic 4th session	73.11 (8.91)	69.61 (8.86)	0.003*	-2.930
Pulse 4th session	85.72 (11.85)	85.56 (12.29)	0.094	-1.673
Systolic 5th session	116.16 (9.79)	115.27 (14.03)	0.421	-0.805
Diastolic 5th session	73.33 (7.77)	69.94 (9.65)	0.004*	-2.904
Pulse 5th session	85.89 (7.28)	82.61 (7.62)	0.006*	-2.775
Systolic 6th session	117.33 (10.72)	116.22 (13.86)	0.006*	-1.882
Diastolic 6th session	74.28 (7.23)	71.78 (6.29)	0.007*	-2.677
Pulse 6th session	87.61 (7.63)	84.50 (7.52)	0.002*	-3.087

Z: Wilcoxon test, p<0.05. *: p<0.05. EFT: Emotional freedom technique, SD: Standard deviation.

trol group prior to the intervention (U=150.000, p=0.697) and after the intervention (U=138.000, p=0.444). There is a significant difference between the EFT group's before and after intervention scores. The EFT group's psychological distress level is significantly decreased after the intervention compared to baseline (Z=−3.198, p=0.001). In addition, the between-group comparison of post–pre change scores in psychological distress (SUDS) showed no statistically significant difference between the EFT and control groups (Mann–Whitney U=133.000, p=0.354). The results are given in Table 2.

Comparison of the Cognitive Function Scores

The between-group comparison of post–pre change scores in cognitive function, assessed using the Symbol Digit Modalities Test (SDMT), revealed no statistically significant difference between the EFT group and the control group (Mann–Whitney U=131.500, p=0.333). The results are presented in Table 2.

The comparison of the blood pressure and the pulse rate of the EFT group prior to and after the sessions:

Each systolic and diastolic blood pressure value was compared within each session. There was no significant difference in the 1st, 2nd, and 3rd sessions, but there was a significant decrease in the 4th, 5th, and 6th session blood pressure measurements after the intervention compared to before the intervention (p<0.05). Table 3 shows the results of blood pressure and pulse rate measurements.

Discussion

The results of the study, which was carried out with the purpose of examining the effect of Emotional Freedom Technique (EFT) on depression, anxiety, psychological distress levels, Symbol Digit Modalities Test (SDMT) results, resting heart rate, and blood pressure in individuals newly diagnosed with MS, were discussed in the light of the literature.

In the comparison of depression and anxiety scores between the EFT and control groups after the intervention, no significant difference was observed between the two groups. Although the groups were randomly assigned, significant baseline differences in anxiety and depression scores were identified. Possible explanations for this finding, including the natural adaptation process following diagnosis and the effects of routine care, are discussed in detail below.

Since there is no study in the literature examining the effect of EFT on depression and anxiety in individuals diagnosed with MS, similar studies were examined. In these studies, EFT was found to have a statistically significant effect on anxiety and depression levels.[25,27,28] When the studies in the literature are examined, it is seen that fewer sessions were applied, and there was no control group in these studies.[28–31] For these reasons, it is recommended that studies evaluating the effectiveness of EFT in patients newly diagnosed with MS should be conducted with a larger sample size and with patients at higher risk of anxiety and depression.

In the literature, studies examining the effectiveness of EFT in different groups showed significant differences in psychological distress scores between groups.[25,30,32,33] The results of our study were found to be different from the literature. The reason for this difference is thought to be that the level of psychological distress experienced by individuals diagnosed with MS during the period when they were newly diagnosed decreased at the end of the six-week period in the study. Individuals diagnosed with MS who participated in the study were included in the first evaluation at a time when their diagnosis was finalized, and one month had passed since they started taking medication. Then, groups were determined by randomization. The EFT group participated in sessions lasting six weeks, while the control group continued routine care for six weeks. It is thought that both the six-week period and the routine care had an effect on their getting used to the diagnosis and thus decreasing their psychological distress levels according to their initial assessment. At the same time, when other studies are examined, it is seen that EFT is applied in a single session.[30,32] Applying EFT in a single session ignores time as a confounding factor.[23] In our study, six sessions of EFT were applied as recommended. Since a similar result was found in the results related to anxiety and depression, it is thought that the methodological weaknesses and recommendations mentioned above may be similar in the results of the SUD scores as well.

Although there was no significant difference with the control group in our study, the post-intervention cognitive function scores of the EFT group increased significantly compared to the pre-intervention cognitive function scores. When the literature was examined, no study examining the relationship between EFT and cognitive function scores was found. There are studies examining the effect of CBT and mindfulness interventions on cognitive functions in individuals diagnosed with MS.[2,11,14,15] Since EFT is a CBT and mindfulness-based intervention, information was discussed using this literature. High anxiety and depressive symptoms have been associated with decreased information processing speed.[20] CBT and mindfulness-based interventions are thought to positively affect cognitive functions and increase information processing speed.[15] Mindfulness-based interventions have been shown to lead to cognitive and mood-related benefits in neurological diseases such as multiple sclerosis.[14] In our study, the increase in cognitive function scores of the EFT group after the intervention is consistent with the literature. However, there was no change in the cognitive function scores of the control group. There is no study on the effect of EFT on cognitive functions. Therefore, it is recommended that studies evaluating the effectiveness of EFT to improve cognitive functions should be conducted. These findings should be interpreted cautiously, as they are based on within-group changes and were not supported by statistically significant between-group differences. Therefore, the observed cognitive improvements should be considered preliminary and exploratory.

In our study, systolic and diastolic blood pressure values and pulse rate values of the participants in the EFT group were compared before and after the session. A significant decrease was observed in diastolic blood pressure values after the sessions compared to baseline, and pulse rate measurements also showed a statistically significant reduction following EFT. These findings are consistent with a previous study reporting that EFT may lead to reductions in blood pressure and pulse rate.[16] However, it should be noted that these physiological comparisons in the present study were based on within-group (pre–post) changes observed in the EFT group only. Moreover, these findings reflect short-term physiological responses and should be interpreted with caution, particularly given the absence of between-group comparisons and the potential influence of multiple testing.

Implications for Nursing & Health Policy

The findings of this study suggest that Emotional Freedom Technique (EFT) may be integrated as a supportive practice within holistic nursing care for individuals newly diagnosed with Multiple Sclerosis (MS). Despite limited short-term effects on emotional distress, improvements in cognitive function and physiological indicators highlight the potential value of EFT in enhancing patient well-being. As a non-pharmacological, cost-effective, and self-administered method, EFT may empower patients in their own care and support the shift toward more patient-centered and participatory models in healthcare. Policymakers and nursing administrators should consider the inclusion of EFT-based interventions in rehabilitation and mental health support programs, particularly in neurology clinics. Incorporating EFT training into nursing curricula and continuous professional development activities may also broaden the scope of therapeutic tools available to nurses working with chronically ill populations. The strengths of the current study include its randomized controlled design, the focus on individuals newly diagnosed with multiple sclerosis, and the use of both psychological and physiological outcome measures. These strengths support the relevance of the findings and enhance the applicability of EFT as a supportive intervention in clinical nursing practice.

From a psychiatric nursing perspective, the expected outcomes of EFT include supporting patients' cognitive functioning, reducing physiological stress responses, and enhancing self-management skills during the early period following MS diagnosis. Psychiatric nurses, who are in continuous and close contact with patients, are well positioned to deliver brief interventions such as EFT, provide guidance on self-administration, and monitor patients' emotional and cognitive responses over time. Expanding nurse-led EFT interventions in outpatient neurology and psychiatry settings

may increase accessibility to psychosocial support and contribute to more comprehensive, patient-centered care.

Limitations of the Study

The sample size was finalized at the minimum estimated value due to the pandemic. The fact that the MS center where the study was conducted was a center with relatively good care may have affected the results.

Conclusion

In our study, EFT applied to individuals with newly diagnosed MS had no effect on depression, anxiety, or psychological distress levels. There was a significant increase between the pretest Symbol Digit Modalities Test scores and post-test Symbol Digit Modalities Test scores of the EFT group. Resting heart rates and blood pressures of individuals in the EFT group were significantly lower after the session compared to before the session. These results may be related to the small sample size, differences in baseline measurements between the experimental and control groups, and the fact that they were patients of a center offering relatively good routine care.

It is thought that large-sample, longitudinal, randomized studies with a high level of evidence are needed to examine the effectiveness of EFT in individuals diagnosed with MS. In terms of demonstrating the effectiveness of EFT, it is recommended that future studies be conducted with higher-risk groups in terms of depression and anxiety levels. Conducting a qualitative study including the opinions of the participants regarding the EFT application may be instructive in terms of improving the EFT application.

Ethics Committee Approval: The study was approved by the Dokuz Eylul University Non-invasive Research Ethics Committee (no: 2021/10-29, date: 29/03/2021).

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References

1. Walton C, King R, Rechtman L, Kaye W, Leray E, Marrie RA, et al. Rising prevalence of multiple sclerosis worldwide: Insights from the Atlas of MS, third edition. Mult Scler 2020;26:1816–21.
2. Yue S, Yin Y, Liu J, Liu Z. Cognitive behavioral stress management effectively facilitates neurologic recovery, alleviates mental distress, and elevates health status in acute ischemic stroke patients. Braz J Med Biol Res 2024;57:e13689.
3. Tauil CB, Grippe TC, Dias RM, Dias-Carneiro RPC, Carneiro NM, Aguilar ACR, et al. Suicidal ideation, anxiety, and depression in patients with multiple sclerosis. Arq Neuropsiquiatr 2018;76:296–301.
4. Boeschoten RE, Braamse AMJ, Beekman ATF, Cuijpers P, van Oppen P, Dekker J, et al. Prevalence of depression and anxiety in Multiple Sclerosis: A systematic review and meta-analysis. J Neurol Sci 2017;372:331–31.
5. Pahlavanzadeh S, Abbasi S, Alimohammadi N. The effect of group cognitive behavioral therapy on stress, anxiety, and depression of women with multiple sclerosis. Iran J Nurs Midwifery Res 2017;22:271–5.
6. Tan-Kristanto S, Kiropoulos LA. Resilience, self-efficacy, coping styles and depressive and anxiety symptoms in those newly diagnosed with multiple sclerosis. Psychol Health Med 2015;20:635–45.
7. Henry A, Tourbah A, Camus G, Deschamps R, Mailhan L, Castex C, et al. Anxiety and depression in patients with multiple sclerosis: The mediating effects of perceived social support. Mult Scler Relat Disord 2019;27:46–51.
8. Akrami E, Alsancak F. Multiple skleroz hastalarının psikososyal sorunlarına ilişkin bir inceleme. Pearson Journal 2020;5:12–26.
9. Dennison L, Moss-Morris R, Silber E, Galea I, Chalder T. Cognitive and behavioural correlates of different domains of psychological adjustment in early-stage multiple sclerosis. J Psychosom Res 2010;69:353–61.
10. Yavuz E, Saydam R. Multiple skleroz tanısı alan bireylerin sosyal destek mekanizmaları ile psikiyatrik semptomlarının incelenmesi. Batı Karadeniz Tıp Dergisi. 2023;7:279–88.
11. Baetge SJ, Filser M, Renner A, Raithel LM, Lau S, Pöttgen J, et al. Supporting brain health in multiple sclerosis: exploring the potential of neuroeducation combined with practical mindfulness exercises in the management of neuropsychological symptoms. J Neurol 2023;270:3058–71.
12. Sumowski JF, Benedict R, Enzinger C, Filippi M, Geurts JJ, Hamalainen P, et al. Cognition in multiple sclerosis: State of the field and priorities for the future. Neurology 2018;90:278–88.
13. Carletto S, Borghi M, Francone D, Scavelli F, Bertino G, Cavallo M, et al. The efficacy of a mindfulness based ıntervention for depressive symptoms in patients with multiple sclerosis and their caregivers: study protocol for a randomized controlled clinical trial. BMC Neurol 2016;16:7.
14. De la Torre GG, Mato I, Doval S, Espinosa R, Moya M, Cantero R, et al. Neurocognitive and emotional status after one-year of mindfulness-based intervention in patients with relapsing-remitting multiple sclerosis. Appl Neuropsychol Adult 2022;29:183–92.

15. Nauta IM, Bertens D, Fasotti L, Fieldhouse J, Uitdehaag BMJ, Kessels RPC, et al. Cognitive rehabilitation and mindfulness reduce cognitive complaints in multiple sclerosis (REMIND-MS): A randomized controlled trial. Mult Scler Relat Disord 2023;71:104529.
16. Bach D, Groesbeck G, Stapleton P, Sims R, Blickheuser K, Church D. Clinical EFT (emotional freedom techniques) ımproves multiple physiological markers of health. J Evid Based Integr Med 2019;24:2515690X18823691.
17. Rancour P. The emotional freedom technique: finally, a unifying theory for the practice of holistic nursing, or too good to be true? J Holist Nurs 2017;35:382–8.
18. Nelms JA, Castel L. A systematic review and meta-analysis of randomized and nonrandomized trials of clinical emotional freedom techniques (eft) for the treatment of depression. Explore (NY) 2016;12:416–26.
19. Church D, House D. Borrowing benefits: group treatment with clinical emotional freedom techniques ıs associated with simultaneous reductions in posttraumatic stress disorder, anxiety, and depression symptoms. J Evid Based Integr Med 2018;23:2156587218756510.
20. Marrie RA, Patel R, Bernstein CN, Bolton JM, Graff LA, Marriott JJ, et al. Anxiety and depression affect performance on the symbol digit modalities test over time in MS and other immune disorders. Mult Scler 2021;27:1284–92.
21. Niino M, Fukumoto S, Okuno T, Sanjo N, Fukaura H, Mori M, et al. Correlation of the symbol digit modalities test with the quality of life and depression in Japanese patients with multiple sclerosis. Mult Scler Relat Disord 2022;57:103427.
22. Patel VP, Feinstein A. The link between depression and performance on the Symbol Digit Modalities Test: Mechanisms and clinical significance. Mult Scler 2019;25:118–21.
23. Church D, Stapleton P, Yang A, Gallo F. Is tapping on acupuncture points an active ıngredient in emotional freedom techniques? A systematic review and meta-analysis of comparative studies. J Nerv Ment Dis 2018;206:783–93.
24. Clond M. Emotional freedom techniques for anxiety: a systematic review with meta-analysis. J Nerv Ment Dis 2016;204:388–95.
25. Karatzias T, Power K, Brown K, McGoldrick T, Begum M, Young J, et al. A controlled comparison of the effectiveness and efficiency of two psychological therapies for posttraumatic stress disorder: eye movement desensitization and reprocessing vs. emotional freedom techniques. J Nerv Ment Dis 2011;199:372–8.
26. Czerwińska-Mazur K, Kulesa-Mrowiecka M, Kopański Z, Tabak J, Mazurek M. Multiple sclerosis–classification, epidemiology and etiology. J Public Health Nurs Med Rescue 2018;8–11.
27. Brattberg G. Self-administered EFT (Emotional Freedom Techniques) in individuals with fibromyalgia: A randomized trial. Integrative Medicine 2008;7:30–5.
28. Patterson SL. The effect of emotional freedom technique on stress and anxiety in nursing students: A pilot study. Nurse Educ Today 2016;40:104–10.
29. Church D, Yount G, Brooks AJ. The effect of emotional freedom techniques on stress biochemistry: a randomized controlled trial. J Nerv Ment Dis 2012;200(10):891–6.
30. Dincer B, Inangil D. The effect of Emotional Freedom Techniques on nurses' stress, anxiety, and burnout levels during the COVID-19 pandemic: A randomized controlled trial. Explore (NY). 2021;17:109–14.
31. Rowe JE. The effects of EFT on long-term psychological symptoms. Counseling and Clinical Psychology Journal. 2005;2:104–11.
32. Chatwin H, Stapleton P, Porter B, Devine S, Sheldon T. The effectiveness of cognitive behavioral therapy and emotional freedom techniques in reducing depression and anxiety among adults: a pilot study. Integr Med (Encinitas) 2016;15:27–34.
33. Dincer B, Özçelik SK, Özer Z, Bahçecik N. Breathing therapy and emotional freedom techniques on public speaking anxiety in Turkish nursing students: A randomized controlled study. Explore (NY) 2022;18:226–33.

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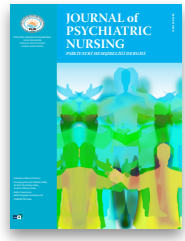

Systematic Review

Current approaches to assessing and managing anger and aggression

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Abstract

Objectives: This study aims to systematically review previously published studies conducted in Türkiye on the assessment and management of anger and aggression among adolescents and young adults and to present the general characteristics of the selected studies.

Methods: This study examined theses and articles published in Türkiye between 2013 and 2023 on the subject among adolescents and young adults aged 14–25. Online search engines (Google Scholar, YÖK) were used to access the studies. The keywords "anger," "anger management," "anger management training," "anger control," "anger control training," and "aggression" were used when searching databases. The PRISMA checklist, preferred for systematic reviews and meta-analyses, was used when reviewing studies in this systematic review.

Results: A total of 1,354 studies were retrieved through electronic databases. Of these, 1,261 studies that did not meet the criteria were removed. Ultimately, 21 studies were systematically presented. It was found that the Trait Anger-Anger Style Scale is the most widely used measurement tool for assessing anger, while the Aggression Scale, the Reactive-Proactive Aggression Scale, and the Buss-Perry Aggression Scale have been used for assessing aggression. Cognitive-behavioral and skill-based approaches to managing anger and aggression in adolescents and young adults have been determined to be the most widely studied and empirically validated treatment approaches.

Conclusion: In conclusion, the results of this systematic review are crucial for mental health and psychiatric nurses to know and use appropriate assessment tools when assessing individuals with anger expression problems. Mental health and psychiatric nurses' knowledge of cognitive behavioral therapy-based anger management interventions and their ability to integrate these methods into nursing care will improve the quality of healthcare. Further studies utilizing techniques from different approaches to anger management are recommended.

Keywords: Aggression; aggression management; anger; anger management

Anger is an emotion experienced in relation to both personality structure and psychological problems.[1] Anger and its expression have become significant public health and mental health concerns, especially for children, adolescents, and young adults today. Epidemiological studies have shown that problems related to anger, such as oppositional behavior, verbal and physical aggression, violence, and irritability, are among the reasons children are referred to mental health services.[2–4] The signs of anger are commonly observed among childhood and adulthood mental disorders, such as personality disorders, attention deficit hyperactivity disorder, conduct disorder, oppositional defiant disorder, bipolar disorder, organic brain diseases, and various conditions resulting from trauma.[5] The type of anger most commonly encountered by clinical nurses in both inpatient and outpatient treatment settings is uncontrolled anger.[6] In this study, the initial aim is to present the relevant literature on the structure of anger, the concepts of anger, hostility, and aggression, the expression of

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anger, risk factors, and the clinical aspects and consequences of anger. Subsequently, the measurement tools and intervention approaches currently used in our country for the management of anger and aggression are systematically presented.

The Structure of Anger

Raymond W. Novaco[7] describes anger as a primary emotion that has adaptive functions connected to survival mechanisms, which are inherently biological, psychological, and social in nature. This emotion is initiated by cognitive processes such as the perception of threat and continues with physiological responses, including mobilization of energy, muscle tension, increased heart rate, elevated blood pressure, and higher levels of adrenaline and noradrenaline. While these physiological changes alone are not sufficient to result in aggressive or violent behavior, anger can trigger such behaviors when regulatory control mechanisms fail. Uncontrolled anger, in addition to being a risk factor for violence, can also impair social relationships, work performance, and health, manifesting itself in various social domains.[7–9]

Some researchers have stated that anger is a human emotion and that the arousal (activation) of anger is connected to the perception of threat and self-preservation. Therefore, anger can be seen as a fundamental human emotion programmed for survival and sustaining life.[7,10] As a normal human emotion, anger can mobilize psychological resources in the face of distress, energize behaviors to solve problems, and foster determination. Anger serves as a protector of self-esteem, functions as a means of expressing negative emotions, strengthens the ability to voice complaints, and increases determination to overcome obstacles to happiness and desires.[11] In this sense, anger is a necessary emotion for sustaining one's life.

On the other hand, according to other researchers, anger is defined as a state of aroused hostility toward someone or something perceived as the source of a negative event or as a basic and subjectively experienced negative emotion that results from the obstruction of a goal or from provocation, such as verbal or physical attack.[7,9] The reason anger is classified as a negative emotion may stem from its association with aggression and hostility. In such problematic situations, the main feature of anger is its "uncontrolled" nature. The activation, expression, and experience of anger do not occur appropriately. Although this normal emotion does not automatically have the status of a problem, it becomes problematic due to its reciprocal links with life stress, psychopathology, and harmful behaviors, leading to negative outcomes for oneself and others.[11] Judging whether someone has an "anger problem" depends on observations and the sociocultural environment in which they are situated. Evaluation can be based on the anger patterns the individual uses (such as how often they get angry, the intensity of the anger experienced, how long the arousal lasts, and how the person behaves when angry).[11]

What is presently known on this subject?

- Anger is an emotion experienced in relation to both personality structure and psychological problems.
- Anger and its expression have become significant public health and mental health concerns, especially for children, adolescents, and young adults today.
- It is known that anger management training helps adolescents and young adults manage their levels of anger and ways of expressing anger.

What does this article add to the existing knowledge?

- It is shown that anger management training has positive effects on adolescents and young adults by reducing their levels of persistent anger, improving their ways of expressing anger, enhancing anger control skills, assertiveness, and communication abilities, as well as emotional regulation skills, psychological resilience, social problem-solving abilities, constructive conflict resolution skills, and decreasing aggressive behaviors, tendencies toward violence, hostile thoughts, and submissive behaviors.

What are the implications for practice?

- The studies included in the systematic review confirm the effectiveness of Cognitive Behavioral Therapy-based interventions for anger management.
- It is observed that there is a need for intervention programs based on different theoretical approaches.
- It is determined that almost all programs are effective, but significant results are not achieved in some sub-problems.

Anger, Hostility, and Aggression

Although the concept of anger is sometimes used interchangeably with hostility and aggression, there are significant conceptual distinctions and theoretical relationships among these three constructs.[9,12]

Anger is generally considered a simpler concept than hostility or aggression. Spielberger et al.[13] view the emotion of anger in terms of both trait and state dimensions. According to them, state anger is an emotional condition that reflects objective feelings such as tension, irritation, annoyance, or rage in response to goal blocking or perceived injustice. Trait anger, on the other hand, refers to how frequently state anger is typically experienced. The concept of anger generally involves an emotional state that ranges in intensity from mild annoyance or irritation to intense fury.[13] Although hostility often includes feelings of anger, the term refers to attitudes made up of associations that motivate aggressive behaviors aimed at destroying objects or harming others.[9] In the Buss and Perry Aggression Questionnaire, the hostility subscale includes items that refer to thoughts of being treated unfairly in life, while the anger subscale contains items related to becoming angry easily and being unable to control anger.[14] Hostile thoughts include themes of cynicism, contempt, jealousy, distrust, resentment, suspicion, and injustice. Hostility can exist independently as a stream of thought that precedes a full anger response, or it can take the form of rumination. Hostile thoughts typically arise as a reaction to the perception that another person intends to cause harm. Some people react more strongly than others to certain types of social threats, such as injustice or situations that threaten their self-esteem.[9] While the concepts of anger and hostility refer to emotions and attitudes, the concept of aggression gen-

erally encompasses destructive or punitive behaviors directed toward other people or objects.[13] Aggression is defined as a behavior directed with the intent to harm someone.[9]

In conclusion, these three concepts can be considered as follows: "anger" as an emotion, "hostility" as a thought, and "aggression" as a behavior. When these three dimensions come together, they form what is known as the AHA syndrome (Anger, Hostility, and Aggression). Anger hereby serves as the emotional component, hostile thoughts as the attitudinal component, and aggression as the behavioral component.[15]

Expression of Anger

Experiencing anger and expressing it are distinct matters. Most of the problematic aspects of anger are related to its mode of expression.[13,16] To experience anger is to feel an emotional state often accompanied by physiological reactions. Anger expression, on the other hand, is the behavioral aspect of how a person manages and copes with their feelings of anger.[13] While expressing anger may be culturally frowned upon in some societies, it is perfectly normal to get angry and express it from time to time.[17] The expression of anger can take many forms, including violence, self-harm, and, more commonly, physical and verbal aggression. The expression of anger can also manifest in different ways depending on an individual's developmental age.[6] However, anger can provide valuable information and be constructive. A person may genuinely experience disrespect, insult, or some other injustice. In some situations, the offender may have unintentionally caused provocation. Expressing a grievance can help repair a social relationship constructively. In certain cases, anger may be morally justified and serve to deter unethical behavior.[9]

Spielberger et al.[13] divide forms of anger expression into three categories: anger-in, anger-out, and anger control. Anger-in is defined as directing anger toward oneself, denying thoughts or memories related to the anger-provoking situation, or denying the feeling of anger itself. The greatest risk of anger that is unexpressed and becomes chronic is its negative impact on an individual's health. Anger that is not properly expressed and is suppressed is found to be associated with gastrointestinal symptoms[18] and postpartum depression.[19] Anger-out is defined as expressing anger toward another person or object in various ways, including physical actions, criticism, insult, or verbal abuse. When anger is not expressed appropriately and is directed outward, it is found to be significantly higher in clinical samples with emotional and behavioral problems compared to healthy controls.[20] It is determined that elevated levels of both inwardly and outwardly directed anger, compared to healthy controls, predispose individuals to suicide attempts and social anxiety disorder.[21,22] Anger control is defined as the effort to manage, control, and express feelings of anger by using non-aggressive words while respecting the rights and feelings of others.[13] It is found that the level of anger control is lower in individuals with suicide attempts and social anxiety disorder than in healthy controls.[21,22] Preventing and regulating uncontrolled anger should be among the priorities of mental health, as anger can have serious consequences for physical and psychological well-being. There is no doubt about the relationship between anger and various behavioral, personality, and psychosomatic disorders.[23,24]

Risk Factors Related to the Level and Expression of Anger

It is determined that there are numerous factors influencing the level and expression of anger. Özmen et al.[25] have found that the most significant factors affecting adolescents' anger levels and styles of expression are anxiety, gender, and family type. In a study on adolescents, Anjanappa et al.[26] determine that a child's age, family structure, gender, and mother's educational level are statistically significantly associated with adolescents' levels of anger. It is also observed that males experience anger more frequently throughout the day compared to females.[26]

In a study conducted with adults, it is found that gender, ethnicity, income level, marital status, employment status, adverse childhood experiences (such as physical abuse and neglect), having a parent with behavioral problems, having had a psychiatric illness in the past twelve months, and having a physically violent partner during adulthood are all associated with higher levels of anger. It is seen that among psychiatric illnesses, individuals diagnosed with bipolar disorder, substance use disorders, and psychotic disorders exhibit the highest levels of anger. It is determined that the likelihood of all personality disorders is also significantly higher among angry individuals. The personality disorders most frequently observed in this group are borderline, schizotypal, narcissistic, and dependent personality disorders. Individuals with high levels of anger are also found to have a significantly greater likelihood of using substances, alcohol, and tobacco compared to those who are not angry.[27]

Karababa and Dilmaç[28] have identified human values, Ayyıldız and Ekin[29] have found attachment styles, and Kerman[30] has established alexithymia and emotional intelligence as factors related to the level and expression of anger.

Anger as a Clinical Problem and Its Consequences

In the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), a mental disorder is defined as "a syndrome characterized by a clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or

developmental processes underlying mental functioning."[5] Therefore, anger, which can lead to negative outcomes such as violence and incarceration, does not in itself constitute a mental disorder. However, aggressive or severe anger increases the likelihood of significant dysfunction in actions, thoughts, or emotional control, making it maladaptive.

Anger is not classified as a separate diagnostic category in the DSM-5, unlike depression and anxiety. However, many disorders in the diagnostic system list anger as a symptom.[5] On the other hand, anger is present as a symptom in many disorders within the diagnostic classification system. Anger experiences vary in intensity, ranging from occasional, everyday anger to clinical levels that lead to serious consequences such as physical aggression and violence.

When considering anger as a symptom accepted by psychiatric classification systems, it should be recognized that uncontrolled anger indicates a disorder. Uncontrolled anger is defined as the inability to regulate anger, expressing it inappropriately, feeling it excessively, directing it toward unsuitable people or objects, or expressing it due to external motivations. When individuals experience and express anger in ways that are entirely disproportionate to the triggering circumstances, anger becomes uncontrolled. In these scenarios, anger responses are not appropriate to the precipitating events or interpretations; what stands out is the magnitude and intensity of the individual's anger reactions. A common feature of anger-related disorders is excessive outward expression of aggression.[31]

Intense anger can lead to negative outcomes in various contexts, such as reactive aggression, child and spousal abuse, dangerous driving, road rage, assault, and even homicide.[9] Anger and closely related traits such as hostility and aggression are generally associated with an increased risk of chronic vascular diseases and, more specifically, chronic heart disease.[32,33]

Whether anger is problematic can be measured by its frequency, intensity, duration, and mode of expression. Uncontrolled anger emerges in various personality, psychosomatic, and behavioral disorders, as well as in schizophrenia, mood disorders, organic brain disorders, impulse control disorders, and conditions arising from trauma.[34,35] It is found in one study that destructive anger outbursts are associated with newly onset major depression, generalized anxiety disorder, panic disorder, and suicidal ideation.[36]

In psychopathologies, uncontrolled anger arises as a product of transdiagnostic processes such as selective attention, threat perception, interpretation bias, rumination, and deficits in self-control. As defined by clinical staff and patients themselves, anger is a common issue among both inpatient and outpatient psychiatric patients. In fact, it is seen that anger is related to violent behaviors before, during, and after psychiatric hospitalization.[7] Individuals with various psychiatric disorders may suffer from feelings of anger that sometimes lead to maladaptive (e.g., aggressive) behaviors. Persistent anger and anger attacks are linked to depressive and anxiety disorders, although the strength of this connection may differ between the two types of anger.[37,38]

Materials and Method

Study Protocol

The aim of this study is to introduce some of the commonly used measurement tools for the assessment and intervention of anger and aggression. In addition, this study systematically reviews previously conducted and published studies in our country regarding the management of anger and aggression in adolescents and young adults, presenting the general characteristics of studies that meet the research criteria (type of study, year of study, sample size, profession of the practitioner, setting, underlying therapeutic approach, number of sessions, duration, frequency, study design, outcome variables, presence of effect size, follow-up, and level of evidence). Accordingly, graduate theses and published research articles from our country have been examined. As a sample research protocol, the PRISMA checklist (PRISMA Checklist 2020), recommended by Grove,[39] has been used for systematic reviews.[40] The PRISMA guideline is still considered the gold standard for reporting systematic reviews and meta-analyses.

Inclusion Criteria

The selection criteria for studies included in this systematic review have been determined according to PICO (sample, intervention, comparison, and outcome) (Table 1).[41]

Exclusion Criteria

The excluded works include books, letters to the editor, systematic review studies, abstracts, posters, and conference

Table 1. PICO Format

P (Participants)	Adolescents and young adults aged 14–25
I (Interventions)	Anger management training based on non-pharmacological therapy, anger control training
C (Comparison)	Comparison with the group that did not receive anger management training, with pre-intervention status, and with other anger management interventions based on different approaches
O (Outcomes)	Trait and state anger, anger expression styles, aggressive behavior
S (Study design)	Experimental and quasi-experimental studies

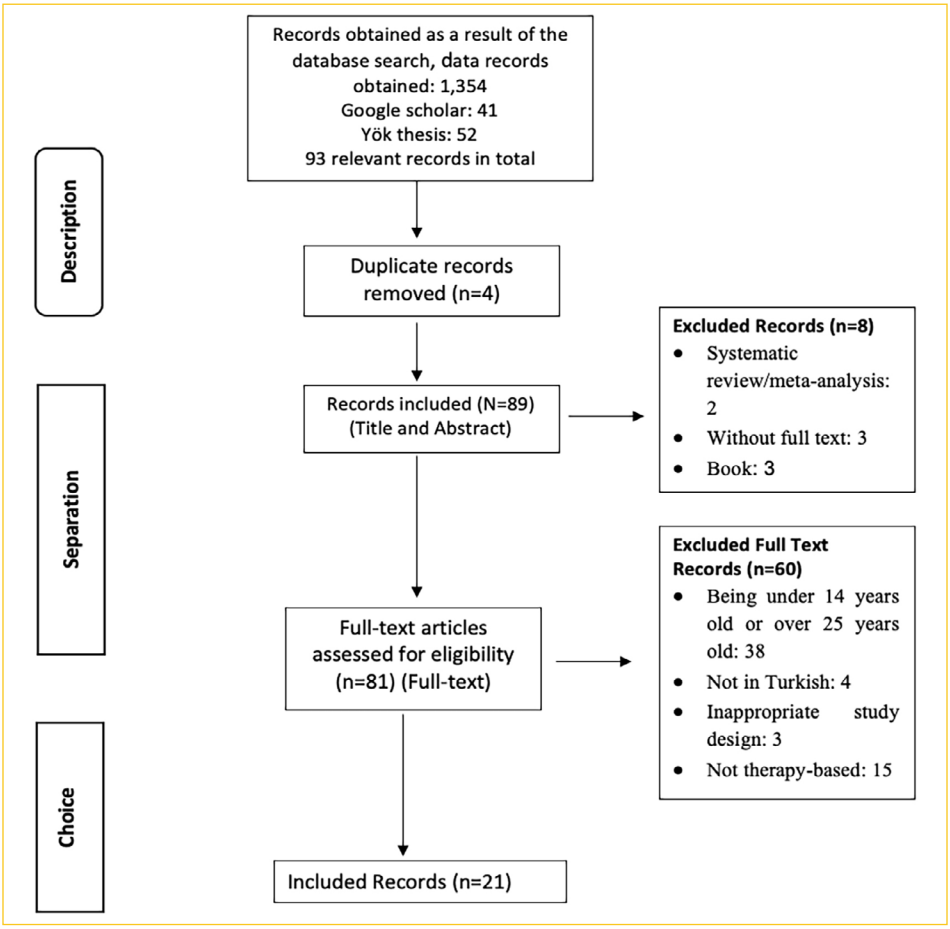

Figure 1. PRISMA Flow Chart.

materials, other non-experimental or non-quasi-experimental studies, studies without full text, studies not published in Turkish, and studies not published in our country.

Research Questions

- What measurement tools are used in the assessment of anger and aggression?
- What are the current approaches to the management of anger and aggression?

Data Collection Process

During the data collection process of the research, theses and articles in Turkish with full text available from 2013 to 2023 have been reviewed. If a thesis has also been published as a Turkish article, the article has been preferred. For the literature search, online search engines (Google Scholar, YÖK Thesis) have been used. Search keywords have been adjusted according to MeSH terms for health research. The search terms used include: "anger," "anger management" or "anger management training" or "anger control," "anger control training," and "aggression."

The electronic database search has been conducted independently by two authors (FKS, OUT). Any discrepancies have been resolved by consulting other researchers (NBD, BA, NK) for consensus. Through electronic databases and online sources, a total of 1,354 studies have been accessed. Of these, 1,261 studies have been excluded because they are not relevant to the research. The remaining 93 theses and articles have been reviewed according to the inclusion and exclusion criteria. Finally, 21 documents have been systematically analyzed. The PRISMA flow diagram is shown in Figure 1.

Data Analysis

After obtaining the full texts, the articles have been reviewed. The articles and theses have been categorized according to their authors, years, number of sessions, duration and frequency, sample characteristics, intervention method, outcomes, effect size, follow-up status, and level of evidence. The results of anger management training in the articles and theses have been emphasized.

Results

Descriptive Characteristics of the Studies

While reviewing the studies, it is found that the total sample size was 48.19±34.97 (ranging from 18 to 147), 38.1% are doctoral theses, 57% of the studies are conducted be-

Table 2. Descriptive characteristics of the studies selected for systematic review

	n	%
Type of publication		
Doctoral dissertation	8	38.1
Master's thesis	7	33.3
Article	6	28.6
Year of study		
2013-2017	9	43
2018-2023	12	57
Design		
Quasi-experimental	12	57.1
Randomized controlled trial	9	42.9
Follow-up		
Yes	10	47.6
No	11	52.4
Effect size		
Yes	6	28.6
No	15	71.4
Level of evidence		
II	9	42.9
III	12	57.1
Number of sessions		
2 sessions	1	4.8
5 sessions	1	4.8
6 sessions	4	19
7 sessions	2	9.5
8 sessions	4	19
9 sessions	1	4.8
10 sessions	5	23.8
12 sessions	2	9.5
30 sessions	1	4.8
Session duration		
40-50 min.	5	23.8
55-60 min.	4	19
70-90 min.	8	38.1
120 min.	3	14.3
Not mentioned	1	4.8
Session frequency		
Every two weeks	1	4.8
Once a week	18	85.7
Once-twice a week	1	4.8
Twice a week	1	4.8
Profession of the program implementer		
Specialist nurse	10	47.6
Guidance and psychological counseling specialist	9	42.9
Clinical psychologist	2	9.5
Environment where the study was conducted		
Penitentiary institution	2	9.5
Children's home	1	4.8
School (high school)	14	66.7
School (higher education)	4	19
Aproaches		
CBT	9	42.9
CBT and Rational Emotive Behavior Therapy	1	4.8
CBT and Gross Emotion Regulation Model	1	4.8
Rational Emotive Behavior Therapy	1	4.8
Mindfulness	1	4.8
Creative Drama	1	4.8
Psychodrama	1	4.8
Systemic Family Therapies	1	4.8
Dialectical Behavior Therapy	1	4.8
Acceptance and Commitment Therapy	1	4.8
Solution-Based Approach	2	9.5
Emotional Freedom Technique, Progressive Muscle Relaxation Technique	1	4.8
Outcome variable		
Trait anger/anger expression	8	38.1
Anger Control	9	42.9
Aggression	2	9.5
Anger and aggression	2	9.5
Scales used in the assessment of anger and aggression		
Trait Anger/Anger Expression Scales	15	71.4
Buss-Perry Aggression Questionnaire	1	4.8
Reactive-Proactive Aggression Questionnaire	1	4.8
Aggression Questionnaire /Scale	2	9.5
Brief symptom Inventory	1	4.8
Multidimensional Anger Scale	1	4.8
	Min-Max	**Mean±SD**
Total sample size	18-147	48.19±34.97

CBT: Cognitive Behavioral Therapy

tween 2018 and 2023, 57.1% are quasi-experimental, follow-up measurements are present in 52.4%, and effect size is not reported in 71.4%. Additionally, 57.1% are classified as Level III evidence, 23.8% include 10 sessions, 38.1% have session durations of 70–90 minutes, and 85.7% have sessions held once per week. It is also determined that 47.6% of the interventions are carried out by specialist nurses, 66.7% of the study settings are schools (high schools), and 42.9% of the primary outcome variables measured are anger control (Table 2).

Table 3. Scales that can be used to assess anger and aggression

Scale	Writer(s)	Age(s)	Source
Trait Anger-Anger Expression Scales (STAXI)	Özer, 1994[42]	High School, university and adults	https://toad.halileksi.net/
State-Trait Anger Expression Inventory for Children and Adolscents (STAXI-2 C/A)	Kıralp, 2013[43]	9-18 ages	https://tez.yok.gov.tr/
Brief symptom Inventory (BFI)	Şahin et al. (2002)[47]	Adolescents	https://toad.halileksi.net/olcek/kisa-semptom-envanteri-kse/
Multidimensional Anger Scale (MAS)	Balkaya & Şahin, 2003[45]	14-50 ages	https://toad.halileksi.net/
Aggression Questionnaire (AQ) Aggressiveness Scale (AS)	Can, 2002[46] Tuzgöl Dost[45]	9 and above 14-15 ages	https://tez.yok.gov.tr/ https://toad.halileksi.net/
Buss-Perry Aggression Questionnaire (BAQ)	Madran, 2012[14]	17-20 ages	https://scholar.google.com/
Reactive-Proactive Aggression Questionnaire (RPQ)	Cenkseven- Önder et al. 2016[48]	10-19 ages	https://scholar.google.com/

Assessment of Anger and Aggression

When examining the measurement tools used to assess anger and aggression, it is found that the Trait Anger–Anger Expression Scales are used in 71.4% of the studies, while the Aggression Scale is used in 9.5% of the studies. The Reactive-Proactive Aggression Scale, the Multidimensional Anger Scale, the Buss-Perry Aggression Questionnaire, and the Brief Symptom Inventory are each used at a similar rate of 4.8% (Table 2, 3).

Current Approaches in the Management of Anger and Aggression

According to Table 2, it is found that 42.9% of the intervention programs are based on Cognitive Behavioral Therapy (CBT), while 9.5% are grounded in the Solution-Focused Approach. The remaining schools of thought are each used in a single study and with equal frequency. These approaches include combinations such as CBT and Rational Emotive Behavior Therapy, CBT and the Gross Emotion Regulation Model, as well as Mindfulness, Creative Drama, Psychodrama, Systemic Family Therapies, Dialectical Behavior Therapy, Acceptance and Commitment Therapy, Emotional Freedom Technique (EFT), and Progressive Muscle Relaxation Technique (PMRT). The characteristics of the intervention programs are presented in Tables 2 and Appendix 1-3.

Discussion

In this systematic review, the aim is to identify current approaches for the assessment and management of anger and aggression. When nurses assess anger, they should gather information from multiple sources regarding the current problem, past psychiatric history, family history, developmental and social background, and psychosocial stressors. In addition, certain measurement tools may be utilized by nurses to evaluate anger and aggression in adolescents and young adults. In line with the first research question, the most commonly used assessment tools for anger and aggression are the Trait Anger–Anger Expression Style Scale and the Aggression Scale.

The Trait Anger Scale was developed and studied by Charles D. Spielberger and colleagues beginning in the early 1980s, with the Anger Expression Style Scales introduced in 1988.[42] Similar to his approach to anxiety, Spielberger conceptualizes both state and trait perspectives regarding anger. State anger measures the intensity of anger experienced at a particular moment, ranging from mild irritation to severe anger in response to provocation. Trait anger, on the other hand, assesses how frequently a person generally experiences anger.[42]

Besides examining the distinction between state and trait anger, it is also considered important to assess how anger is expressed. Therefore, the Anger Expression Style Scales were developed, consisting of three subscales: Anger-In, Anger-Out, and Anger Control.[9,42] In our country, the first validity and reliability studies of these scales were conducted by Özer[31] in a sample of high school students, university students, and adults, and subsequently in individuals with hypertension. Later, Kıralp[43] evaluated the validity and reliability of the State-Trait Anger Expression Inventory for Children and Adolescents in a sample aged 9 to 18 years.

According to the current research findings, other less frequently used assessment tools include the Aggression Scale, Brief Symptom Inventory, Multidimensional Anger Scale, Buss-Perry Aggression Questionnaire, and the Reactive-Proactive Aggression Questionnaire. Can[44] conducted the validity and reliability studies of the Aggression Scale in his specialization thesis. The scale requires the use of separate forms for ages 9–18, 19–39, and over 40. It evaluates aggression across five subscales: physical aggression, verbal aggression, anger, hostility, and indirect aggression.[44] Another Aggression Scale was developed by Tuzgöl Dost[45] in a master's thesis in 1998. This scale assesses aggression in five dimensions: overt, covert, physical, verbal, and indirect aggression.[45]

The Multidimensional Anger Scale was developed in Türkiye by Balkaya and Şahin in 2003. This tool evaluates anger through five subscales based on self-report: symptoms of anger, situations

triggering anger, thoughts related to anger, behaviors associated with anger, and interpersonal anger.[46] The Brief Symptom Inventory, developed by Derogatis in 1992, is a 53-item assessment tool. In Türkiye, its validity and reliability study for an adolescent sample was conducted by Şahin et al.[47] in 2002. Similar to its use in normal samples, it serves as a multidimensional symptom screening tool to identify symptoms in psychiatric cases. The inventory consists of five dimensions—depression, anxiety, negative self, somatization, and hostility—across 53 items.[47]

The Buss-Perry Aggression Questionnaire was developed by Buss and Perry in 2002. In our country, its initial validity and reliability studies were conducted by Madran[14] with a sample of university students. The scale evaluates aggression across four subscales: physical aggression, verbal aggression, hostility, and anger.[14] The Reactive-Proactive Aggression Questionnaire was developed by Raine and colleagues in 2006, and its Turkish validity and reliability study was conducted by Cenkseven-Önder et al.[48] This tool assesses aggression in two dimensions: reactive aggression and proactive aggression (Table 3).

In line with the second research question, it is determined that CBT-based intervention programs have been developed and implemented to address various mediators of anger and aggressive behavior during adolescence and young adulthood. It is observed that cognitive and behavioral techniques are utilized in these programs. The most commonly used cognitive techniques include goal setting, the ABC model, identifying cognitive distortions, and developing alternative thoughts. The most commonly used behavioral techniques include role-playing, social skills training, breathing exercises, and relaxation techniques.

There are studies focusing on anger control training aimed at developing anger management skills.[49,50] According to Şahin Vural,[49] following the CBT-based anger management program, participants' levels of trait anger, anger directed inward, and anger expressed outward decrease, while their anger control skills improve. However, it is also determined that this effect does not persist in the follow-up scores. Aktaş[50] found that in CBT-based anger management training, scores for trait anger, anger expressed inward, and anger expressed outward decrease, while anger control scores increase; furthermore, these effects persist during follow-up.

There are studies focused on developing anger management skills through anger control training, assertiveness skills, communication skills, and emotion regulation skills. Kelleci et al.[51–53] developed a training program focused on enhancing anger management and assertiveness skills to achieve effective anger control. After the intervention, assertiveness skills increased in the experimental group, while scores for trait anger, anger-in, and anger-out decreased, and anger control scores increased. Keçialan and Ocakçı[52] developed a training program focused on anger management and communication skills to help individuals gain control over their anger. After the intervention, participants' communication skills improved, but there was no change in their levels of trait anger or anger expression styles.

Akdemir and Gündüz[53] developed a training program focused on emotion regulation skills to reduce aggressive behaviors. At the end of the training sessions, adolescents who participated in the intervention group showed a decrease in emotion regulation difficulties and in reactive-proactive aggressive behaviors compared to those who did not participate.[53]

There are also studies that focus on developing social skills and moral reasoning to reduce anger and aggression.[54,55] Aggression Replacement Training, which aims to help children and adolescents develop adequate social skills, moral reasoning, and anger management abilities—and thereby reduce aggressive behaviors—was adapted by Kaya.[54] As a result of the study, levels of trait anger decreased, anger control increased, levels of physical aggression decreased, hostile thoughts diminished, and social problem-solving skills improved.[54]

In the study by Diksaç,[55] the aim was to reduce aggressive behavior and improve anger management and communication skills by enhancing social skills. As a result, participants showed decreases in physical and verbal aggression and hostility, as well as reductions in their levels of trait anger, while their anger control skills increased. Participants also improved their active listening, self-awareness, self-disclosure, and empathy skills.[55]

The SCARE anger intervention program, which aims to help individuals develop the skills needed to manage anger, aggressive behavior, and feelings of hostility, was adapted by Çelik.[56] As a result of the study, trait anger levels decreased, while there was no change in psychological resilience, emotional problems, behavioral problems, hyperactivity, peer problems, or social behaviors.[56]

In another intervention program focused on submissive behaviors, the aim was to reduce levels of anger and hostility by providing skills and awareness. According to the results of the intervention, participants who attended the training showed reduced levels of submissive behavior, interpersonal sensitivity, anger, and hostility. This decrease was also maintained in the follow-up assessment.[57]

There are also anger management programs developed based on second-generation cognitive behavioral approaches, specifically Rational Emotive Behavior Therapy (REBT).[58,59] Çetinkaya[58] has developed an intervention program focused on problem-solving skill training in his study. As a result of the intervention, it is determined that students' problem-solving skills have improved; it is effective in the positive development of anger control and interpersonal relationships, and this effect has been maintained over a long period. Similarly, in Zorlu's[59] study, it is found that after the implementation of an intervention program focused on anger control training, participants gain anger

control skills, and there is a decrease in the levels of trait anger, anger directed inward, and anger expressed outward. This improvement is also maintained during the follow-up period.[59]

It is observed that psychoeducational programs based on third-generation cognitive behavioral approaches (Acceptance and Commitment Therapy, Dialectical Behavior Therapy, and Mindfulness) are used to enhance anger management skills.[60–62] In his Acceptance and Commitment Therapy-based training program, Genç[60] aims to have a positive effect on psychological flexibility, empathy, and anger in children driven to commit offenses. In the training sessions, the explorer-observer-advisor values model, which teaches making behavioral choices aligned with one's values rather than acting on unhelpful impulses or immediate circumstances, is used as the foundation. After the intervention, levels of trait anger and anger-out have decreased, while anger control levels have increased.[60]

In the training program developed by Aydil[61] based on Dialectical Behavior Therapy, two sessions focus on mindfulness, four sessions on emotion regulation, and two sessions on increasing distress tolerance. After the training, participants' levels of trait anger and difficulties in emotion regulation have decreased, while there is no change in their distress tolerance skills.[61] Gülcan[62] has developed a mindfulness-based intervention program aimed at influencing persistent anger and anger expression style. After the intervention, participants' levels of trait anger, anger-in, and anger-out have decreased, while their anger control skills have improved.[62]

In addition, there are also studies that examine cognitive behavioral approaches in combination with other approaches.[63,64] Hoşrik Evren[63] utilized the Emotional Freedom Technique, which is one of the energy therapies, and Progressive Muscle Relaxation (PMR), a cognitive behavioral technique used in stress management, aiming to determine their impact on the image of God, tendency to forgive, anger control, and anxiety. As a result of the study, no difference has been found between the groups in terms of anger control. The anger control subscale has increased significantly in the PMR group after the intervention.

In his study, Ekitli Beycan[64] has developed an anger regulation intervention program by integrating the rhythm component of music with Gross's emotion regulation model and basic cognitive behavioral techniques. In the study, four separate groups are included. One group has received no intervention, another has received a combination of both interventions, and the remaining two groups have each received only rhythm or only education as the sole intervention. It is found that the combined intervention is significantly more effective than the other interventions in reducing persistent anger and increasing anger control. This effect has been sustained over a long period.

In training programs based on the solution-focused approach (SFA), SFA techniques such as the miracle question, nightmare question, scaling technique, forecasting the future, giving praise, role-playing, journaling, magic globe, and the cheerleader technique have been used. The aim is for participants to recognize, understand, and control their feelings of anger, as well as to reduce their tendencies toward violence.[65,66] According to Siyez and Tuna,[65] persistent anger and anger-out levels have decreased significantly compared to the control and placebo groups, while anger control levels have increased compared to the placebo group. There is no change in communication skills among the three groups. In Akbaş's [66] study, anger levels have also decreased, anger control levels have increased, and the tendency toward violence has decreased.

There is an intervention program developed for adolescents who exhibit aggressive behavior, which is based on family therapy theories and addresses both parents and adolescents. Kılıçarslan and Atıcı[67] have developed and evaluated a nonviolent resistance program for parents and an educational program for adolescents aimed at coping with violence and aggression. The program designed for adolescents aims to help them cope with tension experienced during conflicts by developing constructive conflict resolution, communication, and social skills, instead of resorting to attitudes and behaviors involving aggression, hostility, resentment, and hatred. In the parent sessions, skill-based sessions have been held, and additional sessions have been conducted that include family tree and family constellation techniques.

After the intervention, the level of aggressive behaviors among adolescents has decreased, and this reduction has continued during the follow-up. The Parental Stress Scale score has decreased, but this reduction does not persist at follow-up. The Family Assessment Scale score has decreased in the post-test, but this improvement is not maintained during follow-up.[67]

There is a study that addresses the theme of anger within a group setting by utilizing the principles and methods of psychodrama. According to Durmuş,[68] psychodrama techniques such as doubling, mirroring, role reversal, and surplus reality have been employed. Numerous objectives have been set, including enabling group members to recognize and express their feelings of anger, fostering awareness regarding their anger expression styles, and clearly expressing their anxiety about expressing anger. Other goals include allowing participants to experience different forms of emotional expression among others. As a result of the study, no significant differences have been found between the experimental and control groups in terms of trait anger and anger expression styles.[68]

There is a study demonstrating that creative drama-based interventions can be used in anger control groups. In their study, Çapacıoğlu and Demirtaş[69] focus on improving anger management skills in adolescents and address three outcomes related to anger: explaining the physical, emotional, and cog-

nitive effects caused by anger; evaluating the methods used to cope with anger in terms of their effects; and using constructive ways to cope with anger. As a result of the study, the level of trait anger has decreased in the experimental group, while the level of state anger has increased in the experimental group. Anger-out has decreased in the experimental group, while anger-in has increased. The anger control component is higher in the control group compared to the experimental group.

Limitation

The fact that the present study consists of Turkish-language theses and articles at the national level is a limitation.

Conclusion

Anger is a normal human emotion felt in response to unpleasant events. It has biological, psychological, social, and environmental determinants. Uncontrolled anger leads to impairment in functioning in various areas of life, is associated with several psychiatric disorders, and is a significant clinical issue affecting violent behavior in psychiatric patients. Therefore, knowing the tools used to assess anger and effective interventions for its management is of great importance for mental health and psychiatry professionals.

As seen in current research findings, the effectiveness of CBT-based interventions for anger control is well established. The results of the studies included in the systematic review confirm these effects. The scarcity of intervention programs based on different theoretical foundations is noteworthy. Thus, it is recommended to develop psychotherapeutic interventions based on various theoretical frameworks in this area. Furthermore, more research is needed that examines these variables together to determine whether the therapeutic reduction of anger in intervention programs is accompanied by a decrease in violent behaviors.

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References

1. Dilekler İ, Törenli Z, Selvi K. Öfkeye farklı açılardan bakış: Öfkenin mekanizması, farklı psikopatolojilerde öfke ve terapistin öfkesi. AYNA Klinik Psikoloji Derg 2014;1:44–59. [Article in Turkish]
2. Meriçli M, Yıldız T, Baykal S. Çocuk ve ergen psikiyatrisi polikliniğine başvuran olgularda sosyodemografik özellikler, semptom ve tanı dağılımı. Namık Kemal Tıp Derg 2019;7:140–5. [Article in Turkish]
3. Sevgen FH, Altun H. Çocuk ve ergen psikiyatrisi polikliniğine başvuran 0-5 yaş arası çocukların başvuru şikayetleri ve psikiyatrik tanıları. J Mood Dis 2017;7:205–11.
4. Novaco RW. Anger. In: Fink G, editor. Stress: Concepts, cognition, emotion, and behavior. 1st ed. London: Elsevier Academic Press; 2016. p.285–92.
5. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Köroğlu E, translator. Ankara: Hekimler Yayın Birliği; 2013.
6. Blake CS, Hamrin V. Current approaches to the assessment and management of anger and aggression in youth: a review. J Child Adolesc Psychiatr Nurs 2007;20:209–21.
7. Novaco RW. Anger. In: Zeigler-Hill V, Shackelford TK, editors. Encyclopedia of personality and individual differences. Cham: Springer; 2020.
8. Novaco RW, Taylor JL. Anger and assaultiveness of male forensic patients with developmental disabilities: links to volatile parents. Aggress Behav 2008;34:380–93.
9. Tremblay PF, Wheatley MJ. Anger. In: The Wiley encyclopedia of personality and individual differences: Personality processes and individual differences. 2020. p.315.
10. Dixon T. What is the history of anger a history of? Emotions: History, Culture, Society 2020;4:1–34.
11. Novaco RW, Taylor J. Anger. In: The handbook of adult clinical psychology. London: Routledge; 2016. p.380–404.
12. Spielberger CD, Reheiser EC, Sydeman SJ. Measuring the experience, expression, and control of anger. Issues Comprehensive Pediatric Nurs1995;18:207–32.
13. Spielberger CD, Jacobs G, Russell S, Crane RS. Assessment of anger: The state-trait anger scale. In: Advances in Personality Assessment. 1983;2:159–87.
14. Madran HAD. Buss-Perry saldırganlık ölçeğinin Türkçe formunun geçerlik ve güvenirlik çalışması. Türk Psikoloji Derg 2012;24:1–6.
15. Miçoğulları BO. Öfke kontrolü. Ankara: Akademisyen Kitabevi; 2018.
16. Taylor JL, Novaco RW, Brown T. Reductions in aggression and violence following cognitive behavioural anger treatment for detained patients with intellectual disabilities. J Intellect Disabil Res 2016;60:126–33.
17. Novaco RW. The functions and regulation of the arousal of anger. Am J Psychiatry 1976;133:1124–8.
18. Park YJ, Lee SJ, Shin NM, Shin H, Kang HC, Jin YT, et al. Anger, anger expression, cardiovascular risk factors, and gastrointestinal symptoms by hwa-byung symptoms in Korean adult women. Appl Nurs Res 2015;28:398–403.

19. Bruno A, Laganà AS, Leonardi V, Greco D, Merlino M, Vitale SG, et al. Inside-out: the role of anger experience and expression in the development of postpartum mood disorders. J Matern Fetal Neonatal Med 2018;31:3033–8.
20. Majeed S, Malık F. Anger experience, expression and control in chıildren with emotional-behavioural problems in comparison with normal children. J Pakistan Psychiatr Soc 2017;14:32–6.
21. Zatti C, de Oliveira SES, Guimarães LSP, Ratto CG, Waikamp V, Freitas LHM. Association between anger expression and attempted suicide at a general emergency hospital in the south of Brazil. Trends Psychiatry Psychother 2021;43:286–92.
22. Yağız AK, Kuğu N, Semiz M, Kavakcı Ö. The relationship of anger expression with body image and eating attitude in social anxiety disorder. Turk Psikiyatri Derg 2016;27:15–22.
23. Eshel N, Maron-Katz A, Wu W, Abu-Amara D, Marmar CR, Etkin A. Neural correlates of anger expression in patients with PTSD. Neuropsychopharmacology 2021;46:1635–42.
24. Gonzalez OI, Novaco RW, Reger MA, Gahm GA. Anger intensification with combat-related PTSD and depression comorbidity. Psychol Trauma 2016;8:9–16.
25. Özmen D, Özmen E, Çetinkaya A, Akil IÖ. Ergenlerde sürekli öfke ve öfke ifade tarzları. Anadolu Psikiyatri Derg 2016;17:65–73. [Article in Turkish]
26. Anjanappa S, Govindan R, Munivenkatappa M. Prevalence and expression of anger in school going adolescents. Arch Psychiatr Nurs 2020;34:35–40.
27. Okuda M, Picazo J, Olfson M, Hasin DS, Liu S-M, Bernardi S, et al. Prevalence and correlates of anger in the community: results from a national survey. CNS Spectrums 2015;20:130–9.
28. Karababa A, Dilmaç B. Ergenlerde insani değerlerin sürekli öfke ve öfke ifade biçimlerini yordamadaki rolü. İlkogretim Online 2015;14:1149–58. [Article in Turkish]
29. Ayyıldız E, Elkin N. Üniversite öğrencilerinin bağlanma stilleri ile sürekli öfke ve öfke ifade tarzları arasındaki ilişkinin incelenmesi. İstanbul Gelişim Üniv Sosyal Bil Derg 2016;3:51–68.
30. Kerman B, Özmen HE. 18-24 yaş arası bireylerde aleksitimi ve duygusal zekanın sürekli öfke ve öfke ifade tarzları üzerindeki etkisinin incelenmesi. Yüksek Lisans tezi. İstanbul: Fatih Sultan Mehmet Vakıf Üniversitesi Lisansüstü Eğitim Enstitüsü; 2021. [Thesis in Turkish]
31. Power M, Dalgleish T. Cognition and emotion: From order to disorder. 3rd ed. London: Psychology Press; 2016. p.266–301.
32. Fernandez E, Smith TW. Anger, hostility, and cardiovascular disease in the context of interpersonal relationships. In: Alvarenga ME, Byrne D, editors. Handbook of psychocardiology. 2016; p.665–83.
33. Tezuka K, Kubota Y, Ohira T, Shimizu Y, Yamagishi K, Umesawa M, et al. Anger expression and the risk of cardiovascular disease among urban and rural japanese residents: the circulatory risk in communities study. Psychosom Med 2020;82:215–23.
34. DiGuiseppe R, Tafrate RC. Understanding anger disorders. New York: Oxford University Press; 2007.
35. Novaco RW. Anger and psychopathology. In: Potegal M, Stemmler G, Spielberger C, editors. International handbook of anger. New York: Springer; 2010; p.465–97.
36. Smith DM, Meruelo A, Campbell-Sills L, Sun X, Kessler RC, Ursano RJ, et al. Pre-enlistment anger attacks and postenlistment mental disorders and suicidality among us army soldiers. JAMA Netw Open 2021;4:e2126626.
37. de Bles NJ, Rius Ottenheim N, van Hemert AM, Pütz LEH, van der Does AJW, Penninx BWJH, et al. Trait anger and anger attacks in relation to depressive and anxiety disorders. J Affect Disord 2019;259:259–65.
38. Forkus SR, Raudales AM, Rafiuddin HS, Weiss NH, Messman BA, Contractor AA. The posttraumatic stress disorder (ptsd) checklist for dsm-5: a systematic review of existing psychometric evidence. Clin Psychol (New York) 2023;30:110–21.
39. Grove SK. Evidence synthesis and strategies for implementing evidence-based practice. In: Gray JR, Grove SK, Cipher DJ. editors. Grove Burns & Grove's The Practice of Nursing Research Appraisal, Synthesis, and Generation of Evidence. 9th ed. Elsevier. 2020. p.1518–92.
40. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71.
41. Kim JH, Park H. Effects of smartphone-based mobile learning in nursing education: a systematic review and meta-analysis. Asian Nurs Res (Korean Soc Nurs Sci) 2019;13:20–9.
42. Özer AK. Surekli ofke ve öfke ifade tarzı olçekleri ön çalışması. Türk Psikoloji Derg 1994;9:26–35. [Article in Turkish]
43. Kıralp FS. Öfke yönetimi becerileri programının ilköğretim II. kademe öğrencilerinin öfke düzeylerine etkisi. Doktora tezi. İzmir: Dokuz Eylül Üniversitesi; 2013. [Thesis in Turkish]
44. Can S. "Aggression questionnaire" adlı Ölçeğin Türk Popülasyonunda Geçerlilik ve Güvenilirlik Çalışması. Uzmanlık tezi. İstanbul: Gülhane Askeri Tıp Akademisi Haydarpaşa Eğitim Hastanesi; 2002. [Thesis in Turkish]
45. Tuzgöl M. Ana-baba tutumları farklı lise öğrencilerinin saldırganlık düzeylerinin çeşitli değişkenler açısından incelenmesi. Türk Psikolojik Danışma Rehberlik Derg 2000;2:39–48.
46. Balkaya F, Şahin NH. Çok boyutlu öfke ölçeği. Türk Psikiyatri Derg 2003;14:192–202. [Article in Turkish]
47. Şahin NH, Batıgün AD, Uğurtaş S. Kısa Semptom Envanteri (KSE): Ergenler için kullanımının geçerlik, güvenilirlik ve faktör yapısı. Türk Psikiyatri Derg 2002;13:125–35.
48. Cenkseven-Önder F, Avci R, Çolakkadioglu O. Validity and reliability of the reactive-proactive aggression questionnaire in Turkish adolescents. Educ Res Rev 2016;11:1931–43.
49. Şahin Vural B. Bilişsel davranışçı terapiye dayalı lise düzeyi öğrencilere yönelik öfke kontrol becerileri psikoeğitim programının etkililiğinin incelenmesi. Yüksek Lisans Tezi. Giresun: Giresun Üniversitesi Sosyal Bilimler Enstitüsü; 2023. [Thesis in Turkish]
50. Aktaş B, Bostancı Daştan N. Bilişsel davranışçı yaklaşım temelli psikoeğitim programının hemşirelik öğrencilerinin öfke düzeyi ve öfke ifade tarzlarına etkisi. Doktora tezi. Kars: Kafkas Üniversitesi Sağlık Bilimleri Enstitüsü; 2022. [Thesis in Turkish]
51. Kelleci M, Avci D, Doğan S. Bilişsel davranışçı tekniklere dayalı öfke yönetimi programının lise öğrencilerinin öfke ve atılganlık düzeylerine etkisi. Anadolu Psikiyatri Derg 2014;15:296–303. [Article in Turkish]

52. Keçialan R, Ocakçı AF. Ergenlere yapılan sosyal beceri eğitiminin iletişim ve öfke kontrolüne etkisi. Med Sci 2013;13;58–65. [Article in Turkish]
53. Akdemir A, Gündüz B. Duygu düzenleme becerileri psikoeğitim programının ergenlerin duygu düzenleme güçlüğü ve reaktif-proaktif saldırganlıklarına etkisi. Eğitim Bilim 2022;47:311–34. [Article in Turkish]
54. Kaya F, Buzlu S. Suça yönelen ergenlerde agresyon replasman eğitiminin sorun çözme, öfke ve saldırgan davranış üzerine etkisi. Doktora tezi. İstanbul: İstanbul Üniversitesi Sağlık Bilimleri Enstitüsü; 2015. [Thesis in Turkish]
55. Diksaç E, Çetinkaya Yıldız E. BDT temelli sosyal beceri eğitimi programının şiddet suçundan mahkûm olmuş beliren yetişkinlerin saldırganlık, öfke yönetimi ve iletişim becerileri üzerindeki etkililiğinin incelenmesi. Yüksek Lisans tezi. Antalya: Akdeniz Üniversitesi Eğitim Bilimleri Enstitüsü; 2020. [Thesis in Turkish]
56. Çelik M, Uysal B. SCARE Öfke Müdahale Programı'nın, Suriyeli lise öğrencilerinin öfke kontrollerine ve psikolojik dayanıklılıklarına etkisi. Yüksek Lisans tezi. İstanbul: İbn Haldun Üniversitesi; 2021. [Thesis in Turkish]
57. Anlı G, Şar AH. Boyun eğici davranışları azaltmaya yönelik bilişsel davranışçı psiko-eğitim programının kişilerarası duyarlılık, öfke ve düşmanlık (hostilite) üzerine etkisi. Doktora tezi. Sakarya: Sakarya Üniversitesi Eğitim Bilimleri Enstitüsü; 2017. [Thesis in Turkish]
58. Çetinkaya Ş, Adana F. Lise öğrencisi erkek ergenlerde problem çözme eğitiminin; problem çözme becerisi, kişilerarası ilişki tarzı ve öfke kontrolü üzerine etkisi. Yüksek Lisans tezi. Aydın: Adnan Menderes Üniversitesi, Sağlık Bilimleri Enstitüsü; 2013. [Thesis in Turkish]
59. Zorlu E, Hamarta E. Öfke denetimi eğitim programının lise öğrencilerinin sürekli öfke ve öfke ifade tarzlarına etkisi. Doktora tezi. Konya: Necmettin Erbakan Üniversitesi Eğitim Bilimleri Enstitüsü; 2017. [Thesis in Turkish]
60. Genç M, Bilgin H. Suça bulaşan ergenlerde kabul ve kararlılık terapisi temelli girişimin psikolojik esneklik, empati ve öfke üzerine etkisi. Doktora tezi. İstanbul: İstanbul Üniversitesi-Cerrahpaşa Lisansüstü Eğitim Enstitüsü; 2022. [Thesis in Turkish]
61. Aydil D, Haktanır A. Diyalektik davranış terapisi grup beceri eğitimlerinin öfke kontrol problemi olan ergenlerde kullanımı. Yüksek Lisans tezi. Konya: Necmettin Erbakan Üniversitesi Eğitim Bilimleri Enstitüsü; 2022. [Thesis in Turkish]
62. Gülcan ZS, Lök N. Lise öğrencilerine uygulanan bilinçli farkındalık eğitim programının sürekli öfke ve öfke ifade tarzına etkisi. Yüksek Lisans tezi. Konya: Selçuk Üniversitesi Sağlık Bilimleri Enstitüsü; 2023. [Thesis in Turkish]
63. Hoşrik Evren M, Yıldız M. Çocuk evlerindeki ergenlerde gevşeme tekniği Ve EFT'nin tanrı imgesi, affetme eğilimi, öfke ve kaygı kontrolü üzerindeki rolü. Doktora tezi. Ankara: Ankara Üniversitesi Sosyal Bilimleri Enstitüsü; 2017. [Thesis in Turkish]
64. Ekitli Beycan G, Özgür G. Müzikle ritim çalışmalarıyla bütünleştirilmiş gross duygu düzenleme modeli'nin öğrenci hemşirelerin öfke ifadesi ve tarzlarına etkisi. Doktora tezi. İzmir: Ege Üniversitesi, Sağlık Bilimleri Enstitüsü; 2019. [Thesis in Turkish]
65. Siyez DM, Tuna DT. Lise öğrencilerinin öfke kontrolü ve iletişim becerilerinde çözüm odaklı psiko-eğitim programının etkisi. Türk Psikolojik Danışma Rehberlik Derg 2014;5:11–22. [Article in Turkish]
66. Akbaş E. Çözüm odaklı yaklaşımın adölesanlarda öfke yönetimine ve şiddet davranışına etkisi. Doktora tezi. Aydın: Pamukkale Üniversitesi Sağlık Bilimleri Enstitüsü; 2021. [Thesis in Turkish]
67. Kılıçarslan S, Atıcı M. Ergenlerde görülen saldırgan davranışlarda ebeveyn ve ergenlere uygulanan psikoeğitim programının etkisinin incelenmesi. Adnan Menderes Üniv Sosyal Bilimler Enstitüsü Derg 2017;4:20–41. [Article in Turkish]
68. Durmuş T. Üniversite öğrencilerinin öfke yönetimine psikodramanın etkisi. Yüksek Lisans tezi. İzmir: Ege Üniversitesi Sağlık Bilimleri Enstitüsü; 2019. [Thesis in Turkish]
69. Çapacıoğlu GK, Demirtaş, VY. Yaratıcı dramanın ortaöğretim 9. sınıf öğrencilerinin öfke denetimi becerilerine etkisi. İlköğretim Online 2017;16:960–77. [Article in Turkish]

Appendix 1. Research articles

Study	Sample	N	Approaches	Number of sessions	Method	Scales	Results	Follow-up	Effect Size	Level of evidince
Kelleci et al. (2014) [51]	9th grade high school	N:51 (24/27)	CBT	Experiment 10 sessions Once a week 90 min.	RCT	STAXI RAS	Trait Anger Experiment<control Anger Control Experiment>control Anger Out Experiment<control Anger In Experiment<control RAS Experiment>control	No	No	II
Siyez and Tuna (2014) [65]	High School 9th Grade	N:25 (8/9/8)	Solution-Based Approach	Experiment 10 sessions Placebo: support interview 10 sessions Once a week 45 min	Quasi experimental	STAXI CSES	Trait Anger Experiment<control, placebo Anger Control Experiment> placebo Anger out Experiment<control, placebo Anger In Experiment<control, placebo CSES Experiment=control=placebo	No	Yes	III
Kılıçarslan and Atıcı (2017) [67]	High School 9-10-11th grade	N:68 (34/34) Adoles-cent+parent	Systematic Family Therapies Theory	Experiment Adolescents 10 Parents 14 sessions Once a week 90 min	Quasi experimental	AS SPPR PSS FAD	AS Pre-test > post-test > follow-up SPPRC -Competence Pre-test<post-test=follow-up SPPRC Role Balance Pre-test<post-test=follow-up PSS Pre-test>post-test=follow-up FAD Pre-test>post-test=follow-up	Yes	No	III
Çapacıoğlu and Demirtaş (2017) [69]	High School 9th grade	N:30(15/15)	Creative Drama	Experiment 12 sessions Once a week 90 min	Quasi Experimental	STAXI	Trait Anger Experiment<control State Anger Experiment>control Anger Control Experiment<control Anger Out Experiment<control Anger In Experiment>control	No	No	III
Keçialan and Ocakçı (2018) [52]	Health Vocational High School 9th grade	N:65	CBT	8 sessions 1-2 a week 50 min	Quasi Experimental	CSES STAXI	CSES Pre-test<post-test STAXI Pre-test=post-test	No	No	III
Akdemir And Gündüz (2022) [53]	Vocational High School 10, 11th Grade	N:20 (9/11) Adolescent	CBT	Experiment 9 sessions Once a week 60 min	Quasi Experimental	DERS RPAS	DERS Pre-test>post test<follow up Experiment<control Reaktive Pre test>post test<follow-up Experiment<control Proaktive Pretest>posttest>follow up Experiment=control	Yes	Yes	III

STAXI: Trait anger-anger; Expression scales, RAS: Rathus assertivitness shedule, CSES: Communication skills evaluation scale, AS: Aggressiveness scale, PSS: Parental stress scale, FAD: Family assesment device, DERS: Difficulties in emotion regulation scale, RPAS: Reactive-proactive aggression scale, SPPR: Self Perception of Parental Scale.

Appendix 2. Master's theses

Study	Sample	N	Approaches	Number of sessions	Method	Scales	Results	Follow up	Effect size	Level of evidence
Çetinkaya (2013) [58]	Technical and Industrial Vocational High School 9-10th grade	N:147 (34/50/63)	CBT Rational Emotive Therapy	Experiment 8 sessions Once a week 40-50 min	Quasi Experimental	PSI MAS ISI	PSI-Trust, approach avoidance, personal control Experiment<control,2 MAS-Aggressive behaviors, passive aggressive reactions, revenge directed behaviors, Experimen t< control,2 MAS -Quiet Behaviors Experiment >control,2 MAS -Reckless Reactions Expeirment >control 2 ISI-Dominant, Avoider, Insensitive, Manipulative, Contemptuous, Anger Style, Experiment<control,2	Yes	No	III
Durmuş (2019) [68]	Faculty of Nursery	N:21 (11/10)	Psychodrama	Experiment 12 sessions Once a every two weeks	Quasi Experimental	STAXI	Trait Anger Experiment=Control Anger-Expression Experiment=Control	No	No	III
Diksaç (2020) [55]	E type Closed Prison 18-25 ages	N:18(8/10)	CBT	Experiment 8 sessions Once a week 70-90 min	Descriptive and RCT	BAQ STAXI CSS	BAQ Physical Agression Pre-test>post-test Control>experiment BAQ Hostility Pre-test>post-test BAQ Anger Pre-test<post-test Control >experiment BAQ Verbal Aggression Pre-test>post test Trait Anger Pre-test>post-test Control >experiment Anger Control Pre-test<post-test CSS Ego Developed Language Pre-test<post-test Experiment >control CSS Active Listening Pre-test<Post-test CSS Self-knowledge/Self Disclosure Pre-test<post-test Experiment >control CSS Empathy Pr-test<Post-test	No	No	II

Appendix 2. Cont.

Study	Sample	N	Approaches	Number of sessions	Method	Scales	Results	Follow up	Effect size	Level of evidence
Çelik (2021) [56]	High School 9 ve 10th Grade	N:35(19/16)	CBT	Experiment 6 sessions once a week 90 min	Quasi Experimental	SDQ STAXI CYRM-12	SDQ Pre-test=post-test Experiment=control CYRM-12 Pre-test=Post-test Experiment=Control Trait Anger Pre-test>Post-test Experiment=control Anger Expression Pre-test=Post-test Experiment=control	Yok	Yok	III
Aydil (2022) [61]	Anatolian High School 9-10-11th grade	N:21 (10/11)	Dialectic Behavioral Therapy	Experiment 8 sessions Once a week 45 min	Quasi Experimental	STAXI DERS DTS	Trait Anger Pre-test>post-test Experiment=control DERS Pre-test>post-test Experiment=control DTS Pre-test= Post- test Experiment=control	No	Yes	III
Şahin Vural (2023) [49]	High School 10-11th grade	N: 20 (10/10)	CBT	Experiment 7 sessions Once a week 60 min	RCT	STAXI	Trait Anger Pre-Test>Post- test=follow up Control>experiment Anger In Pre test>post-test<follow-up Control>experiment Anger Out Pre-test>Post-test=follow up Control>experiment Anger Control Pre test<Post- test=follow up Experiment>control	Yes	No	II
Gülcan (2023) [62]	Anatolian High School 9th grade	N: 52 (26/26)	Mindfulness	Experiment 6 sessions Once a week 40 min	RCT	STAXI	Trait Anger Experiment<control Pre-test >post-test Anger Out Experiment<control Pre-test>post-test Anger In Experiment<control Pre-test >post-test Anger Control Experiment>control Pre-test<post- test	No	No	II

PSI: Problem solving inventory, MAS: Multidimensional anger scale, ISI: Interpersonal style inventory, STAXI: Trait anger-anger; Expression scales; CSS: The communication skills scale, BAQ: Buss-perry aggression questionnaire, SDQ: The strength and difficulties questionnaire, CYRM: Child and youth resilience measure, DERS: Difficulties in emotion regulation scale, DTS: Distress tolerance scale.

Appendix 3. Doctoral dissertations

Study	Sample	N	School	Number of sessions	Method	Scales	Results	Follow up	Effect Size	Level of evidence
Kaya (2015) [54]	Department of Corrections 14-17 ages	N:65(32/33)	CBT	Experiment 30 sessions 2 a week 90 min	Quasi Experimental	STAXI AQ SPSI-SF	Trait Anger Pre-test>post-test Anger Control Pre-test<post-test Experiment>-Control AQ-physical Agression Pre-test>post-test AQ-Hostility Pre-test>post-test SPSI-SF Experiment>control	No	No	III
Anlı (2017) [57]	Anatolian High School 12th grade	N:23(11/12)	CBT	Experiment 10 sessions Once a week 60 min	RCT	SBS BFI	SBS Pre-test>post-test, follow up Post-test>follow up Control>experiment BFI-Interpersonal Sensitivity Pre-test>post-test, follow-up Control>experiment BFI Hostility, Anger Pre-test>post-test, follow up Control>experiment	Yes	Yes	II
Hoşrik Evren (2017) [63]	Children under state protection 14-18 ages	N: 90 (43/47)	Emotional Freedom technique from energy therapies (EFT) and Progressive Muscle relaxation technique used for cognitive behavioral stress management	For each group 2 sessions Once a week 120 min	Quasi Experimental	STAXI TAI FTS GISC	Anger Control Pre-test<post-test Group1=Group2 GISC-Fearful God Image Pre-test<post-test TAI Pre-test=post-test Group1=Group2 FTS Pre-test=Post-test Group1=Group2	No	No	III
Zorlu (2017) [59]	High School	N:30 (15/15)	Rational- Emotional Behavioral Therapy	Experiment 10 sessions Once a week 75 min	RCT	STAXI	Trait Anger Pre-est>post-test, Follow-up Experiment<Control, Follow up AngerOut PRe-test>Post-test, follow-up Experiment<control, follow-up Anger In Pre-test>post- test Experiment=control=follow-up Anger Control Pre-test<Post-test, follow-up Experiment>control	Yes	No	II

Appendix 3. Cont.

Study	Sample	N	School	Number of sessions	Method	Scales	Results	Follow up	Effect Size	Level of evidence
Ekitli Beycan (2019) [64]	Faculty of Nursery	N:38 (10/10/9/9)	Gross Emotion Regulation Model(1998) and CBT	Experiment 5 sessions Once a week 120 min	RCT	STAXI	Trait Anger Experiment <control1 Follow up Experiment <Control1 Anger Out Experiment <Control3 Anger In Control1>Control2 Anger Control Experiment >Control1-2-3 Follow-up Experiment >Control2	Var	Var	II
Akbaş (2021) [66]	Vocational and Technical Anatolian High School 10-11th grade	N:48(24/24)	Solution based Approach	Experiment 7 sessions Once a week 55 min	RCT	STAXI VTS	Trait Anger Experiment<control Pre-test>post-test, follow up Anger Out Experiment<control Pretest> post-test, follow up Anger In Experiment=control Pre-test>post-test, follow up Anger Control Experiment>control Pre-test<post-test, follow up VTS Experiment<control Pretest>post-test, follow up Post-test<follow up	Yes	No	II
Aktaş (2022) [50]	Faculty of Health Sciences 18-25 ages	N:121(59/62)	CBT	Experiment 6 sessions Once a week 90 min	RCT	STAXI	Trait Anger Pre-test>post-test, follow up Control>experiment Anger In Pre-test>post-test, follow up Experiment=control Anger Out Pre-test>post test, follow up Control>experiment Anger Control Pre-test<post-test, follow up Experiment<control	Yes	Yes	II
Genç (2022) [60]	Adolscents involved in crime 15-17 ages	N:24(12/12)	Acceptance and Commitment Therapy	Experiment 6 Sessions Once a week 120 min	Quasi Experimental	AAQ-II KA-Sİ ETS-CA-AF STAXI	AAQ-II Pretest>follow up2 Experiment<control KA-Sİ ETSCA-AF Pre-test=post-test=follow up1=follow up2 Experiment>control Trait Anger Pre-test> follow up1, follow up2 Experiment<control Anger Out Pre-test>follow up 1,2/ Follow up1<Follow up2 Experiment<control Anger Control Pre-test< follow up 1 Experiment>control	Yes	No	III

STAXI: Trait anger-anger; Expression scales, AQ: Aggression questionnaire, SPSI-SF: Social problem solving inventor-short form, BFI: Brief symptom Inventory, SBS: Submissive behaviors scale, TAI: Trait anxiety inventory, FTS: Forgiveness tendency scale; GISC: God image scale for children, VTS: Violence tendency scale, AAQ-II : Acceptance and action questionnaire-II, KA-Sİ-ETSCA-AF: Child and adolescent ka-si empathic tendency scale adolescent form.

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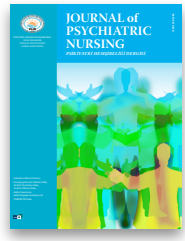

Letter to the Editor

Moderating role of CBT-based art and expressive eclectic nursing interventions on anger and assertiveness: An interventional study: Letter on mahire olcay çam et al.

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Dear Editor,

I am writing in response to the recently published article by Çam et al.[1] "Moderating role of CBT-based art and expressive eclectic nursing interventions on anger and assertiveness: An interventional study" in the Journal of Psychiatric Nursing. This study represents an important contribution to the growing body of evidence on the integration of cognitive-behavioral therapy (CBT) principles with art-based and expressive modalities in psychiatric nursing education. The authors' focus on undergraduate nursing students, a population often overlooked in intervention research, underscores the critical need to equip future nurses with emotional regulation and communication skills that are foundational to both professional resilience and patient care quality.

Several aspects of this research deserve commendation. By combining CBT techniques with psychodrama warm-up games and expressive art therapy, the authors created a truly eclectic intervention. This hybrid approach reflects the multidimensional nature of anger and assertiveness, which cannot be adequately addressed by cognitive restructuring alone. The inclusion of creative expression allowed participants to externalize emotions, while CBT provided structured strategies for reframing and regulating them. Despite the small sample size, the study employed a robust pretest-posttest-follow-up design, with validated instruments (STAXI and RAI) and appropriate statistical analyses.[2–5] The use of repeated measures ANOVA, Friedman tests, and regression analyses ensured that both short- and long-term effects were carefully examined. The intervention was embedded within the context of nursing education, aligning with the second-year curriculum when students first encounter patient care.[3,4] This timing is strategic, as emotional regulation and assertiveness are particularly critical during the transition from theoretical learning to clinical practice. Moreover, the program was short-term, cost-effective, and delivered by psychiatric nursing specialists with expertise in CBT, psychodrama, and art therapy. Such feasibility enhances the potential for replication across nursing faculties globally.

While the study is laudable, several points merit further discussion. The intervention was tested on a small group of 16 students, predominantly female, from a single institution. Although the achieved statistical power was high, the findings may not be generalizable to broader nursing populations, including male students, students from diverse cultural backgrounds, or those in different stages of training. Future research should consider multi-site trials with larger, more heterogeneous samples. Another important issue is the sustainability of anger regulation outcomes. The study found that reductions in anger (Trait Anger, Anger-In, Anger-Out) were significant in the short term but not sustained at follow-up. This raises important questions about the durability of CBT-art interventions.[6] Assertiveness gains persisted, but anger regulation appeared to require reinforcement. This suggests that booster sessions, ongoing reflective practice, or integration into routine coursework may be necessary to maintain long-term benefits.

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Interestingly, short-term changes in anger and assertiveness did not predict each other, but a significant long-term relationship emerged between RAI scores and STAXI Anger-In scores. This finding highlights the complexity of emotional regulation: while assertiveness training may not immediately alter anger expression, over time it may reduce the tendency to suppress anger. This delayed effect warrants deeper exploration, perhaps through qualitative interviews or longitudinal mixed-methods designs. Cultural considerations also deserve attention. The study was conducted in Türkiye, where cultural norms around anger expression and assertiveness may differ from those in other contexts. For example, collectivist cultures often discourage overt anger expression, while assertiveness may be perceived differently across gender roles. Cross-cultural replication would enrich understanding of how eclectic interventions interact with sociocultural expectations. Although STAXI and RAI are validated tools, their reliance on self-report may introduce bias. Incorporating observational measures, peer evaluations, or physiological indicators such as heart rate variability during anger episodes could provide a more comprehensive assessment of intervention outcomes.

The findings of Çam et al.[1] have several practical implications. Nursing faculties should consider embedding CBT-based art and expressive interventions into communication skills courses. Doing so would not only enhance students' emotional regulation but also foster resilience against burnout, a pressing issue in nursing worldwide. The eclectic nature of the intervention underscores the value of collaboration between psychiatric nurses, art therapists, and psychodramatists. Such partnerships enrich the educational experience and expose students to diverse therapeutic modalities. By equipping nursing students with anger regulation and assertiveness skills early in their training, institutions can proactively reduce the risk of future mental health challenges, interpersonal conflicts, and professional attrition. Given the cost-effectiveness of the program, it could be adapted for online or hybrid delivery, particularly in resource-limited settings. Digital platforms could incorporate guided art exercises, CBT modules, and virtual group discussions to reach wider audiences.

Building on this study, I propose several directions for future inquiry. Longitudinal studies tracking nursing students across their academic journey and into professional practice would clarify whether early interventions translate into sustained resilience and improved patient care outcomes. Randomized controlled trials comparing eclectic interventions with standard communication skills training would strengthen causal claims and highlight relative effectiveness. Incorporating qualitative methods such as focus groups or reflective journals would capture the nuanced experiences of participants, particularly how they perceive the role of art and expression in emotional regulation. Future studies could examine whether students trained in eclectic interventions demonstrate improved communication with patients, reduced conflict in clinical settings, and enhanced therapeutic relationships. Extending such interventions to other health professions, including medicine, social work, and psychology, could foster interprofessional education and collaborative practice.

Çam et al.'s[1] study is a timely and valuable contribution to psychiatric nursing education. By demonstrating that CBT-based art and expressive eclectic interventions can enhance assertiveness and, at least in the short term, regulate anger among nursing students, the authors highlight a promising pathway for integrating creative and cognitive approaches into curricula. While questions remain about sustainability, generalizability, and cultural applicability, the study provides a strong foundation for future research and practice. As nursing education continues to grapple with the challenges of burnout, emotional regulation, and communication barriers, innovative interventions such as this one are essential. I commend the authors for their pioneering work and encourage further exploration of eclectic, art-integrated approaches to foster resilience and well-being among the next generation of nurses.

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References

1. Çam MO, Dülgerler Ş, Öztürk Turgut E, Beycan Ekitli G, Demirkol H, Topcu EM. Moderating role of CBT-based art and expressive eclectic nursing interventions on anger and assertiveness: An interventional study. J Psy Nurs 2025;16:195–203.
2. Spielberger CD, Sydeman SJ. State-trait anger expression inventory. In: Spielberger CD, editor. Manual for the State-Trait Anger Expression Inventory (STAXI). Odessa, FL: Psychological Assessment Resources; 1994.

3. Rathus SA. A 30-item schedule for assessing assertive behavior. Behav Ther 1973;4:398–406.
4. Voltan Acar N. Adaptation of the rathus assertiveness inventory into Turkish. Turk J Psychol 1980;1:23–30. [Article in Turkish]
5. Özer AK. Adaptation of the state-trait anger expression inventory into Turkish. Turk J Psychol 1994;9:26–35. [Article in Turkish]
6. Roushani K, Mehrabizadeh Honarmand M. The effectiveness of cognitive-behavioral therapy on anger in female students with misophonia: a single-case study. Iran J Med Sci 2021;46:61–7.