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REVIEW ARTICLE

Role of Transdiagnostic Approach in Improving Quality of Life among Cancer Survivors: A Narrative Review

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Abstract

Transdiagnostic interventions have been shown to be effective in improving quality of life (QoL) among cancer survivors. This narrative review aims to explore the impact of transdiagnostic interventions on QoL to facilitate development of more effective interventions and future research. A comprehensive literature search was conducted in the PubMed database using a combination of MeSH terms and keywords related to cancer survivorship, QoL, and transdiagnostic interventions. Studies on Metacognitive therapy (MCT) and ConquerFear demonstrated promising results in reducing emotional distress, improving QoL, and managing fear of cancer recurrence (FCR). Both interventions demonstrated high completion rates, suggesting acceptability among cancer survivors. MCT included metacognitive beliefs and processes, empowering participants to manage negative thoughts and feelings. ConquerFear, delivered individually or in group formats, including online, effectively reduced FCR and anxiety, with sustained benefits over time. Integrating transdiagnostic approaches into survivorship care holds promise for enhancing QoL and well-being for cancer survivors. Although these findings highlight the potential of transdiagnostic interventions, further research is needed to explore patient characteristics influencing treatment outcomes and to optimize intervention delivery.

Keywords

Transdiagnostic interventions, Cancer survivors, Fear of cancer recurrence, Quality of life, Mental health

Introduction

There's a growing interest in treating mental health conditions through a common approach rather than focusing on the treatment of specific disorders, considering recent research which suggests there are several similarities between these conditions [1]. This has led to exploring treatment strategies that address these shared elements rather than focusing solely on individual disorders [1]. Also, there is a growing recognition that the diagnostic categories of mental health are very useful in research and choice of treatment regimen.

In this aspect, transdiagnostic approach, a new approach in treatment of mental disorders, is gaining traction. This approach moves beyond simply labeling conditions and involves alternative reasons for the underlying causes of mental health problems, and subsequently provides a structural framework for developing novel approaches in prevention, treatment, and recovery from severe mental suffering. By bypassing traditional diagnoses, it allows for a fresh perspective on understanding challenges faced by patients afflicted by in mental health disorders [2]. Globally, cancer constitutes a significant public health challenge, with tens of millions of new cases diagnosed annually, resulting in a mortality rate exceeding 50% among affected individuals [3]. According to the report from the 2020 Global Cancer Observatory, there were an estimated 19.3 million new cancer cases diagnosed around the world in 2020, resulting in approximately 10 million cancer-related deaths [4]. Cancer treatment presents a double challenge for patients: Physical and psychological. These challenges, regardless of the cancer

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stage, location, or treatment phase, can significantly impact a patient's quality of life (QoL) [5]. Anxiety and depression are the most common psychological burdens that affect cancer survivors to varying degrees. These range from concerns, worries, or feelings of uncertainty, to full-blown anxiety or depressive disorders, which cause considerable distress to the patient, hinder daily life, and negatively impact the QoL. They can also worsen physical symptoms, reduce adherence to treatment, and increase the risk of suicide (in depression cases) [6]. A meta-analysis by Mitchell, et al. (2011) that investigated the prevalence of mental disorders in cancer patients states 16.3% for depression, 19.4% for adjustment disorders, and 10.3% for anxiety disorders [7]. This review aims to explore the different facets of the transdiagnostic approach, including its types and their clinical effectiveness, and its role in improving the QoL, particularly for cancer survivors.

Methodology

A comprehensive literature search was performed in PubMed and Google Scholar, focusing on recent advancements in transdiagnostic approach among cancer survivors, using the following Medical Subject Headings (MeSH) terms: "transdiagnostic approach," "meta-cognitive therapy," "quality of life," "recent advancements," "management," and "treatment," in conjunction with: "cancer survivors" and "oncology." Articles published between January 2013 and January 2024 in English were included in this review. In addition, relevant studies and reviews were also hand-searched from reference lists of relevant articles.

Effect of Psychological Distress on Cancer Survivors

Even with considerable progress in cancer treatment, survivors often face challenges with psychological distress and the associated behavioral symptoms [8]. Psychological distress among cancer survivors is emerging as a top priority in comprehensive cancer care. At present, roughly 7 out of 10 people diagnosed with cancer can be successfully treated and may live for at least 5 years after diagnosis. This progress has shifted the focus in healthcare towards the challenges faced by cancer survivors [9]. Psychological distress directly affects a survivor's QoL and impacts the individual's ability to enjoy life. This impact goes beyond emotional well-being [2], and anxiety and depression, ranging from mild to severe diagnosable cases, are common mental health issues among cancer patients, regardless of disease progression or treatment phase. People with diagnosed anxiety or depression often experience considerable distress, impaired daily functioning, lower QoL, and worsened physical symptoms. Additionally, these mental health conditions are linked to poorer treatment adherence, increased suicide risk, and potentially worse overall health outcomes [6].

Cancer-related fatigue (CRF) is a particularly common and difficult side effect, affecting over 70% of patients, and has been reported in >60% of the patients who have undergone successful treatment. Additionally, up to 38% of patients experience depression and anxiety within the first five years following diagnosis [10]. These mental health challenges can persist even after recovery from cancer itself, and can make it harder to stick with treatment and manage the overall disease [10].

Fear of cancer recurrence (FCR) is yet another psychological distress experienced by cancer survivors [11]. A recent study showed that 59% of study population comprising cancer survivors had experienced moderate levels of FCR, and nearly 19% experienced high levels of fear [11]. FCR, being a common phenomenon among cancer survivors, needs to have cost-effective and accessible interventions in the near future.

Importance of Patient-Centered Health-Related Quality of Life (HRQoL) in Cancer Care and its Challenges

HRQoL has emerged as a critical metric for evaluating health outcomes in both clinical trials and routine clinical practice [12]. HRQoL and functional status provides valuable prognostic information and insights into patient resilience in the face of cancer treatment [13]. However, the basic underlying biopsychosocial processes, the scenario of huge heterogeneity with the diagnoses, rampant comorbidity and poor differentiation between supposedly different disorders, partial symptom capture, dimensional symptom space, diagnosis driven clinical intervention, and phenotypic plasticity across development and the life course are some of the major unmet needs in this field [2]. Therefore, understanding the specific challenges experienced by patients can help in informed treatment decisions and facilitate the delivery of personalized care for cancer survivors [13].

Transdiagnostic Approach in Treatment of Mental Health Disorders in Cancer Survivors

The transdiagnostic approach takes into account factors that contribute to mental health problems, regardless of their nature (i.e., biological, social, or psychological), which are not unique to specific diagnoses [14]. These factors include risks, protections, or ongoing processes that maintain the problem, and they influence a range of mental health conditions, transcending the traditional boundaries between diagnoses. The benefits of transdiagnostic approaches go beyond just classification. Instead of focusing on distinct diagnostic boxes, it examines the underlying mechanisms common across various mental health conditions. This shift facilitates new ways of thinking about developing the genesis of these conditions, mechanisms that sustain them, and pathways to treatment and recovery. This approach essentially aims

to provide a more effective framework for tackling the challenges of mental illness and promoting healing [2].

According to the transdiagnostic approach, as a person uses his or her existing knowledge and experience to adjust to their cancer, their previous beliefs and coping processes become more apparent. Anxiety is related to the perception of severity of the disease based on earlier experiences or preconceived conceptions about illness, reliance, or mortality. Disconnection from life's important aspects due to inability to function also results in existential distress, and inherent lack of control, ongoing uncertainty, and awareness of mortality due to cancer, leading to increasing concerns of death and existential dilemmas [15].

Natural cognitive processes, such as intrusive thoughts that arise in reaction to an existential threat, become troublesome when people believe that those thoughts are uncontrollable and destructive, or that worrying is beneficial in preparing for future hazards. People may attempt to cope with unwanted intrusions by engaging in suppression and avoidance, or by worry and hypervigilance, perpetuating an anxiety cycle. As a result, the transdiagnostic model highlights therapeutic targets, such as cognitive processes (intrusions and subsequent cognitive reactions like suppression or worrying) and cognitive content (core beliefs, threat evaluations, and concerns about death) [15].

The domain of transdiagnostic treatments is a complex and evolving field, with the myriad of available approaches adding to the complexity. Figure 1 ([16-18]) elucidates the various types of transdiagnostic approaches currently available. Some approaches, like psychodynamic therapy, are inherently transdiagnostic, and target common underlying issues across different diagnoses. Others, like "third wave" Cognitive behavioral therapy (CBT) techniques, can be adapted to suit various conditions. Newer forms of CBT, as well as psychodynamic and systemic therapies, are now addressing multiple mental health issues simultaneously. This broader approach makes them effective treatments for a wide range of problems. There's also a new wave of treatments specifically designed with a transdiagnostic perspective, making them broadly applicable to a range of mental health struggles. Overall, there is no one-size-fits-all model in transdiagnostic approach of treatment and it is evolving into a more diverse and adaptable toolkit [16].

Traditional third wave CBT-based therapies like Acceptance and Commitment Therapy (ACT), Mindfulness-Based Cognitive Therapy (MBCT), and Mindfulness-Based Stress Reduction (MBSR) often involve addressing negative thoughts, but focus on coping strategies rather than challenging the thoughts [9].

In contrast, Metacognitive Therapy (MCT) directly targets the underlying thought patterns that contribute

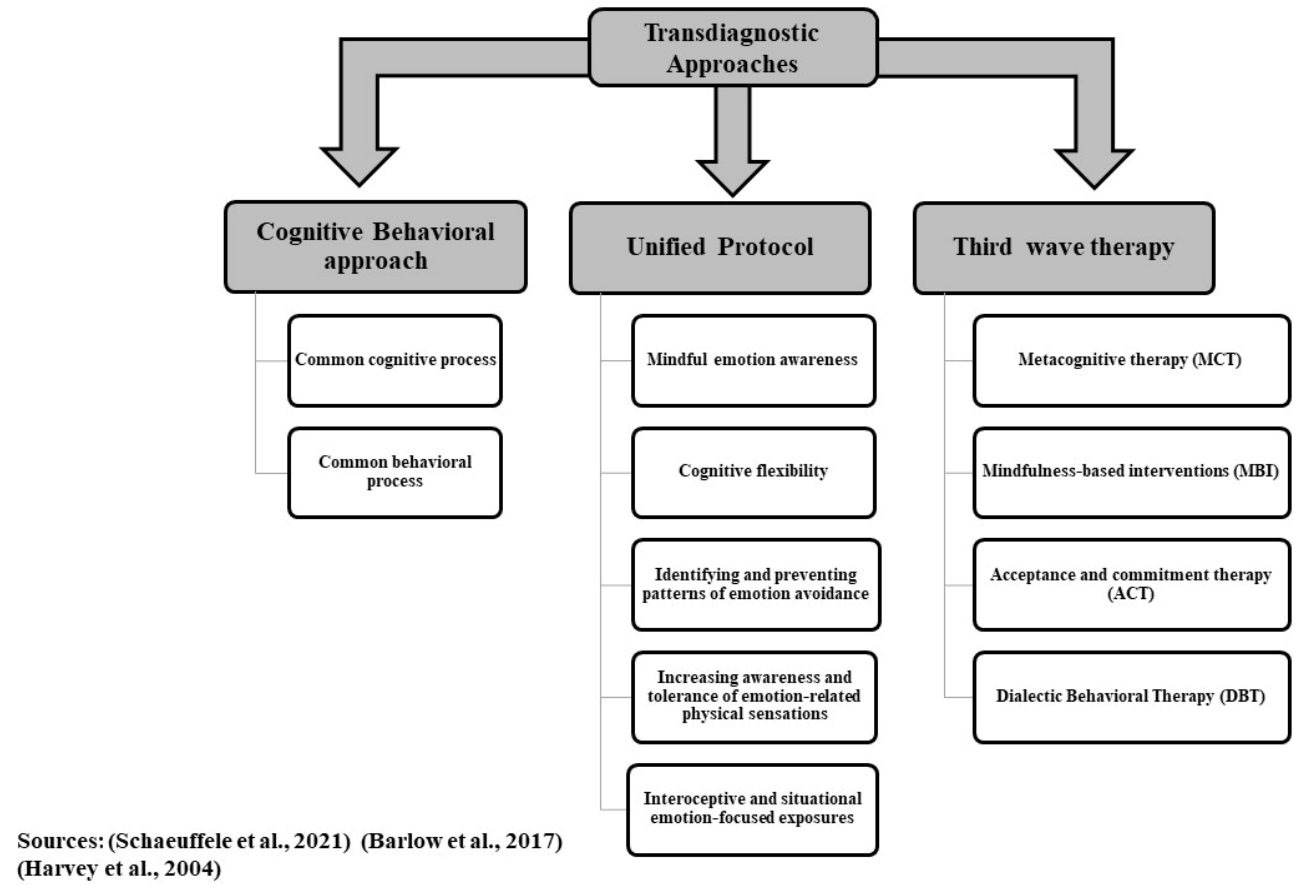

Figure 1: Types of transdiagnostic approaches for improving mental health.

to emotional distress [19]. It emphasizes understanding and modifying these patterns rather than focusing on the content of the thoughts. MCT is based on the idea that persistent negative emotions stem from maladaptive thinking habits, and by changing these habits, individuals can reduce their emotional suffering. This approach is particularly effective for cancer survivors who often experience worries about recurrence or limitations [9].

Efficacy of Transdiagnostic Interventions in Reducing Emotional Distress among Cancer Survivors

The effectiveness of the transdiagnostic approach in improving QoL among cancer survivors has been reported in several clinical trials. Table 1 summarizes the results regarding the efficacy of the transdiagnostic approach conducted in various studies. These studies investigate how addressing common psychological and physiological mechanisms can lead to improvements in overall well-being, symptom management, and functional status.

MCT is a promising approach for supporting the mental well-being of cancer survivors [9]. In an open trial consisting of 27 cancer survivors, 80% of participants who underwent brief MCT with each session around 45-60 minutes in duration, recovered with 70% recovery rate at the 6-month follow-up, indicating the lasting effect of the intervention after completion of the treatment. Short MCT seemed to be acceptable to cancer survivors, with 75% completion rates [20]. The study demonstrated the potential efficacy of brief MCT for adult cancer survivors experiencing emotional distress, with high completion rates and promising treatment effects [20].

MCT showed promising results in alleviating emotional distress, focusing on metacognitive beliefs and processes in a qualitative research study involving 19 adult cancer survivors with anxiety and depression who received six one-hour sessions of MCT every week [9]. Participants who completed therapy felt empowered, gained a sense of agency, and learned to accept negative thoughts and feelings as normal responses to life events, learned to question beliefs about worry and rumination, and did not feel abandoned at the end of therapy [9].

The online-delivered ConquerFear-Group or relaxation training is a potential therapeutic approach to mitigate FCR in cancer survivors. In a randomized controlled trial (RCT) comprising 85 breast cancer survivors [11], ConquerFear-Group participants showed statistically significant reductions in FCR ($d = 0.47$, $p = 0.001$) and Fear of Cancer Recurrence Inventory (FCRI) severity scores ($d = 0.57$, $p < 0.001$) compared to the control group, along with significant improvements in mindfulness ($d = 0.34$-0.57, $p = 0.001$-0.036) and decentering ($d = 0.44$-0.94, $p < 0.001$-0.002) at all-time points. Participants reported reductions in worry and rumination at all-time points, with improvement in emotional regulation ($d = 0.38$-0.68) at some time points. The overall satisfaction with the intervention was high. The study highlighted the potential of the brief, intensive, group-based ConquerFear intervention for clinical implementation as it requires fewer trained therapists and resources compared to individual formats, making it appealing for mental health interventions. Additionally, its online delivery enhances accessibility, making it relevant for reaching a broader population, thereby making it scalable and cost-effective approach to addressing fear and anxiety disorders in clinical settings [11]. Similar findings were reported in another RCT comprising 704 cancer survivors from 17 locations and two online databases. ConquerFear participants showed statistically and clinically significant improvements compared with control participants in terms of FCRI total ($p = 0.001$) and severity subscale scores ($p = 0.001$) from baseline to immediately posttherapy and these improvements were maintained at 3 months ($p = 0.017$ and $p = 0.023$, respectively) and at 6 months posttherapy (FCRI: $p = 0.018$). Additionally, improvements in general anxiety, mental QoL, and metacognitions (total), and coping, triggers, and psychological distress were observed in these study participants [21]. In another pilot trial, 12 participants received ConquerFear therapy as an intervention for FCR. There was high involvement and adherence to the intervention. posttherapy there was significant improvement in almost all the psychological variables ($p = 0.055$) [15]. The majority of participants experienced clinical recovery after therapy and during follow-up, with some displaying consistent and clinical improvements in anxiety levels. These findings suggest that ConquerFear effectively mitigates cancer-related fears and enhances overall well-being, underscoring its potential as a valuable tool in cancer survivorship care [15].

These published evidences highlight the potential of transdiagnostic approach as a valuable tool in enhancing the QoL for cancer survivors. By addressing the shared psychological and emotional challenges prevalent across different cancer types, this approach offers a promising avenue for comprehensive support and intervention. Integrating transdiagnostic strategies into existing protocols holds immense potential for personalized and tailored support for survivors. This seamless integration ensures that survivors receive the multifaceted care they require, promoting resilience and well-being in their journey beyond cancer treatment.

Challenges and Considerations with Transdiagnostic Approach

The field of transdiagnostic approach lacks a robust theoretical foundation [22]. This deficiency is particularly evident in the delineation of core mental processes and the categorization of mental health conditions

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Table 1: Transdiagnostic approaches interventions summary.

Transdiagnostic approach	Recovery rate %	Qualitative analysis on different mental health symptoms	Change in FCRI total scale	Change in FCRI severity subscale	Improvement in mindfulness, emotional regulation, worry and rumination	Psychological measures	Improvement QoL	References
Metacognitive therapy (MCT)	80% of participants who underwent brief MCT, with each session around 45-60 minutes in duration, recovered with 70% recovery rate at the 6-month follow-up; Short MCT seemed to be acceptable to cancer survivors, with 75% completion rates.	NA	NA	NA	NA	NA	NA	[20]
Transdiagnostic therapy	NA	NA	NA	NA	NA	Significant reduction from baseline to posttreatment and follow-up in anxiety ($p = 0.03$; $p = 0.03$); traumatic symptoms ($p = 0.01$; $p = 0.01$); fear of progression ($p = 0.02$); depression ($p = 0.01$; $p = 0.01$).	Significant improvement in QoL from baseline to posttreatment ($p = 0.02$).	[15]

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ConquerFear Group	NA	NA	From T1 (baseline) to T4 (6 month follow-up) significant improvement was seen (d= 0.47; p = 0.001) in ConquerFear group when compared with active control.	From T1 (baseline) to T4 (6 month follow-up) significant improvement was seen (d = 0.57; p <0.001) in ConquerFear group when compared with active control.	Significant improvements in mindfulness (d = 0.34-0.57, p = 0.001-0.036) and decentering (d = 0.44-0.94, p <0.001-0.002) at all-time points; reductions in worry and rumination at all-time points, with improvement in emotional regulation (d = 0.38-0.68) at some time points.	NA	NA	[11]
Empirically based intervention (ConquerFear)	NA	NA	Statistically significant improvement was seen among the ConquerFear participants from T0 to T1 when compared with control group (p = 0.001).	Statistically significant improvement was seen among the ConquerFear participants from T0 to T1 when compared with control group (p = 0.001).	NA	NA	NA	[21]

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Metacognitive therapy	NA	1. Participants learned to view thoughts as just thoughts, not necessarily accurate reflections of reality. 2. Recognized that feelings like sadness and worry are normal human experiences. 3. Therapy empowered participants to control their thoughts rather than being controlled by them. 4. Many participants reported feeling less worried after completing the intervention. 5. Targeting metacognitive beliefs and processes is effective in managing emotional distress.	NA	NA	NA	NA	NA	[9]

[14]. Without a comprehensive theoretical framework, the potential for innovative clinical applications is hindered. Consequently, there is a critical need to develop overarching theoretical models that transcend traditional diagnostic boundaries [2].

Clinical practice typically involves a deep understanding of patients' cognitive content, including thoughts, beliefs, and assumptions. However, contemporary transdiagnostic research initiatives, such as the Research Domain Criteria (RDoC), predominantly focus on process-level constructs, neglecting the content of these cognitions [23]. A holistic comprehension of mental health necessitates the integration of both process and content dimensions [2,24].

Transdiagnostic approaches can be categorized into two primary methodologies: "soft" and "hard" [2]. Soft approaches maintain the existing diagnostic framework while exploring commonalities across disorders, whereas hard approaches advocate for a complete overhaul of traditional diagnostic categories. The adoption of these more radical transdiagnostic paradigms is crucial for establishing viable alternatives to the current diagnostic system [2].

Traditional research methodologies, such as RCTs with singular primary outcomes, are inadequate for evaluating transdiagnostic interventions. A more suitable approach involves large-scale hybrid designs that incorporate multiple primary outcomes and a comprehensive examination of process-outcome relationships. These methodologies should elucidate the factors that predict treatment response, the mechanisms underlying therapeutic change, and the dynamic interplay between symptoms and underlying processes over time. The prevailing diagnostic paradigm exerts a strong influence on mental health research and practice. Collaborative initiatives like the RDoC and the Hierarchical Taxonomy of Psychopathology (HiToP) are better equipped to challenge this dominance compared to smaller, isolated studies [25]. It is essential to support these consortia while maintaining a critical perspective. Successfully translating transdiagnostic principles into clinical practice necessitates the development of comprehensive assessment tools and interventions that can replace traditional diagnostic methods [26]. Continued research and collaborative efforts are required to evaluate the efficacy and feasibility of these novel approaches in routine clinical practice [2].

Future Perspective with Transdiagnostic Approach for Cancer Survivors

The incidence of cancer survivorship has markedly increased over the past four decades due to advancements in cancer detection and treatment modalities. As of January 2019, the United States alone reported an estimated 17 million cancer survivors, constituting approximately 5% of the total population. Projections indicate a further surge of 10 million survivors within the next decade [27]. Notably, half of the current survivor population has surpassed a 10-year remission period since their initial diagnosis. Given the substantial growth in the cancer survivor population, it is imperative to comprehensively investigate the long-term physical and psychological consequences of cancer and its associated treatments. These sequelae significantly impact survivors' overall QoL and necessitate a thorough understanding to optimize post-treatment care and support [27].

Tailoring Psychotherapy for Optimal Treatment Outcomes

Although the term "transdiagnostic" implies treating multiple diagnoses, this approach is challenged by newer classification systems like HiTOP and RDoC [28]. These systems propose to move beyond traditional diagnostic categories by using data-driven methods to classify mental health conditions. Adopting similar data-driven approaches could be applied to psychotherapy research to create a hierarchical framework for organizing and comparing different therapeutic techniques, thereby changing the manner by which therapists select treatments based on evidence. A tailoring transdiagnostic approach to individual patient characteristics could further improve treatment outcomes [29]. To enhance personalization, treatments should be structured in modular formats. Unified treatments, such as the Unified Protocol, already employ this approach, and these are expected to become more common, but determining the appropriate format which modules the sequence is crucial [16].

Research is required to establish how and why treatments should be tailored, whether before or during therapy, and whether these decisions should be made by the clinicians, algorithms, or a combination of both. Machine learning can be employed to titrate treatment content thereby leveraging technology and outcome monitoring in this approach. Allowing patients to select treatment modules has shown promise in preliminary research and could be a promising avenue for future exploration [16].

Psychotherapy in Transdiagnostic Approach

Traditionally, treatment selection has been based on a patient's diagnosis. For instance, anxiety disorders are treated with exposure therapy and depression with behavioral activation. However, this approach is overly simplified due to the frequent co-occurrence of disorders and the heterogeneity within diagnostic categories [30]. As an example, not all patients with depression benefit equally from behavioral activation [31]. A more effective approach might involve selecting treatment modules based on specific psychological processes underlying a patient's difficulties, such as targeting anhedonia with behavioral activation or situational avoidance with

exposure therapy. Most transdiagnostic therapies focus on addressing patients' weaknesses or deficits, aiming to improve symptoms by targeting impaired psychological processes [16]. An exception is Grawe's Psychological Therapy, which also emphasizes patients' strengths and how to leverage them for change [16,32]. However, there's growing interest in capitalizing on patients' strengths as a therapeutic strategy. A single case study suggests that focusing on strengths within a treatment framework can lead to quicker and better outcomes. A study found that focusing on patients' strengths when using the Unified Protocol treatment method resulted in faster improvement and better outcomes. While more research is needed, it might be helpful to also consider the patient's strengths in general coping skills, not just specific symptoms. Additionally, involving patients in choosing which treatment modules to use could be beneficial [16]. Identifying strengths within broader psychological processes and empowering patients to participate in treatment selection are promising areas for future research [16,33].

Leveraging Technology for Personalized and Adaptive Psychotherapy

Real-time monitoring of patient progress and satisfaction can significantly enhance treatment outcomes, especially for those who do not respond well to initial interventions. Integrating technology into therapy, such as through digital assessments, is crucial for personalizing treatment [34]. While current data-driven approaches primarily rely on information gathered ahead of treatment, future advancements should focus on adapting regimens based on real-time patient data, a concept known as "just-in-time adaptive interventions." Combining face-to-face therapy with online and mobile components can facilitate data collection and provide greater flexibility [35]. Analysis of data from patient questionnaires, clinical observations, and online module engagement can help therapists in identifying potential treatment failures early and make necessary adjustments. The unified approach holds promise for improving the effectiveness and personalization of transdiagnostic treatments [16].

Conclusion

Although transdiagnostic treatments target common symptoms across different mental health disorders and have gained popularity, their effectiveness compared to disorder-specific treatments is still unclear. Additionally, their impact on the co-occurrence of mental health conditions remains uncertain. Nevertheless, these approaches offer potential benefits beyond simply treating specific symptoms. The increasing interest in transdiagnostic treatments highlights the broader need for psychological interventions that are clear, simple, and applicable to a wide range of people. By focusing on shared cognitive patterns and existential challenges, transdiagnostic interventions provide a comprehensive approach to provide support and improve QoL, and reduce emotional distress among cancer survivors. Further research and implementation efforts are essential to fully harness the potential of these treatments and ensure that all cancer survivors have access to effective support as they navigate life after their diagnosis.

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Authors Declaration

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Conflict of Interest

There are no conflicts of interest.

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