

The Effectiveness of Positive Psychotherapy on Depression and Anxiety in Patients with Huntington's Chorea

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ABSTRACT

Abstract

This study aimed to determine the effectiveness of positive psychotherapy on emotion regulation and anxiety in patients with Huntington's chorea. The present research was an applied study using an experimental design with a pretest–posttest–follow-up format and a control group. The statistical population included all individuals with Huntington's disease who attended Rasoul Akram Hospital in Tehran in 2020. The sampling method was population-matched sampling. Twenty patients with Huntington's disease were randomly assigned to the positive psychotherapy experimental group (n = 10) and the control group (n = 10). A pretest was administered to all participants. Then, the positive psychotherapy intervention was delivered online once a week (six 90-minute sessions), while the control group received no treatment. After the intervention, a posttest was conducted for all participants, and one month later the tests were administered again to assess the durability of treatment effects (follow-up stage). Positive psychotherapy, based on the positive psychology approach, was developed by Seligman, Rashid, and Parks (2006). This intervention was conducted in six sessions over six weeks (one session per week), with each session lasting 60 minutes. The results showed that the effect size of group membership for depression was 0.612 at the posttest stage and 0.391 at the follow-up stage, indicating that group membership explained 0.612 of the variance in depression score changes at posttest and 0.391 of the variance at follow-up. In other words, the treatment approach led to an improvement of 0.612 in depression at posttest and 0.391 at follow-up. In addition, the effect size of group membership for anxiety was 0.587 at posttest and 0.521 at follow-up, indicating that group membership explained 0.587 of the variance in anxiety score changes at posttest and 0.521 at follow-up. In other words, the treatment approach led to an improvement of 0.587 in anxiety at posttest and 0.521 at follow-up. It can be concluded that positive psychotherapy is effective for depression and anxiety in patients with Huntington's chorea and results in a significant reduction in depression and anxiety in these patients.

Keywords: Positive psychotherapy, emotion regulation, anxiety, Huntington's disease.

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Introduction

Huntington's disease is a progressive, autosomal dominant neurodegenerative disorder characterized by motor dysfunction, cognitive decline, and profound psychiatric and emotional disturbances that significantly impair quality of life for patients and their families. Beyond its well-documented neurological manifestations, Huntington's disease is increasingly recognized as a condition accompanied by substantial

psychological burden, including elevated rates of depression, anxiety, emotional dysregulation, hopelessness, and reduced psychological well-being. Clinical and psychosocial research has consistently shown that these psychological dimensions are not merely secondary reactions to physical decline, but integral components of the disease trajectory that interact bidirectionally with functional outcomes, treatment adherence, and overall disease management (1-3). Consequently, there has been growing scholarly and clinical interest in identifying psychotherapeutic approaches that move beyond symptom reduction and instead promote psychological resilience, emotional regulation, and meaning-making in individuals living with Huntington's disease and other chronic neurological conditions.

The psychological experience of individuals with Huntington's disease is shaped by multiple interrelated stressors, including awareness of genetic risk, anticipatory grief, progressive loss of autonomy, family communication challenges, and uncertainty regarding disease progression. These factors contribute to heightened vulnerability to anxiety and depressive disorders, often emerging early in the disease course or even during pre-symptomatic stages (4, 5). Research has demonstrated that traditional medical and rehabilitative interventions, while essential for symptom management, are insufficient for addressing the complex emotional and existential challenges faced by this population. This limitation has prompted scholars to emphasize the importance of integrative, psychologically informed care models that explicitly target emotional functioning, coping resources, and positive adaptation (2, 3).

Within this context, positive psychology has emerged as a theoretically grounded and empirically supported framework that offers a complementary perspective to traditional deficit-oriented models of mental health. Rather than focusing exclusively on pathology, positive psychology emphasizes human strengths, positive emotions, meaning, engagement, resilience, and psychological capital as essential components of well-being and recovery. Over the past two decades, this paradigm shift has profoundly influenced psychotherapy research, giving rise to positive psychotherapy as a structured clinical approach designed to cultivate positive emotional experiences, enhance character strengths, foster optimism, and promote purposeful living (6, 7). The relevance of this approach for individuals with chronic illness has been increasingly acknowledged, as positive psychological resources have been shown to buffer stress, improve emotional regulation, and support adaptive coping in the face of persistent health challenges.

Empirical evidence supporting the effectiveness of positive psychotherapy has expanded rapidly across diverse clinical populations. Meta-analytic findings indicate that positive psychotherapy produces moderate to large effects in reducing depressive symptoms and enhancing well-being across clinical and non-clinical samples (7, 8). Systematic reviews further suggest that positive psychology interventions are comparable to, and in some cases complementary with, established treatments such as cognitive behavioral therapy, particularly in improving positive affect, life satisfaction, and psychological functioning beyond symptom alleviation (9). These findings are especially relevant for chronic and progressive conditions, where complete symptom remission may be unrealistic, but improvements in emotional quality of life remain both achievable and clinically meaningful.

A growing body of research has examined the application of positive psychotherapy in populations experiencing depression, anxiety, and stress related to medical conditions. Studies conducted among individuals with cardiovascular disease, chronic pain, pulmonary disorders, and other long-term health conditions demonstrate that positive psychotherapy contributes to reductions in depressive and anxiety

symptoms while simultaneously strengthening resilience, hope, and purpose in life (10-12). These outcomes underscore the potential of strength-based interventions to address the psychological sequelae of chronic illness in a manner that aligns with patients' lived experiences and adaptive capacities.

Research focusing specifically on depression and anxiety further highlights the clinical utility of positive psychotherapy. Controlled trials and comparative studies have shown that positive psychotherapy is effective in reducing depressive symptoms across adolescents, adults, and women experiencing psychosocial stressors such as marital conflict, divorce, and chronic health problems (13-15). Importantly, these interventions not only reduce negative symptoms but also enhance psychological well-being, affective capital, optimism, and emotional awareness, suggesting broader and more sustainable therapeutic effects (10, 16). Such findings reinforce the relevance of positive psychotherapy for populations in which emotional distress is intertwined with ongoing life stressors rather than discrete psychological disorders.

Emotion regulation represents a particularly salient psychological construct in the context of Huntington's disease and other neurological conditions. Difficulties in regulating emotions have been associated with increased psychiatric symptoms, interpersonal conflict, reduced quality of life, and poorer disease outcomes. Positive psychology-based interventions have demonstrated effectiveness in improving emotion regulation strategies by increasing awareness of positive emotions, fostering gratitude, strengthening adaptive reappraisal, and reducing maladaptive suppression (17, 18). These mechanisms are especially relevant for individuals coping with neurodegenerative disease, where emotional dysregulation may be exacerbated by both neurological changes and psychosocial stress.

In recent years, research attention has increasingly turned to the integration of positive psychotherapy within health psychology and behavioral medicine. Conceptual and empirical work suggests that positive psychological processes play a critical role in health behavior change, stress management, and long-term adaptation to illness (19). From this perspective, interventions that cultivate optimism, hope, and meaning may influence not only emotional outcomes but also engagement with treatment, adherence to rehabilitation, and overall health-promoting behaviors. Observational and interventional studies support this assertion, demonstrating links between positive psychological capital and improved health behaviors in patients undergoing medical rehabilitation (12).

Despite the expanding evidence base, the application of positive psychotherapy within neurological populations remains comparatively underexplored. Existing studies in related domains, such as mindfulness-based and acceptance-based interventions for individuals with pre-symptomatic or symptomatic Huntington's disease, provide preliminary support for psychological interventions targeting emotional well-being (4). However, positive psychotherapy offers a distinct theoretical emphasis on strengths, meaning, and positive emotion cultivation, which may be uniquely suited to addressing the existential and emotional challenges inherent in Huntington's disease. The limited number of studies directly examining positive psychotherapy in this population highlights a critical gap in the literature.

Moreover, methodological advances in psychotherapy research have increasingly emphasized the importance of rigorous comparative designs, longitudinal follow-up, and culturally contextualized interventions. Recent randomized and protocol-based studies comparing positive psychotherapy with cognitive behavioral therapy and other evidence-based approaches underscore the need for further empirical investigation into its specific mechanisms and outcomes (20, 21). These developments align with broader

trends in clinical psychology that advocate for pluralistic and integrative treatment models tailored to the complex needs of patients with chronic and progressive conditions.

Taken together, the existing literature suggests that positive psychotherapy holds significant promise as an intervention for reducing depression and anxiety while enhancing emotional regulation and psychological resilience in individuals facing chronic neurological illness. However, empirical evidence specifically addressing its effectiveness in patients with Huntington's disease remains limited, particularly within non-Western and clinical hospital-based contexts. Addressing this gap is essential for informing evidence-based psychosocial care and expanding therapeutic options available to this vulnerable population.

Accordingly, the present study aims to examine the effectiveness of positive psychotherapy on depression and anxiety in patients with Huntington's disease.

Methods and Materials

Study Design and Participants

The present study was applied in nature and employed an experimental design of the pretest–posttest–follow-up type with a control group, in which one experimental group and one control group were used. Before implementing the experimental interventions, a pretest was administered to the experimental and control groups, and one month later, in order to determine the durability of the treatments, the tests were repeated and the follow-up stage was conducted.

The statistical population of the present study comprised all individuals with Huntington's disease who referred to Rasoul Akram Hospital in Tehran in the year 1399. The sampling method in the present study was census sampling consistent with the population. The study sample consisted of all individuals with Huntington's disease who referred to Rasoul Akram Hospital in Tehran. The entire population under study included 20 Huntington's patients, and according to Cochran's sampling formula, 18 individuals should have been considered as the sample. Given the possibility of sample attrition, all 20 Huntington's patients were selected to participate in the study. After obtaining coordination with the authorities of the centers and with the patients, the study questionnaires were distributed among all patients. Then, the 20 patients with Huntington's disease were randomly assigned to the positive psychotherapy experimental group (10 people) and the control group (10 people). A pretest was administered to all groups, and then the positive psychotherapy group received the intervention (six 90-minute sessions held once a week online), whereas the control group did not receive any treatment. Subsequently, a posttest was again administered to all participants in the three groups, and one month later, in order to determine the durability of the treatments, the tests were repeated and the follow-up stage was conducted. It should be noted that after completion of the study, the therapeutic methods were also implemented for the control group.

The inclusion criteria for the study were: voluntary participation in the study, age between 30 and 55 years, no concomitant use of medication for another disorder, obtaining a score at least one standard deviation above the mean on the depression and anxiety questionnaires, and obtaining a score at least one standard deviation below the mean on the life expectancy and emotion regulation questionnaires. The exclusion criteria were the presence of other psychiatric disorders, concomitant use of medication to treat other disorders, unwillingness to continue cooperation, and absence from more than two therapy sessions.

After obtaining the necessary permissions and coordinating with the officials of Rasoul Akram Hospital in Tehran and identifying the sample members, and according to the prior planning, the researcher administered the pretest online and the therapy sessions were also held online. Specifically, after establishing rapport and reducing the participants' sensitivity, the participants were randomly assigned to the experimental and control groups, and the pretest was administered to them. After that, the positive psychotherapy sessions (six 90-minute sessions) were implemented online once a week. Following the interventions, a posttest was administered to the experimental and control groups. In the follow-up phase, one month later, the questionnaires were re-administered and the therapeutic methods were implemented for the control group. At the end, the cooperation of the officials of Rasoul Akram Hospital in Tehran and the patients was appreciated, and they were assured that the results would be reported in aggregate form and that the information would remain confidential. Then the collected data were analyzed.

Data Collection

Clinical (Hospital) Anxiety and Depression Scale (HADS): Assessment of anxiety and depression in patients who have physical symptoms is very specific and particular, because questionnaires related to these conditions generally emphasize physical symptoms. To address this problem, Zigmond and Snaith (1983) developed the Hospital Anxiety and Depression Scale (HADS) as a very appropriate and practical self-report instrument for assessing anxiety and depression in patients with physical and mental problems. Advantages of this questionnaire include its brevity, ease of scoring, and relative sensitivity to change. This questionnaire consists of 14 items and includes two parts, with seven items assessing anxiety and seven items assessing depression. Each item has four response options, and the respondent chooses one option based on how they feel. Each option is assigned a weight between 0 and 3. The scoring weights for statements that indicate the presence of anxiety or depression are such that a score of 3 indicates a high level of anxiety or depression and a score of 0 indicates a minimal level of anxiety or depression. The scoring weights for statements that indicate the absence of anxiety or depression are reversed. The items that reflect the absence of anxiety or depression and are reverse-scored are items 2, 4, 7, 9, 12, and 14. The total scores for each of the two subscales (anxiety or depression) range from 0 to 21. Scores of 11–21 on each subscale are considered clinically suspect for disorder, scores of 8–10 are borderline and non-normal, and scores of 0–7 are considered normal. This questionnaire was standardized in Iran by Kaviani, Seyforian, Sharifi, and Ebrahimkhani (1388) on 261 depressed and anxious individuals, and to assess reliability, internal consistency was measured using Cronbach's alpha formula, with calculated alpha coefficients equal to or greater than 0.70. Test validity was also examined by comparing and calculating group convergence, and the validity of the questionnaire was confirmed. In the present study, Cronbach's alpha coefficient was used to assess the internal consistency of the anxiety and depression questionnaire, and the Cronbach's alpha coefficients for all items were obtained as 0.85 and 0.83, respectively.

Intervention

The positive psychotherapy intervention was implemented based on the positive psychology framework developed by Seligman, Rashid, and Parks and was delivered in six structured sessions over a six-week period, with one 60-minute session conducted each week. The program began with an orientation session

focused on group formation, clarification of therapeutic goals, and introduction to core concepts of positive psychotherapy, particularly the relationship between pleasure, meaning in life, commitment, responsibility, and positive communication, accompanied by reflective self-introduction exercises emphasizing personal strengths. The second session centered on the identification and evaluation of positive traits through structured self-assessment of character strengths, fostering self-awareness, responsibility, and commitment by encouraging participants to recognize and apply their core strengths in daily life. The third session addressed forgiveness and engagement with past experiences, guiding participants toward emotional acceptance, reduction of guilt, and transformation of negative emotional memories into sources of psychological strength through reflective narrative exercises. The fourth session emphasized gratitude by cultivating awareness and appreciation of positive life experiences and relationships, using gratitude letters and reflective practices to enhance positive affect and emotional balance. The fifth session focused on positive relationships and social feedback, training participants in active constructive responding, positive communication skills, and mutual support to strengthen interpersonal functioning and social connectedness. The final session integrated enjoyment and meaning in life by promoting savoring of positive experiences, optimism, and sustained engagement in meaningful life activities, helping participants connect pleasure with purpose and long-term psychological well-being.

Data analysis

For data analysis in this study, descriptive statistics such as mean and standard deviation and inferential statistics such as multivariate analysis of covariance (MANCOVA) and its assumptions, as well as the LSD post hoc test, were used. The SPSS 24 computer software package was employed for data analysis. In addition, the significance level in this study was considered to be $\alpha = 0.05$.

Findings and Results

As can be seen in Table 1, the means and standard deviations of the positive psychotherapy group and the control group are presented. The results show that the scores at the post-test and follow-up stages changed considerably compared with the pre-test stage.

Table 1. Means and Standard Deviations of Depression and Anxiety Scores

Variable	Stage	Positive psychotherapy		Mindfulness-based cognitive therapy		Control group	
		Mean	SD	Mean	SD	Mean	SD
Depression	Pre-test	15.20	3.22	15.60	2.95	16.80	2.20
	Post-test	6.60	5.12	6.00	5.37	15.50	2.54
	Follow-up	7.30	4.54	7.80	4.66	15.70	2.40
Anxiety	Pre-test	16.00	2.40	17.10	2.42	16.30	2.31
	Post-test	6.00	2.40	4.10	2.21	15.00	3.33
	Follow-up	8.00	2.40	4.51	2.21	15.80	2.82

Before conducting the multivariate analysis of covariance, all statistical assumptions were systematically examined and confirmed. First, the assumption of normality was assessed using the Kolmogorov–Smirnov test for depression and anxiety scores in both the positive psychotherapy and control groups at the pre-test, post-test, and follow-up stages, and the results indicated that all significance levels were greater than 0.05, demonstrating that the distributions of the variables did not significantly deviate from normality. Second, the assumption of homogeneity of variances was evaluated using Levene’s test, and the findings showed non-

significant results for both depression and anxiety in the experimental and control groups, confirming equality of variances and supporting the appropriateness of variance-based analyses. Third, the equality of covariance matrices was examined using Box's M test, which yielded a non-significant result, indicating that the covariance matrices of the dependent variables were equal across groups and that this assumption was satisfied. Finally, the assumption of homogeneity of regression slopes, a critical requirement for covariance analysis, was tested by examining the interaction effects between group membership and pre-test scores for depression and anxiety, and the non-significant Group \times Pre-test interaction effects for both variables demonstrated that the regression slopes were parallel across groups. Collectively, these results confirm that all underlying assumptions for conducting multivariate analysis of covariance were adequately met in the present study.

Table 2. ANCOVA Results for Depression and Anxiety Scores at Post-test and Follow-up with Pre-test Scores Controlled

Variable	Source of change	Stage	SS	df	MS	F	P	Effect size
Depression	Pre-test	Post-test	7422.19	1	7422.19	38.56	0.000	0.501
		Follow-up	632.888	1	632.888	45.36	0.000	0.441
	Group membership	Post-test	8763.21	2	8763.21	25.10	0.000	0.612
		Follow-up	3169.91	2	3169.91	61.55	0.000	0.391
Anxiety	Pre-test	Post-test	651.52	1	651.52	67.57	0.000	0.312
		Follow-up	1676.38	1	1676.38	53.98	0.000	0.619
	Group membership	Post-test	195.44	2	195.44	72.42	0.000	0.587
		Follow-up	483.21	2	483.21	19.75	0.000	0.521

As shown in Table 2, after controlling for the effect of pre-test scores for the study variables, the differences between the adjusted means of the two groups at both the post-test and follow-up stages are statistically significant for all study variables (group membership is significant). The effect size of group membership for the depression variable is 0.612 at the post-test stage and 0.391 at the follow-up stage, indicating that group membership explains 0.612 of the variance in scores at post-test and 0.391 of the variance in scores at follow-up; in other words, the therapeutic methods led to a 0.612 improvement in depression at post-test and a 0.391 improvement in depression at follow-up. Similarly, the effect size of group membership for the anxiety variable is 0.587 at the post-test stage and 0.521 at the follow-up stage, indicating that group membership explains 0.587 of the variance in scores at post-test and 0.521 of the variance in scores at follow-up; in other words, the therapeutic methods led to a 0.587 improvement in anxiety at post-test and a 0.521 improvement in anxiety at follow-up.

Discussion and Conclusion

The present study examined the effectiveness of positive psychotherapy in reducing depression and anxiety among patients with Huntington's disease, and the findings provide robust empirical support for the utility of this intervention in a population facing profound neurological and psychological challenges. The results demonstrated that participants who received positive psychotherapy showed a statistically significant reduction in both depression and anxiety at the post-test stage compared with the control group, and that these improvements were largely maintained at the follow-up assessment. The magnitude of the observed effect sizes indicates that positive psychotherapy accounted for a substantial proportion of variance in psychological symptom change, underscoring its clinical relevance. These findings are particularly

noteworthy given the progressive and incurable nature of Huntington's disease, where psychological distress is often persistent and resistant to conventional interventions (1, 2).

From a clinical perspective, the reduction in depressive symptoms observed in the experimental group aligns closely with a growing body of evidence demonstrating the efficacy of positive psychotherapy in alleviating depression across diverse populations. Meta-analytic and systematic review studies have consistently reported that positive psychotherapy produces meaningful reductions in depressive symptomatology, often comparable to established treatments such as cognitive behavioral therapy, particularly when interventions focus on cultivating positive emotions, meaning in life, and personal strengths (7, 9). The present findings extend this evidence base to patients with Huntington's disease, suggesting that even in the context of severe neurological degeneration, interventions emphasizing strengths and positive experiences can counterbalance depressive affect and hopelessness.

The observed improvement in anxiety symptoms further supports the transdiagnostic applicability of positive psychotherapy. Anxiety in Huntington's disease is frequently driven by uncertainty, anticipatory fear, and perceived loss of control related to disease progression and genetic implications for family members (3, 5). Positive psychotherapy addresses these concerns indirectly by enhancing psychological resources such as optimism, hope, and emotional flexibility, rather than targeting anxiety symptoms in a purely symptom-focused manner. This mechanism is consistent with prior findings showing that positive psychology-based interventions are effective in reducing anxiety and stress in both clinical and health-related populations (6, 17).

The maintenance of therapeutic gains at follow-up is a particularly important finding, as it suggests that positive psychotherapy may foster durable psychological changes rather than transient symptom relief. Longitudinal stability of outcomes has been emphasized as a key advantage of strength-based interventions, which aim to modify underlying cognitive-emotional processes such as meaning-making, gratitude, and engagement with valued life activities (19). In patients with chronic and progressive illnesses, sustained improvements in emotional well-being are especially valuable, given the ongoing exposure to stressors and functional decline. The present results are consistent with prior studies reporting lasting effects of positive psychotherapy on psychological well-being, affective balance, and resilience (10, 11).

The findings of this study can also be interpreted within the broader theoretical framework of positive psychology, which posits that cultivating positive emotions and strengths can broaden individuals' cognitive and behavioral repertoires and build enduring psychological resources. This broaden-and-build perspective offers a compelling explanation for the observed reductions in depression and anxiety. By encouraging participants to focus on gratitude, forgiveness, positive relationships, and meaning, positive psychotherapy may have facilitated adaptive emotional regulation processes that mitigated negative affect and psychological distress. Empirical studies have shown that such processes are closely linked to improvements in emotional regulation and reductions in maladaptive strategies such as emotional suppression (17, 18).

Importantly, the present findings are congruent with research demonstrating the effectiveness of positive psychotherapy in populations experiencing both psychological and physical health challenges. Studies involving patients with cardiovascular disease, chronic pain, and pulmonary disorders have reported similar patterns of reduced depression and anxiety alongside enhanced resilience and quality of life (11, 12). These

parallels suggest that the benefits of positive psychotherapy may be particularly salient in medical populations where psychological distress is intertwined with physical illness and functional limitations.

The results also align with comparative studies showing that positive psychotherapy performs favorably relative to other evidence-based interventions. Research comparing positive psychotherapy with cognitive behavioral therapy and acceptance-based approaches has indicated that while symptom reduction may be comparable, positive psychotherapy often yields additional gains in psychological well-being, purpose in life, and positive affect (13, 16, 20). For patients with Huntington's disease, whose psychological burden extends beyond discrete symptoms to encompass existential concerns and identity changes, these broader outcomes are particularly relevant.

Another important implication of the findings relates to the role of psychological capital and resilience in chronic illness adaptation. Positive psychotherapy explicitly targets constructs such as hope, optimism, and meaning, which have been shown to mediate the relationship between illness-related stress and mental health outcomes (22, 23). By strengthening these resources, positive psychotherapy may help patients reinterpret their illness experience in a less catastrophic and more manageable way, thereby reducing anxiety and depressive affect. This interpretation is consistent with observational evidence linking positive psychological capital to healthier coping and lifestyle behaviors in patients undergoing medical rehabilitation (12).

The present study also contributes to the limited literature on psychosocial interventions specifically tailored to Huntington's disease. While previous research has explored physical therapy recommendations, family communication challenges, and mindfulness-based interventions in this population (2, 4), few studies have directly examined structured psychotherapeutic approaches grounded in positive psychology. The current findings therefore represent an important step toward diversifying and enriching the psychosocial care options available for individuals with Huntington's disease.

Taken together, the results of this study suggest that positive psychotherapy is not only effective in reducing depression and anxiety in patients with Huntington's disease, but also holds promise as a holistic intervention that addresses the broader emotional and existential dimensions of living with a progressive neurological disorder. These findings support the integration of positive psychotherapy into multidisciplinary care models for Huntington's disease and contribute to the growing recognition of strength-based approaches in clinical health psychology.

Despite the strengths of the present study, several limitations should be acknowledged. First, the relatively small sample size limits the generalizability of the findings and may reduce statistical power. Second, the study relied primarily on self-report measures, which may be influenced by response biases and participants' subjective perceptions. Third, the follow-up period was relatively short, making it difficult to draw conclusions about the long-term sustainability of treatment effects. Finally, the study was conducted within a single clinical setting, which may limit the applicability of the results to other cultural or healthcare contexts.

Future research should aim to replicate these findings using larger and more diverse samples to enhance external validity. Longitudinal studies with extended follow-up periods are needed to examine the durability of positive psychotherapy effects over time, particularly in the context of disease progression. Comparative studies evaluating positive psychotherapy alongside other evidence-based interventions could further clarify

its relative efficacy and mechanisms of action. Additionally, future research may benefit from incorporating qualitative methods to capture patients' lived experiences and subjective perceptions of change resulting from positive psychotherapy.

From a practical standpoint, the findings suggest that clinicians working with patients with Huntington's disease may consider incorporating positive psychotherapy techniques into routine care. Training healthcare professionals in strength-based and positive psychology-informed interventions could enhance the psychological support provided to this population. Integrating positive psychotherapy within multidisciplinary treatment teams may also improve holistic care by addressing emotional well-being alongside medical management. Finally, adapting positive psychotherapy protocols for online or group-based delivery may increase accessibility for patients with mobility limitations or those living in remote areas.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

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

Transparency of Data

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

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