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EXPLORING THE IMPACT OF ACCEPTANCE AND COMMITMENT THERAPY ON PERCEIVED STRESS AND PSYCHOLOGICAL FLEXIBILITY IN PSYCHIATRIC NURSES: A RANDOMIZED CONTROLLED TRIAL

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Abstract

Psychiatric nursing is inherently stressful due to the complexities of patient care and communication challenges. Effectively managing this stress is essential for enhancing nurses' well-being and improving the quality of care they provide. This study investigated the impact of Acceptance and Commitment Therapy (ACT) on perceived stress (PS) and psychological flexibility (PF) among psychiatric nurses. Seventy nurses from the Razi Psychiatric Center in Rawalpindi were randomly assigned to either an experimental group (n = 35) or a control group (n = 35). While the control group continued with standard care, the experimental group received eight 2-hour ACT training sessions in addition to routine interventions. Assessments, including demographic data, the Perceived Stress Scale, and the Acceptance and Action Questionnaire (2nd Edition), were conducted before the intervention and one month after the final session. The findings indicated a significant reduction in PS (P = 0.002) and an increase in PF (P = 0.001) in the experimental group compared to the control group. These results suggest that ACT is an effective intervention for reducing perceived stress and enhancing psychological flexibility among psychiatric nurses. Implementing ACT in psychiatric settings could serve as a valuable strategy to improve nurses' mental well-being and resilience in high-stress environments.

INTRODUCTION

Occupational stress and burnout are critical concerns in healthcare professions, particularly in nursing, which is widely recognized as a highly demanding and stressful career due to its complexity and the need to handle emergencies (Chou, Li, & Hu, 2014). Various stressors contribute to the psychological burden on nurses, including communication with patients and their families, collaboration with multidisciplinary teams, heavy workloads, long working hours, dissatisfaction with salary and benefits, and the requirement to work on holidays (Van Bogaert et al., 2014). When stress levels exceed a nurse's coping capacity, it can lead to increased absenteeism, reduced job satisfaction, lower productivity, and decreased organizational commitment, ultimately impacting the quality of patient care (Keykaleh et al., 2018). Among the different healthcare settings, psychiatric wards are

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particularly stressful due to the nature of patients and the challenges in communication. Nurses working in these settings provide continuous care and support to individuals diagnosed with depression, anxiety, schizophrenia, bipolar disorder, and personality disorders (Safarpour et al., 2018). The responsibilities associated with psychiatric nursing—such as collaborating with other healthcare staff, maintaining high levels of clinical expertise, managing heavy caseloads, and responding promptly to crises—further intensify occupational stress (Shin et al., 2020).

Psychiatric nurses frequently encounter aggression from patients, making them vulnerable to workplace violence. Studies suggest that nearly 75% of psychiatric nurses experience aggression or physical assault from patients at least once in their careers, with those possessing lower expertise at a greater risk (Renwick et al., 2016; Tonso et al., 2016). There is a strong correlation between burnout and psychological symptoms such as depression, anxiety, and stress among nurses (Sharma et al., 2020). Psychological inflexibility has been identified as a significant predictor of burnout, particularly in terms of emotional exhaustion (Durat et al., 2019). Many psychiatric nurses perceive their distressing thoughts, emotions, memories, and internal experiences as negative or undesirable, leading to increased burnout as they attempt to suppress or avoid these experiences (Durat et al., 2019). Burnout not only affects the well-being of nurses but also negatively impacts the healthcare system by reducing job performance and increasing absenteeism, ultimately compromising the quality of patient care (Maslach & Leiter, 2016; Sharma et al., 2020). Research has shown that nurses experiencing high levels of burnout also report greater perceived stress (Safarpour et al., 2018; Shin et al., 2020; Tonso et al., 2016). These findings highlight the need for further exploration of factors contributing to occupational stress in psychiatric nurses and the development of targeted interventions to mitigate its adverse effects (Durat et al., 2019; Maslach & Leiter, 2016).

The extent of stress experienced by healthcare providers may be influenced by individual psychological factors such as self-efficacy, coping skills, and motivation (Sharma et al., 2020). Psychological flexibility (PF), a core concept in contextual behavioral science, refers to an individual's ability to adapt to challenging psychological experiences while continuing to act in accordance with personal values and goals (Hayes, Strosahl, & Wilson, 2012). Unlike traditional distress-focused models, PF emphasizes resilience and effective coping strategies (Hayes et al., 2012). Acceptance and Commitment Therapy (ACT) is designed to enhance mental well-being by promoting PF and reducing perceived stress. As part of the third wave of cognitive-behavioral therapies, ACT encourages individuals to make value-driven decisions rather than attempting to suppress unpleasant emotions, thoughts, or memories (Hayes et al., 2012). Studies have demonstrated that PF is a crucial determinant of psychological well-being, offering additional benefits beyond traditional distress-management approaches (Levin et al., 2014). However, further research is needed to clarify the relationship between PF and general psychological distress and to differentiate PF from other constructs (Levin et al., 2014; Hayes et al., 2012).

The effectiveness of ACT in occupational health settings has been well-documented. A meta-analysis by Ost (2014) confirmed that ACT effectively reduces stress and that PF may serve as a mediating factor in these outcomes (Bond et al., 2011; Ost, 2014). Research involving nursing students suggests that ACT-based interventions can prevent stress and burnout during professional training (Shin et al., 2020). The growing body of evidence highlights ACT's effectiveness in addressing a range of psychological and behavioral concerns, including depression, substance abuse, chronic pain, anxiety, psychosis, smoking cessation, diabetes self-management, cancer adaptation, obsessive-compulsive disorder, and trichotillomania (A-Tjak et al., 2015; Hayes et al., 2012). Despite these promising findings, limited research has explored the impact of ACT specifically on psychiatric nurses.

This study was conducted at Psychiatric Hospitals in Rawalpindi, involving psychiatric nurses working with patients diagnosed with psychotic disorders. Given the high prevalence of stress and burnout among psychiatric nurses and the potential benefits of PF, this study aims to evaluate the effectiveness of ACT as an educational intervention in reducing

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perceived stress (PS) and enhancing psychological flexibility (PF) among nurses working in psychiatric settings.

Methodology

Research Hypothesis: This study aimed to investigate whether Acceptance and Commitment Therapy (ACT) positively influences psychological flexibility (PF) and reduces psychological stress (PS) among nurses. The research hypothesis proposed that ACT would significantly enhance PF while decreasing PS in psychiatric nurses, aligning with previous studies indicating its efficacy in stress management and psychological well-being (Hayes et al., 2006).

Setting and Study Design: The research was conducted at Rawalpindi Psychiatric Center, specifically focusing on psychiatric nurses employed at the facility. A randomized controlled trial (RCT) design was utilized, incorporating a pretest-posttest format with both experimental and control groups. Ethical approval was obtained from the Clinical Research Ethics Committee of the hospital, and written informed consent was secured from all participants before the commencement of the study.

Sample Size and Sampling Method: To achieve a 95% confidence level and 80% power, the study hypothesized that ACT would have a significant impact on PF and PS, with an effect size of d = 0.7. Based on the sample size formula: $1+n=(Z1-\alpha/2+Z1-\beta d)2$, the calculated sample size was 33 participants per group. Given a standard deviation of 14.5 for PF and PS and considering a potential 10% dropout rate, the final adjusted sample size was 35 participants per group (Cohen, 1988).

Random Allocation: Participants were selected through stepwise random cluster sampling. The hospital consisted of 23 wards, from which nurses were randomly chosen proportionally based on the total sample size. Initially, 84 nurses were selected, but 14 were excluded for not meeting the inclusion criteria. The remaining 70 nurses were assigned numbers and then randomly allocated into two groups: an experimental group and a control group, each comprising 35 participants (Altman, 1991).

Inclusion and Exclusion Criteria: The study followed specific inclusion and exclusion criteria to ensure participant suitability:

- Inclusion Criteria: Nurses were required to have a minimum of a bachelor's degree in nursing, at least two years of experience working in psychiatric wards, and no prior exposure to ACT-based interventions. Additionally, participants should not have a history of psychiatric medication use.
- Exclusion Criteria: Nurses who failed to complete required questionnaires, missed more than one intervention session, or encountered significant stressful events during the study period were excluded. Consequently, two participants from the experimental group were removed due to excessive absences.

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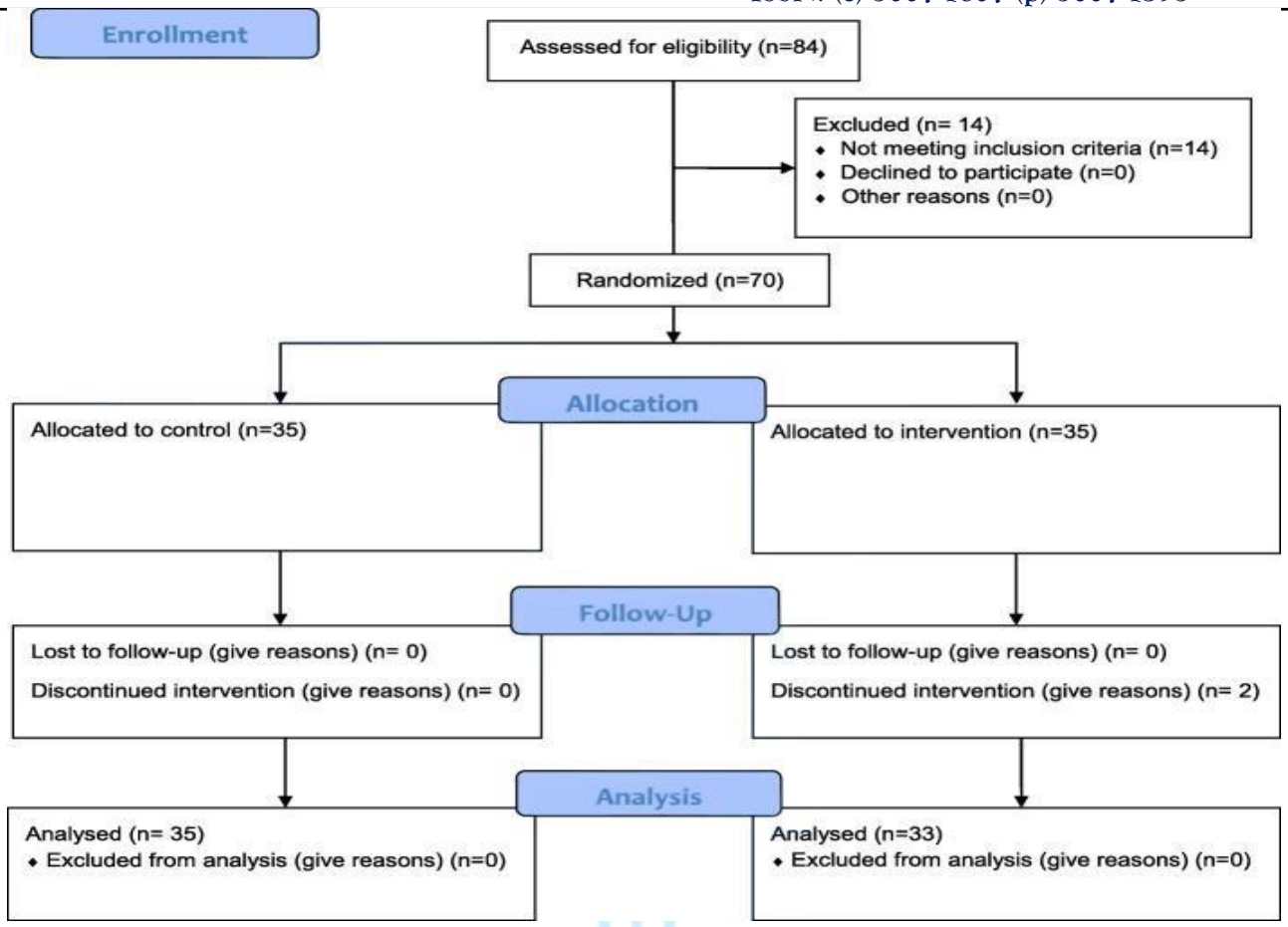

Figure 1 Flow diagram illustrating the progression through the phases of the two-group parallel randomized trial

Procedure: The experimental group participated in eight two-hour ACT-based training sessions following Steven Hayes' model, conducted by a certified ACT therapist (Hayes et al., 2012). In contrast, the control group received standard interventions, including workshops on stress management, life skills, and anger control, which were routinely organized for hospital staff. Before the intervention, both groups completed a demographic questionnaire, the Perceived Stress Scale (PSS), and the Acceptance and Action Questionnaire-II (AAQ-II). These assessments were repeated one month after the final intervention session. The control group completed assessments following the same schedule as the experimental group. All participants received detailed explanations regarding study procedures before providing informed consent.

Instruments and Measures: The study employed three validated instruments to measure relevant variables:

1. Demographic Information Questionnaire: This questionnaire gathered details such as age, gender, marital status, educational level, employment status, and duration of employment.
2. Perceived Stress Scale (PSS): Developed by Cohen et al. (1983), the 14-item PSS assesses perceived stress over the past month, measuring participants' thoughts and feelings about stressors and their coping ability. Scores range from 0 to 56, with higher scores indicating greater perceived stress. The PSS has demonstrated strong validity, with correlation coefficients ranging from 0.52 to 0.76, and internal consistency measured by Cronbach's alpha at 0.74 in previous studies (Alsouni & Latif, 2014). In this study, the PSS demonstrated good reliability with a Cronbach's alpha of 0.88.
3. Acceptance and Action Questionnaire-II (AAQ-II): The AAQ-II, developed by Bond et al. (2007) as a revision of the original AAQ-I (Hayes, 2000), assesses psychological flexibility, including

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experiential avoidance and acceptance. It consists of seven items rated on a 7-point Likert scale, ranging from 1 ("does not apply to me at all") to 7 ("always applies to me"). Total scores range from 10 to 70, where higher scores reflect greater experiential avoidance, whereas lower scores indicate stronger psychological flexibility. Previous research reported a Cronbach's alpha of 0.81–0.88 for the AAQ-II (Bond et al., 2011). In this study, internal consistency was measured at 0.83, confirming its reliability.

Statistical Analysis

To maintain group equivalence, data from two participants in the control group were randomly excluded, resulting in 35 participants in each group for the final analysis. Statistical analyses were conducted using SPSS version 23. A one-way ANOVA was performed to examine the relationship between demographic variables and psychological flexibility (PF) and perceived stress (PS) in both the intervention and control groups. Additionally, a single-variable covariance analysis (ANCOVA) was employed to assess the effect of Acceptance and Commitment Therapy (ACT) on PF and PS among psychiatric nurses. Levene's test for homogeneity of variances was non-significant ($p \geq 0.05$), confirming that the assumption of equal variances was met. Furthermore, the Kolmogorov-Smirnov test indicated that the data were normally distributed ($p \geq 0.05$). The demographic characteristics of participants, including age range, gender, education level, work experience, marital status, and employment status, are presented in Table 1. Additionally, Table 2 summarizes the mean scores and standard deviations for pre-test and post-test variables among psychiatric nurses.

Table 1: Demographic Characteristics of Participants

The demographic characteristics of participants, including their frequency and percentage distributions, are presented below:

Demographic Characteristics	Experimental Group (n = 35)	Control Group (n = 35)
Age Range	f (%)	f (%)
Under 25	5 (14.3)	3 (8.6)
25–30	8 (22.9)	3 (8.6)
31–35	10 (28.6)	11 (31.4)
36–40	6 (17.1)	9 (25.7)
41 and over	6 (17.1)	9 (25.7)
Gender		
Male	16 (45.7)	17 (48.6)
Female	19 (54.3)	18 (51.4)
Education		
B.S	30 (85.7)	30 (85.7)
M.Sc	4 (11.4)	5 (14.3)
Ph.D.	1 (2.9)	0 (0)
Work Experience		
3–9 years	9 (25.7)	7 (20)
10–16 years	20 (57.1)	16 (45.7)
17–23 years	6 (17.1)	9 (25.7)
24–30 years	0 (0)	3 (8.6)
Marital Status		
Single	10 (28.6)	6 (17.1)
Married	25 (71.4)	28 (80)
Divorced	0 (0)	1 (2.9)
Employment Status		

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Official Recruitment	17 (48.6)	19 (54.3)
Contract Worker	2 (5.7)	2 (5.7)
Company Worker	5 (14.3)	6 (17.1)
Project Worker	11 (31.4)	8 (22.9)

Table 2: Mean Scores and Standard Deviations of Pre-Test and Post-Test Variables for Psychiatric Nurses

The table presents the mean scores and standard deviations for Perceived Stress (PS) and Psychological Flexibility (PF) in both the experimental and control groups before and after the intervention.

Variables	Experimental Group (n = 35)	Control Group (n = 35)
	Pre-Test Mean ± SD	Post-Test Mean ± SD
Perceived Stress (PS)	23.42 ± 6.02	18.66 ± 5.44
Psychological Flexibility (PF)	47.13 ± 9.42	55.49 ± 9.55

Note: PF = Psychological Flexibility, PS = Perceived Stress.

Table 3: One-Way ANOVA Results for the Relationship Between Demographic Variables and Psychological Flexibility (PF) and Perceived Stress (PS)

This table presents the significance levels and F-values from one-way ANOVA analyses examining the associations between demographic variables and levels of Psychological Flexibility (PF) and Perceived Stress (PS) in both the experimental and control groups, before and after the intervention.

Variables	Groups	Pre-Test	Post-Test
		Significance Level	F
Age × PF	Control	0.373	1.11
	Experimental	0.089	2.39
Age × PS	Control	0.076	2.40
	Experimental	0.977	0.111
Education × PF	Control	0.868	0.033
	Experimental	0.942	0.060
Education × PS	Control	0.578	0.316
	Experimental	0.237	1.51
Gender × PF	Control	0.918	0.011
	Experimental	0.438	0.620
Gender × PS	Control	0.845	0.039
	Experimental	0.526	0.412
Work Experience × PF	Control	0.926	1.51
	Experimental	0.136	1.15
Work Experience × PS	Control	0.787	0.354
	Experimental	0.737	0.309
Marital Status × PF	Control	0.262	1.40
	Experimental	0.410	0.923
Marital Status × PS	Control	0.254	1.44
	Experimental	0.712	0.300
Employment Status × PF	Control	0.272	1.37
	Experimental	0.142	1.97
Employment Status × PS	Control	0.622	0.598
	Experimental	0.596	0.641

Note: PF = Psychological Flexibility, PS = Perceived Stress.

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The results indicate that work experience had a marginally significant effect on psychological flexibility (PF) in the experimental group during the post-test phase ($p = 0.066$, $F = 3.01$). Other demographic variables did not show significant associations with PF or PS in either group.

Table 4: Single-Variable Covariance Test Results for the Effect of Acceptance and Commitment Therapy (ACT) on Psychological Flexibility (PF) and Perceived Stress (PS)

This table presents the results of the single-variable covariance test, illustrating the impact of Acceptance and Commitment Therapy (ACT) on Psychological Flexibility (PF) and Perceived Stress (PS) among psychiatric nurses.

Variable	Test Phase	Sum of Squares	df	Mean Squares	F	Significance Level
PF	Experimental Group Pre-Test	2720.31	1	2720.31	97.61	0.00**
	Experimental Group Post-Test	1033.51	1	1033.51	37.80	0.00**
PS	Experimental Group Pre-Test	1122.02	1	1122.02	103.24	0.00**
	Experimental Group Post-Test	308.26	1	308.26	28.36	0.00**

PF Psychological Flexibility, and PS Perceived Stress

Discussion

This study aimed to evaluate the impact of Acceptance and Commitment Therapy (ACT) on psychological flexibility (PF) and perceived stress (PS) among psychiatric nurses. Notably, this research is the first of its kind to focus specifically on this population. The findings revealed no significant relationship between demographic variables—such as age, sex, education, work duration, marital status, and employment status—and the mean scores for PF and PS in both the experimental and control groups at the pre-test and post-test stages.

The results demonstrated that ACT significantly improved PF and reduced PS among psychiatric nurses, supporting previous research findings by Wersebe et al. (2018) and Frogeli et al. (2016). For instance, Wersebe et al. (2018) conducted a study in Switzerland involving 91 participants experiencing high levels of occupational stress and found that ACT effectively reduced stress, enhanced well-being, and increased PF, which in turn contributed to improved mental health. The PF model is recognized as one of the most promising frameworks associated with cognitive behavioral therapy (CBT), specifically ACT (Gloster et al., 2020). Systematic reviews have consistently reported ACT's positive effects on depression, anxiety, and subjective well-being by enhancing PF among both clinical and non-clinical populations, with effect sizes ranging from small to medium (Cohen's $d = 0.24–0.64$) (Gloster et al., 2020).

Furthermore, studies have demonstrated a strong association between PF and prosocial behavior, indicating that ACT may improve mental health outcomes by fostering prosociality. Mariola et al. (2020) suggested that psychological interventions focusing on emotional regulation, empathy, perspective-taking, gratitude, and compassion could enhance motivated prosocial behaviors. Future ACT studies should explore whether addressing these modifiable psychological factors could cultivate a helping attitude and behavior as an alternative coping mechanism. Additionally, recent research suggests that even brief PF training, such as an experiential metaphorical exercise aimed at present-moment awareness, may increase prosocial behavior (Gloster et al., 2020).

In this study, we observed that an overall increase in PF during the intervention was associated with decreased stress and increased well-being post-intervention. These results align with previous research on stress management among social workers, which found that variations in PF during the intervention correlated with reduced stress levels (Brinkborg et al., 2011; Frogeli et al., 2016). Similarly, Frogeli et al. (2016) and Markanday et al. (2012) investigated the role of mindfulness in reducing PS and burnout, concluding that ACT was effective in enhancing psychological resilience. Studies by Brinkborg et al. (2011) and Flexman et al. (2010) further demonstrated that ACT reduced stress and improved general health, while Swain et al. (2013) found ACT to be effective in treating anxiety disorders. Given that chronic stress can significantly disrupt daily life, research suggests that ACT can help reframe stress responses, thereby mitigating its

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impact (Fledderus et al., 2010). Our findings suggest that individuals with stress symptoms may benefit from structured self-help interventions, such as the one used in this study, which promoted enhancements in PF.

Well-being is a crucial determinant of individual health, societal progress, and economic stability, and our findings confirm that PF is strongly related to well-being. Research shows that well-being is linked to healthcare utilization, psychosocial adaptation, and work productivity (Chida & Steptoe, 2008; Keeley et al., 2016). ACT-based interventions have been associated with significant improvements in well-being (Bohlmeijer et al., 2015; Livheim et al., 2015). Within the framework of ACT, therapists do not require patients to accept their thoughts as truth but rather encourage them to acknowledge their thoughts without identifying them as absolute reflections of their mental state. Since distress is an inevitable part of life, avoiding such experiences exacerbates psychological suffering and reduces quality of life. Thus, psychotherapy is essential in helping individuals accept distress rather than resist it. The core principle of ACT is that a significant portion of psychological distress is a normal aspect of human experience (Flaxman et al., 2010). Rather than attempting to eliminate distressing thoughts, ACT helps individuals redefine their relationship with these thoughts, reducing their negative impact on daily life. The ultimate goal of ACT is to facilitate a meaningful, value-driven life rather than directly modifying painful experiences.

Limitations

This study had several limitations that should be acknowledged. One major limitation was the randomization process, which was conducted within a single center, potentially influencing the intervention's effects and limiting the generalizability of the findings. Additionally, the t-test analysis was applied to the same dataset without appropriate statistical corrections, which may have introduced bias. Another limitation was the relatively small sample size, which may have impacted the statistical power of the study. Furthermore, the study was conducted at a single hospital, restricting the applicability of the findings to a broader population of psychiatric nurses. Future research should consider multi-center trials with larger sample sizes and more robust statistical methods to validate the effectiveness of ACT in reducing stress and enhancing psychological flexibility among healthcare professionals.

Conclusion

In conclusion, Acceptance and Commitment Therapy (ACT) techniques appear to be effective in promoting present-moment awareness, reducing psychological stress (PS), and enhancing psychological flexibility (PF) among psychiatric nurses. By encouraging individuals to focus on neutral stimuli and maintain awareness of their thoughts and bodily sensations, ACT helps them detach from distressing emotions and concerns about interpersonal relationships. This therapeutic approach not only reduces physiological stress but also fosters positive thinking and social communication, enabling nurses to address their emotional challenges with external support. As a result, ACT contributes to improved mental resilience and overall well-being.

However, this study had some limitations. The limited number of participating nurses and the biweekly session schedule may have impacted the consistency of intervention exposure. Additionally, the study's short duration and its implementation in a single psychiatric center restricted the ability to assess long-term outcomes. Future research should expand the scope by examining ACT's effects in diverse hospital settings, incorporating multiple assessment tools such as interviews, observations, and standardized questionnaires. Comparative studies exploring the effectiveness of ACT alongside other third-wave psychotherapies could provide further insights. Additionally, qualitative research methods may offer a deeper understanding of the mechanisms through which ACT influences psychological stress and flexibility in healthcare professionals.

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