

# Targeting Burnout and Emotional State in Nurses within a Mental Health Care Setting: A Quasi-Experimental Study

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## Abstract

Nurse burnout is a widespread phenomenon that may impact their quality of life, work efficacy and organisational commitment. Hence, the need for interventions that enhance nurse well-being, and which target the needs and concerns of professionals working in a complex and dynamic context. The aim of this study is to examine the effectiveness of an intensive intervention for nurses providing care to persons with mental illnesses. A quasi-experimental study was conducted with 120 nurses. Sixty-eight nurses received the intervention, and fifty-two nurses were in the control group. The intervention incorporated sessions on: (i) critical and creative thinking; (ii) mindfulness; (iii) legal issues; (iv) documentation and (v) expressive arts. Participants completed the Maslach Burnout Inventory and the DASS-21 at pre- and post- test. The single day intervention was repeated for 4 consecutive times. Data were analysed using the Pearson's chi square test, Wilcoxon sign test, Mann-Whitney U test, Spearman's rank order correlation and a general linear model. Significant decreases in burnout-depersonalisation, stress and anxiety were identified post intervention. Stress, personal accomplishment (burnout), gender and age-group were predictors of the burnout domain- depersonalisation. Interventions incorporating critical and creative thinking and legal issues in addition to cognitive and expressive art sessions, are efficacious in reducing burnout, anxiety, and stress in nurses.

**Keywords:** critical thinking, nursing, burnout, depression, stress, anxiety, quasi-experimental design

## 1. Introduction

Numerous empirical studies addressing burnout in healthcare providers, have accumulated since it was initially construed in the early 1970s. A meta-analysis conducted by Zeng et al. (2020) has demonstrated that burnout is notably common among mental health nurses, particularly those with less working experience and is associated with a decreased quality of life, increased depressive symptoms, anxiety, sleep problems, impaired memory, back pain and alcohol consumption. The additional costs of burnout to organizations are also documented and include negative attitudes, absenteeism and high staff turnover (Ohue et al., 2021). According to Johnson et al. (2018) burnout is usually caused by an imbalance of demands and resources between helpers and help recipients, and factors contributing to this imbalance include the 'emotional labour' of caring for persons with mental illness, inadequate staffing, underfunding of mental health services, detaining, and treating patients against their will and encountering higher levels of violence. Despite the identification of these potential triggering factors, extant research on burnout among mental healthcare providers staggers when compared to other occupational groups.

The current global evidence of burnout among mental health nurses, highlights the need for interventions that target emotionality inherent in their everyday practice (Alenezi et al., 2019). Interventions targeting burnout have been categorized into individual and organisational based person-directed interventions. These typically comprise classic cognitive-behaviour principles (e.g., cognitive restructuring) or third-generation cognitive-behavioural techniques (e.g., meditation, mindfulness), whilst organization-directed interventions include educational interventions, work scheduling changes and co-worker support groups (Johnson et al., 2018). A meta-analysis of burnout intervention studies among mental health providers demonstrated that the intervention subtypes (i.e.,

person directed/organization directed/combined) did not differ significantly in remediating composite burnout (Dreison et al., 2018). However, person-directed interventions have been found to be more effective in addressing the emotional exhaustion component of burnout. Whilst a systematic review of the effect of mindfulness-based person-directed programmes for burnout syndrome in nursing highlight, that programmes with shorter durations are equally effective and attenuate drop-out rates (Suleiman-Martos et al., 2020).

A critical review of burnout interventions among mental health providers demonstrates the heterogeneity of studies relating to study designs, outcome measures, types and durations of interventions that hamper comparisons and conclusions (Alenezi et al., 2019). Most studies tend to include cross-sectional or correlational designs which yield less robust results than longitudinal designs, whilst effect sizes are not always indicated in studies (Salvado et al., 2021). Moreover, although the Maslach Burnout Inventory (MBI) remains the most widely used instrument in assessing burnout in nurses, comparisons between studies using this tool are encumbered by a heterogenous use of the tool, whereby different versions and scale items are used (Khatatbeh et al., 2022). The current research uses the MBI-Human Services Survey (MBI-HSS) that is designed specifically for professionals in the human services and consists of the following sub scales: 'emotional exhaustion'; 'depersonalisation' (conceptualized as the impersonal response towards recipients of one's care) and 'personal accomplishment' in one's work.

Various recommendations relating to nursing interventions on burnout and emotional state have been made. These include addressing participants' needs and cultural contexts when formulating interventions (Ruiz-Íñiguez et al., 2021) and the inclusion of additional outcome measures that complement the MBI in studies (Dreison et al., 2018). This was addressed in the present research through the collection of additional data on anxiety, depression and stress in nurses using the Depression, Anxiety, Stress Scale (DASS-21) (Lovibond & Lovibond, 1995). Another recommendation cited relates to the inclusion of new content apart from mindfulness in interventions (Zeng et al., 2020). The present study addressed this recommendation through the additional inclusion of sessions on critical and creative thinking skills; legal issues; documentation and expressive arts. Critical and creative skills were included in the intervention, as they foster a sense of freedom and autonomy in the person. They also provide space for the generation of ideas, whilst also instilling a greater willingness for care providers to confidently step outside of their comfort zone (Ma et al., 2018). This notion of critical thinking was approached using the critical thinking model for nursing judgement as outlined by Kataoka-Yahiro and Saylor (1994). In this model different levels and components of critical thinking were used to build practical examples stimulating reflection and discussion. This enabled the participants to focus on the importance of seeking alternatives to move away from functional fixedness, thus shifting of their perspectives to change problems into opportunities. A session on legal issues was also included to address nurse vulnerability in relation to a lack of knowledge on patients' rights and the signing of legal documents (Shenai et al., 2019; Xavier et al., 2019), whilst the session on documentation targeted what Bjerkan et al. (2021) describe as the lack of knowledge and a sense of insecurity regarding correct documentation procedures in healthcare professionals. The decision to include expressive arts was influenced by the role of creativity as a means of reducing nursing stress, thus positively targeting their well-being (Phillips & Becker, 2019).

With these considerations in mind, the current quasi-experimental design addressed the following research question: What is the impact of an intervention that incorporates critical and creative thinking, legal issues, mindfulness, documentation and the expressive arts on nurses' levels of burnout, depression, anxiety and stress?

## **2 Method**

### *2.1 Study Design*

A non-equivalent control group pretest-posttest quasi-experimental research design was used. This choice of design enabled the evaluation of the intervention by examining levels of burnout, anxiety, depression and stress prior to commencing the intervention (T1) and then on completion (T2). The intervention consisted of a full day workshop with a duration of 7 hours. The workshop was held over a single day as this would prove less challenging for nurses to attend. The intervention was conducted outside their workplace setting, on university premises.

### *2.2 Participants*

The target population consisted of all nurses working within the main psychiatric hospital. Inclusion criteria for the study included full-time qualified nurses who provided care to persons with mental health conditions. A total of 120 participants agreed to partake in the study (i.e., within the intervention or control group) from a total of 230 nurses working in the mental health sector providing a margin of error of 6.2% assuming a 95% confidence level. An a priori power analysis was also conducted using G\*Power version 3.1.9.7 (Faul et al., 2007) to determine the representative sample size required to test the study hypothesis. Results indicated the required sample size to achieve 80% power for detecting a medium effect size ( $d = 0.472$ ), at a significance criterion of  $\alpha = 0.05$  was  $N =$

120 participants for the Mann Whitney test. Using an allocation ratio of 1.308, a sample of 68 participants in the experimental group and 52 participants in the control group was deemed adequate to test the study hypotheses.

In the present study 37.5%, 50% and 35% of nurses experienced some degree (i.e., mild/moderate/severe/extremely severe levels) of stress, anxiety and depression respectively at baseline. Whilst for burnout scores by total sample, approximately half of the study participants perceived themselves as emotionally exhausted (55.8%) and withdrawn from work (52.5%) and 74.2% expressed a sense of personal accomplishment at baseline.

### 2.3 Procedure

A total of four workshops were organised with a maximum number of 18 participants within each workshop. The number of participants in each workshop was restricted to enable effective interaction with the professionals delivering the intervention. Participants were also informed that the workshops would be held over 4 consecutive days. Those nurses who could attend on any one of these 4 days were assigned to the intervention group. Whilst those nurses who were willing to participate in the study but could not attend any one of the 4 days assigned, accepted to form part of the control group. Hence, the intervention group consisted of 68 nurses and the control group of 52 nurses. Participants in the intervention group were instructed not to discuss details pertaining to the intervention with other colleagues outside their specific workshop.

The single day intensive workshop consisted of face-to face sessions on the following topics. The number in the brackets represents the duration of each session.

- (i) mindfulness (1.5 hours)
- (ii) expressive arts (1.5 hours)
- (iii) documentation in the mental health nursing context (1 hour)
- (iv) critical and creative thinking skills (1.5 hours)
- (v) legal issues (1.5 hours)

### 2.4 Measures

Anonymous data were collected both at pre- (T1) and post- test (T2) using a socio-demographic questionnaire; the Maslach Burnout Scale (Maslach et al., 1996) and the Depression, Anxiety, Stress Scale (DASS-21) (Lovibond & Lovibond, 1995).

(i) The socio-demographic questionnaire collated data regarding gender and clinical attributes such as the level of nursing education, years of professional experience in a general nursing and in a mental health setting and the clinical area where the nurse currently worked (e.g., acute/chronic/community).

(ii) Burnout was measured using a self-rating scale developed by Maslach et al. (1996). The tool consisted of 22 items and three subscales namely: emotional exhaustion (EE), depersonalisation (DP), and personal accomplishment (PA). All MBI items are scored on a 7-point Likert Scale from 0 (never) to 6 (experiencing that every day). In the EE subscale, nine items were related to compassion fatigue and the reduction of emotional energy with a score range of 0–54 (a score of < 19 was considered low burnout, 19–26 reflected moderate burnout, and > 26 reflected high burnout). In the DP subscale, five items reflected the extent to which a person was removed emotionally towards those being cared for, with a score range of 0–30 points (< 6 reflected low burnout, 6–9 reflected moderate burnout, and > 9 indicated high burnout). In the PA dimension, eight items defined the person's sense of satisfaction at work, with a score range of 0–48 points (> 39 reflected low burnout, 34–39 indicated moderate burnout, and < 34 reflected high burnout). Higher score for EE and DP and lower scores on personal accomplishment were associated with an increased risk of burnout. The internal reliability coefficients with a nursing population were satisfactory for the following MBI subscales: 0.85 for emotional exhaustion, 0.71 for depersonalization and 0.76 for personal accomplishment (Moalemi et al., 2018).

(iii) The third questionnaire, the Depression, Anxiety, Stress Scale (DASS-21; Lovibond & Lovibond, 1995) comprises 21 items consisting of 3 subscales each with 7 items, measuring depression, anxiety and stress symptoms respectively. Participants were asked to indicate the degree to which each statement applied to them in the last two weeks. The DASS-21 uses a 4-point rating scale (0 = did not apply to me at all to 3 = applied to me very much, or most of the time). The DASS-21 scale has good Cronbach's alpha coefficients for depression, anxiety and stress of 0.93, 0.88, and 0.82 respectively in a large sample (n=1, 794) in England (Henry & Crawford, 2005). It also has adequate convergent and discriminant validity with other measures of anxiety and depression (Brown, Chorpita, Korotitsch, & Barlow, 1997).

## 2.5 Data Analysis

An alpha level was set at .05 for all analyses conducted in this study. The statistical procedures were computed with the software IBM SPSS (version 26). Normality of scores were determined using the Shapiro–Wilk test and scale scores were identified to be skewed. The Pearson’s chi-square test was used to assess the association between two categorical variables, while the Cramer’s V index and the phi coefficient were used to quantify the strength of the association between the variables. The Wilcoxon signed-rank test was used to compare pre and post intervention scores, whilst the Mann Whitney ‘U’ test was computed to examine baseline scores between the intervention and control group. Intercorrelations using Spearman’s correlation coefficient were used to examine significant interrelationships between the subscales on the Maslach’s Burnout Inventory and the DASS-21 tool. A General linear model was conducted to examine several predictors of an outcome measure when predictors consisted of both categorical and continuous variables. A backward stepwise procedure was then used to identify the parsimonious models that includes solely the significant predictors.

## 2.6 Ethics

Ethical approval was granted by the relevant university research ethics committee. To avoid coercion, potential participants were approached by practice nurses (intermediaries) who provided information letters describing the nature of the study. Posters with details regarding the research were also placed on staff notice boards. Those nurses who were willing to participate in the study were invited to contact the research team. Participants were also provided with questionnaires to be filled in at pre and posttest. These questionnaires had the same code; however, the questionnaires were to be filled in anonymously. On completion of the questionnaires, participants were requested to place them in a box provided.

## 3. Results

### 3.1 Sample Characteristics

The demographic characteristics of study participants are presented in Table 1. Most of the participants were female (n=68, 56.7%) with a modal age group of 20-29 years (n=45, 37.5%). Most participants worked in an acute (n=44, 42.7%) or chronic (n=40, 38.8%) ward setting; had an undergraduate degree in nursing (n= 55, 45.8%) and had been working in a mental health setting for less than 10 years (n=89; 74.2%).

No statistically significant differences between participants in the intervention and control groups by sociodemographic and career related variables were identified (Table 1).

A Mann Whitney U test was conducted to determine whether there were significant differences on the MBI and DASS domains between the intervention and control group at baseline. No significant differences (p>.05) were detected between the intervention and control group on the burnout, depression, anxiety and stress subscales (Table 2).

Table 1. The sociodemographic and career attributes of participants

Participant characteristics		Sample size n (%)	Group 1 Experimental Group n=68	Group 2 Control Group n=52	Test statistic
Gender	Females	66 (55.0)	42	24	$\chi^2(1) = 2.9, p=.09$ Phi=.16
	Males	54 (45.0)	26	28	
Age groups (years)	20-29	45 (37.5)	24	21	$\chi^2(3) = 4.48, p=.21,$ Cramer’s V=.19
	30-39	16 (13.3)	12	4	
	40-49	27 (22.5)	12	15	
	50+	32 (26.7)	20	12	
Educational Level	Diploma	51 (42.5%)	23	28	$\chi^2(2) = .117, p=.94,$ Cramer’s V=.03
	Undergraduate degree i.e., B.Sc	55 (45.8%)	23	32	
	Postgraduate degree i.e., MSc, PhD	14(11.7%)	6	8	
Years of nursing experience	<10	33 (27.5%)	19	14	$\chi^2(2) = .069, p=.97,$ Cramer’s V=.02
	11-20	17 (14.1%)	10	7	
	21+	70 (58.4%)	39	31	
	>10	89 (74.2%)	50	39	

Years working in mental health setting	11-20	14 (11.6%)	6	8	$\chi^2(2) = 2.44, p = .29$ Cramer's V = .30
	21+	17 (14.2%)	12	5	
Clinical setting *	Acute	44 (42.7%)	27	17	$\chi^2(2) = .350, p = .84,$ Cramer's V = .06
	Chronic	40 (38.8%)	22	18	
	Community	19 (18.5%)	11	8	

[N.B:\* Variable 'Clinical setting' not all participants indicated their work setting]

Table 2. Mean ranks for the intervention and control group on the Maslach Burnout Inventory (MBI) and Depression, Anxiety, Stress Scale-21 (DASS-21) subscales at baseline (T1)

Subscale	Mean Rank Experimental Group (n=68)	Mean rank Control Group (n=52)	Mann Whitney U test	P value
<b>MBI</b>				
Personal Accomplishment	57.82	64.00	1586.00	.34
Depersonalisation	61.49	59.20	1700.50	.72
Emotional exhaustion	65.24	54.31	1446.00	.09
<b>DASS-21</b>				
Depression	64.03	55.88	1528.00	.20
Anxiety	62.35	58.09	1642.50	.50
Stress	65.66	53.75	1417.00	.06

Wilcoxon signed-rank tests were then conducted to identify any significant differences between scores at pre and post intervention for a related sample. Table 3 presents the median (Mdn), interquartile range (IQR), z scores and effect sizes (r) for each domain of the MBI and DASS-21 at pre-(T1) and post- test (T2), for both the intervention and control group. A significant improvement at T2 was identified for the intervention group in the following subscales namely: burnout- depersonalisation [pre-test (Mdn = 6.00), post-test (Mdn = 5.50),  $z = - 2.152, p = .03, r = .18$ ]; DASS-anxiety [pre-test (Mdn = 4.00), post-test (Mdn = 3.00),  $z = - 2.116, p = .03, r = .18$ ] and DASS-stress [pre-test (Mdn = 7.00), post-test (Mdn = 5.00),  $z = - 4.185, p < .001, r = .36$ ]. For the control group there were no significant changes in scores between pre and post- test on any of the domains.

Table 3. Comparison of scores between pre (T1) and post- test (T2) by experimental and control group

Tool and Subscales		Experimental group				Control group			
		Median (IQR)	Z score	P value	Effect size 'r'	Median (IQR)	Z score	P value	Effect Size 'r'
<b>MBI</b>									
Personal Accomplishment	T1	32.00 (12.50)	-0.62	.54	.05	36.00 (13.25)	-0.20	.84	.019
	T2	34.00 (13.00)				35.50 (11.75)			
Depersonalisation	T1	6.00 (7.75)	-2.15	.03	.18	5.50 (8.00)	-0.07	.94	.0007
	T2	5.50 (8.00)				5.50 (8.75)			
Emotional exhaustion	T1	20.50 (13.75)	-1.56	.12	.13	17.50 (14.75)	-0.78	.44	.007
	T2	19.00 (17.00)				17.50 (13.75)			
<b>DASS-21</b>									
Depression	T1	3.00 (6.75)	-0.97	.33	.08	3.00 (5.00)	-1.88	.06	.018
	T2	3.00 (7.00)				2.00 (3.75)			
Anxiety	T1	4.00	-2.12	.03	.18	3.00	-1.37	.17	.013

		(5.75)				(4.75)			
	T2	3.00 (5.00)				3.00 (5.00)			
Stress	T1	7.00 (6.00)	-4.19	<.001	.36	5.50 (4.75)	-1.70	.09	.016
	T2	5.00 (6.00)				5.50 (3.00)			

[N.B: P values listed in bold indicate significance]

Table 4 presents the intercorrelations between the various burnout subscales and those for stress, anxiety and depression. Higher depression scores were positively correlated with higher scores on two burnout scales: DP ( $\rho=.364$ ,  $p=.003$ ) and EE ( $\rho=.395$ ,  $p=.001$ ) and on the DASS subscales for stress ( $\rho=.695$ ,  $p<.001$ ) and anxiety ( $\rho=.635$ ,  $p<.001$ ). Whilst higher scores on PA were negatively correlated with depression ( $\rho=-.327$ ,  $p=.007$ ); DP ( $\rho=-.327$ ,  $p=.006$ ); anxiety ( $\rho=-.328$ ,  $p=.007$ ); and stress ( $\rho=-.286$ ,  $p=.020$ ). Scores for EE were positively correlated with DP ( $\rho=.619$ ,  $p<.0001$ ); stress ( $\rho=.364$ ,  $p=.003$ ); and anxiety ( $\rho=.316$ ,  $p=.01$ ). Higher scores for the burnout subscale DP is positively associated with EE ( $\rho=.619$ ,  $p<.001$ ) and stress ( $\rho=.251$ ,  $p=.042$ ). Stress is positively associated with anxiety ( $\rho=.72$ ,  $p<.001$ )

Table 4. Intercorrelations amongst the subscales for the MBI and the DASS-21

	MBI DP2	MBI PA2	MBI EE2	DASS Depression 2	DASS Anxiety 2	DASS Stress 2
MBI DP 2	---	-.327**	.619***	.364**	.203	.251*
MBI PA 2	-.327**	---	-.057	-.327**	-.328**	-.286*
MBI EE 2	.619***	-.057	---	.395***	.316**	.364**
DASS Depression 2	.364**	-.327**	.395***	---	.635***	.695***
DASS Anxiety 2	.203	-.328**	.316**	.635***	---	.720***
DASS Stress 2	.251*	-.286*	.364***	.695***	.720***	---

[N.B: \* $p \leq 0.05$ ; \*\* $p \leq 0.01$ ; \*\*\* $p \leq 0.001$ ]

A General linear regression was conducted to examine whether staff emotional adjustment response (i.e., stress, anxiety, depression), demographic and career related variables were predictors of post-test scores (T2) on the DP burnout domain. This outcome measure was selected as the intervention positively impacted this burnout domain. Those variables that were significantly correlated with the outcome measure (i.e., DP) and that were of high theoretical importance were included in the model.

The regression model (Table 5) demonstrates that stress, PA (burnout), gender and age-group were all significant predictors of DP (burnout). The 4-predictor model explained 30% of the total variation in the DP score. Assuming that other effects were kept constant, for every 1-unit increase in the stress score, the DP score was expected to increase by 0.321. Males were expected to score 1.679 points higher in DP than females. Whilst for every 1-unit increase in the PA score, the DP score was expected to decrease by 0.214 and individuals aged 31-40 years were expected to score 4.704 points higher in DP than their older counterparts aged over 50 years.

Table 5. General linear regression for the burnout domain -DP at T2

Parameter	B	Std. Error	t	P-value	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	9.300	2.133	4.361	0.000	5.074	13.526
DASS-stress T2	0.321	0.115	2.778	0.006	0.092	0.549

PA T2		-0.214	0.051	-4.197	0.000	-0.315	-0.113
Gender	Male	1.679	0.798	2.104	0.038	0.098	3.260
	Female	0	.	.	.	.	.
Age Group	20-30 years	1.514	1.008	1.502	0.136	-0.483	3.510
	31-40 years	4.704	1.318	3.569	0.001	2.092	7.315
	41-50 years	1.464	1.129	1.298	0.197	-0.772	3.701
	More than 50 years	0					

## 4. Discussion

### 4.1 Discussion of Key Findings

According to Lopez-Lopez et al. (2019) burnout is described as notably problematic among mental healthcare providers and hence the need for interventions that can target this issue. The current study contributes to the extant literature by exploring the impact of an intervention that included mindfulness and the supplemental introduction of sessions on critical and creative thinking skills, legal issues, documentation, and expressive arts. The session on mindfulness was included as it has been identified as efficacious in addressing the EE domain, whilst the supplementary components were carefully selected to match the perceived stressors of the study population.

In the present study, significant improvements in the DP component of burnout, stress and anxiety were identified following the intervention at T2. The critical and creative thinking skill component provided in the present intervention could have contributed to an improvement in DP as imaginative nurses were identified as less likely to develop negative, cynical attitudes, and feelings about their patients (Li et al., 2019).

The present study also highlights that being male, being aged between 31 to 40 years, having lower levels of PA and higher levels of stress were all significant predictors of DP. The gender differences associated with the different dimensions of burnout are accentuated by a growing body of evidence suggesting that males are more susceptible to high DP (Ortega et al., 2018). With regards to age, extant research suggests that nurses' DP is inversely associated with increased age (Xie et al., 2011) and this may arise as younger nurses are more prone to burnout since they exhibit greater professional activity, exploiting their strength and commitment excessively (Bartosiewicz & Januszewicz, 2019). Hence, it is possible that nurses aged between 31 to 40 years in the present study were more prone to higher scores on DP than their colleagues aged 50 years, due to heightened professional activity during those years.

The identification of stress as a predictor of DP concurs with findings from various research studies (De Clercq et al., 2020; Liu and Aunguroch, 2019; Lopez-Lopez et al., 2019). Although comparisons are hampered due to different scales being used in these studies to measure stress, one can also deduce that the relationship between stress and DP is so strong that it is effectively and consistently captured with different stress tools. De Clercq et al. (2020) propose that employees experiencing job related stress and anxiety leave less room for positive and caring behaviours to conserve valuable energy resources. Furthermore, the inclusion of legal issues in the intervention may also have contributed to target both stress and anxiety in participants. In fact, Morrissey and Higgins (2019), in their study on the legal apprehensions amongst mental health nurses, identified that these care providers worked in a perceived pervasive environment of legal anxiety and fear. They further recommended that stress and anxiety in care providers needed to be mitigated via thorough and regular training sessions on legal issues and in relation to the conscientious documentation of care.

The expressive arts component in the present intervention may also have contributed to the significant improvements in anxiety and stress. A systematic review examining the effectiveness of expressive arts interventions and psychosocial stress in health care workers, provided preliminary evidence for the effectiveness of expressive arts in targeting stress (Phillips., 2019). Moreover, more pronounced improvements were noted in those studies that included an additional psychoeducational component to the expressive arts component. The clinical and creative skills component provided may also have contributed to target stress as creativity in nursing care includes the acceptance of new ideas for patient care in such a way that the new methods are simple, useful, efficient, affordable, and safe and less conducive to stress (Cheraghi et al., 2021).

Although a positive correlation was identified in the present study between anxiety, stress and PA, the intervention resulted in no significant improvement for the burnout domain of PA. Dreison et al. (2018) outline that PA is the burnout component for which intervention effects are overall not significant in studies. This may arise as PA might be conceptualized as more of a consequence of burnout rather than a core component (Demerouti et al., 2003).

### 4.2 Implications and recommendations

This research provides meaningful ramifications for mental health nursing practice, education and research. Educational institutions need to inculcate the paramountcy of self-care and mindfulness more effectively for mental health nurses and to foster a creative mindset and a critical thinking ethos. The role of participation in the arts assists in the forging of deep relational bonds on the workplace and should also be acknowledged by managerial staff. Such initiatives require in concert regular, systemic efforts on the workplace. Organizations must support positive nursing self-care behaviours such as mindfulness, which improve emotional adaptation, and commit to unravel workload issues, conflict and other challenges. Mental health nurses would benefit from feeling better supported in making decisions to solve or adapt to challenging situations. For this to happen a culture where negative experiences are viewed as learning opportunities and exploited to generate growth is vital.

This research study also contributes to extant literature pertaining to burnout interventions for mental healthcare providers. The intervention components in this study were both grounded in the literature and selected in relation to the specific needs of the study population. Transparency in the reporting of sample descriptive data and specific details pertaining to the intervention were adhered to, thus enabling sound comparisons with other studies. The MBI was complemented with the DASS-21 to circumvent limitations originating from the use of a single measure and effect size computations were reported in the data analysis.

In relation to future burnout intervention studies, it is advised that interventions such as the one employed in this study, with a combination of components tailor-made for study populations and the organizations they serve are designed. These interventions would be best assessed by random sampling and an exploration of the effects of the intervention at different time points i.e., after one month, three months, and six months to provide a better insight into outcomes.

follow-up evaluation of outcome measures. Other types of quasi-experimental designs can also be applied in the future by using cut-off scores to select the participants of the experimental group and control group. There is also a need to ascertain by research whether refresher/booster sessions would be empowering to staff and whether positive results are extending beyond individual nurses and being reflected in improved quality of care.

A limitation of the current study relates to the research design. Random assignment of participants into the intervention and control group would have augmented the robustness of the results. Additionally, inferences about the sustainability over time of the improvements post intervention reported in this study cannot be made as the outcome measures were determined once shortly after the intervention i.e., at T2.

## 5. Conclusions

Burnout interventions comprising cognitive-behavioural components, critical and creative thinking skills and didactic components (such as documentation and legal issues) based on participants' needs remediate burnout more comprehensively and yield significant improvements in depersonalisation, anxiety and stress in nurses. There is a need to acknowledge and provide such sessions and their cost (monetary or otherwise) should be perceived as an investment. Participation in burnout remediating training sessions or intervention research needs to be actively encouraged and facilitated by managers.

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