



Burning out physical and emotional fatigue: Evaluating the effects of a programme aimed at reducing burnout amongst mental health nurses

Journal:	<i>International Journal of Mental Health Nursing</i>
Manuscript ID	Draft
Manuscript Type:	Original Article
Keywords:	Burnout, Prevention Programme, Quantitative research
Abstract:	<p>Burnout is a common problem among mental health nurses. High levels of burnout result in job dissatisfaction, rapid turnover of staff, physical and psychological discomfort, and a reduction in the quality of patient care. While there is an abundance of research relating to burnout per se, research regarding the impact of burnout prevention programmes is lacking. This study aimed to measure the effects of a burnout prevention programme on mental health nurses working in Saudi Arabia (SA). A quasi-experimental design was used to test the effectiveness of a two-day burnout prevention workshop. The sample consisted of an intervention group (n=154) and a control group (n=142). Data collected using the Maslach Burnout Inventory (MBI) measured the effects of the workshop at one, three and six month intervals after completion of the programme. Data were analysed using the latest version of SPSS. Means, standard deviations, frequencies and percentages were used to describe the sample and levels of burnout. A t-test, ANOVA, Multiple linear regression and chi squared were used to measure the effect of the workshop before and at the three time points after exposure. Findings indicate the program was effective with a significant reduction being reported one month after the intervention. However, although not returning to baseline scores, burnout scores had increased at six months. In conclusion, while the overall efficacy of the burnout reduction program is evident, mental health nurses would benefit from having opportunity to use some of the strategies on a regular basis.</p>

Abstract

Burnout is a common problem among mental health nurses. High levels of burnout result in job dissatisfaction, rapid turnover of staff, physical and psychological discomfort, and a reduction in the quality of patient care. While there is an abundance of research relating to burnout per se, research regarding the impact of burnout prevention programmes is lacking. This study aimed to measure the effects of a burnout prevention programme on mental health nurses working in Saudi Arabia (SA). A quasi-experimental design was used to test the effectiveness of a two-day burnout prevention workshop. The sample consisted of an intervention group (n=154) and a control group (n=142). Data collected using the Maslach Burnout Inventory (MBI) measured the effects of the workshop at one, three and six month intervals after completion of the programme. Data were analysed using the latest version of SPSS. Means, standard deviations, frequencies and percentages were used to describe the sample and levels of burnout. A t-test, ANOVA, Multiple linear regression and chi squared were used to measure the effect of the workshop before and at the three time points after exposure. Findings indicate the program was effective with a significant reduction being reported one month after the intervention. However, although not returning to baseline scores, burnout scores had increased at six months. In conclusion, while the overall efficacy of the burnout reduction program is evident, mental health nurses would benefit from having opportunity to use some of the strategies on a regular basis.

Keywords: Burnout, Prevention Programme, Quantitative Research,

Introduction

Globally there is a crisis in the recruitment and retention of mental health nurses, putting extra pressure on those who are left to deliver quality services (Redknap et al., 2015). International studies have associated high staff turnover, decreased work efficiency and poor quality of service delivery with burnout (Salyers et al., 2016; Yang et al., 2015). Burnout is a cross-cultural phenomenon and is considered a common problem among mental health professionals, with service providers reporting between 21% - 67% of staff experiencing burnout (Foster et al., 2019; Morse et al., 2012). In light of the current global nursing workforce crisis it is imperative to protect mental health nurses against burnout.

Background

Burnout and its implications for mental health professionals

Available literature indicates a prevalence rate of burnout being between 20-67% among mental health professionals (Morse et al., 2012). An examination of the prevalence rates of burnout in mental health professionals and mental health non-professionals, suggest high levels of burnout affect over 50% of mental health professionals at an early stage of their career (Volpe et al., 2014). The prevalence of burnout among mental health nurses has been linked to factors such as the nature of work and required level of relationship with service users (Edwards et al., 2017). The stress inherent in these factors can often unsettle nursing staff and prove detrimental to the quality of care they deliver (Woodhead et al., 2016). This is particularly pertinent when their ability to provide therapeutic intervention is compromised due to competing demands from the organisation and service users, and lack of resources (Kornhaber; 2016; Warne & McAndrew, 2008).

Mental health nursing requires an optimum level of therapeutic techniques including autonomy, empathy, and integrity (Madathil et al., 2014). Nurses need to integrate all these components into their practice to provide a high level quality of care. Autonomy is described as a key factor in decision making within health care systems, and can buffer negative consequences of burnout among health care professionals (Le Blanc et al., 2007). Having greater autonomy can increase job satisfaction resulting in higher levels of performance and better nursing care. Therefore, interventions aimed at enhancing autonomy among nurses are expected to improve personal performance, the quality of care being delivered and service user satisfaction (Myhren et al., 2013). This infers that interventions promoting professional autonomy (e.g. decision making, consultation and collaboration) will enable mental health nurses, who may be exposed to work related stress, to reduce their risk of burnout (Adriaenssens et al., 2015).

Definitions of Burnout

Burnout is described as a psychological symptom of stress, having a tri-dimensional set of symptoms; depersonalization (DP) and emotional exhaustion (EE), common in the work situation, and lack of personal accomplishment (PA), an inability to accomplish or complete tasks (Maslach & Jackson, 1981). Emotional exhaustion occurs in the intrapersonal domain and refers to feelings of being overextended and depleted of one's emotional and physical resources.

1
2
3 Depersonalization occurs in the interpersonal dimension of burnout, referring to a negative or
4 excessively detached response to various aspects of the job, while personal accomplishment
5 relates to the self-evaluation dimension of burnout. Emotional exhaustion is identified as being
6 of primary importance, as this often leads to the other dimensions of burnout (Maslachi et al.,
7 1996). Increased levels of burnout are likely to lead to job dissatisfaction, rapid turnover of staff,
8 physical and psychological discomfort, and ultimately to a reduction in the quality of patient care
9 (Khamisa et al., 2015). While there is an abundance of research relating to burnout per se, there
10 is a dearth of research regarding the impact of burnout prevention programmes on those
11 experiencing high levels of work related stress.
12
13
14
15
16
17
18
19
20
21
22

23 24 **Burnout and Job Satisfaction**

25
26
27 Research has shown that job satisfaction affects the productivity and performance of nurses
28 (Hayes et al., 2015; Lu et al., 2012). A high level of job satisfaction among nurses has been
29 associated positively with the intention to remain in employment, and negatively with increased
30 turnover rates (Hayes et al., 2015; Lu et al., 2012). However, work/family conflict, stress, and
31 burnout are also thought to be significantly impacted by high job demands experienced by nurses
32 (Cho, 2012). Those who experience job satisfaction have been found to influence the social,
33 psychological and physical wellbeing of nurses, and have shown a positive impact on
34 organisational outcomes, often resulting in a decrease in burnout levels among nursing
35 professionals (Kreitner, 2007).
36
37
38
39
40
41
42
43
44
45
46
47
48

49 **Burnout predictors**

50
51
52 Burnout is far more common among mental health workers compared to other professional group
53 (Iglesias et al., 2010; Spence et al., 2009). According to previous studies, burnout predictors
54 include: age, gender, marital status, income, level of education, years of experience, department
55 where they are working, shift pattern, number of patients assigned to a nurse, and position
56 (Aiken et al. 2003). Nurse burnout is associated with distinct personal and situational factors,
57 which impacts nurse turnover rates, nursing shortages, and ultimately the quality of care they are
58 able to provide.
59
60

Burnout Prevention programmes

Intervention programmes for reducing burnout can be directed towards individuals (i.e. nurses)
or organisations (i.e. hospitals) or a combination of both. Programmes directed at individuals

1
2
3 usually adopt a cognitive behavioural approach, with the aim of reducing burnout by enhancing
4 competencies, coping skills and social support. Programmes directed at the organisation tend to
5 focus on enhancing the work environment; procedures, supervision, and decreasing job demands
6
7 (Awa, et al., 2010). It is suggested that a combination of both programmes leads to better results
8
9 on burnout reduction (Awa, et al., 2010; Gunusen & Ustun, 2010). **Studies examining the effects**
10
11 **of burnout prevention programmes, have in the main shown** a decrease in the level of burnout or
12
13 in its EE, DP and PA subscales (Kravits, et al., 2010; Onan, et al., 2013; Salyers, et al., 2011).
14
15 For example, Salyers et al. (2011) found EE and DP were reduced among mental health
16
17 professionals after implementing a one-day workshop on burnout prevention. Further, Kravits et
18
19 al., (2010) found that a psycho-educational intervention programme to reduce stress and burnout
20
21 using self-care strategies for nurses was useful in reducing EE.
22
23
24
25
26
27
28

29 **In a Turkish study carried out with 35 (30 completing) oncology nurses** Onan et al. (2013)
30
31 evaluated the effect of new ways of coping on burnout subscales (EE, DP and PA) prior to,
32
33 immediately following and one month post-intervention of a burnout prevention programme.
34
35 **The study used a pre-test post-test, but there was no randomisation.** They found EE reduced
36
37 significantly following the burnout prevention programme, while no significant reduction was
38
39 found on the domains of DP and PA. However, the effects of the burnout programme on the EE
40
41 subscale, was not sustained at one month post-intervention. The authors did not provide a
42
43 rationale as to why the effect of the intervention was not sustained **and a much larger cohort**
44
45 **would be needed if findings were to be generalised.** Similarly, **in a previous Turkish study using**
46
47 **a randomised controlled trial involving 108 nurses,** Günüşen & Ustün (2010) found a significant
48
49 reduction in the EE scores of nurses immediately following a burnout reduction programme.
50
51 However, the EE dimension was not sustained at six-month follow-up, indicating an increase in
52
53 EE scores in both the experimental and control groups. **The authors cited** the short-term
54
55 effectiveness of person-directed interventions **may have been compromised by changes in the**
56
57 **host hospital as well as an inspection, which increased the stressors and the workload of the**
58
59 **participants in the intervention arm of the study.** In these two-studies, the effects of the
60
intervention were not sustained; most participants stated they need work-directed rather than
person-directed interventions to reduce stress and burnout.

The Saudi Context

1
2
3 While burnout is a problem for nurses working in Saudi Arabia, neither healthcare authorities
4 nor professionals have given much attention to the assessment and prevention of burnout
5 (AlSuliman & AlHablani, 2014; AlTurki et al., 2010; Sadat-Ali et al., 2005). The studies
6 undertaken by AlSuliman and AlHablani, (2014) and AlTurki et al. (2010) focused on burnout
7 among nurses per se, while Sadat-Ali et al. (2005) explored burnout among orthopaedic surgeons
8 and nurses. AlSuliman and AlHablani, (2014) examined burnout among military hospital nursing
9 staff in Saudi Arabia, and the risk factors associated with it. Findings revealed the overall
10 prevalence of burnout in the target group was high (75.9%). The study involved nurses working
11 on inpatient units and in out-patient clinics, with the former presenting a greater risk of having
12 burnout in comparison to those working in outpatient clinics. Sources of job stress cited as
13 contributing to burnout among nurses included; organisational climate and structure, the job
14 itself, achievement and family obligations, interpersonal relationships, and managerial roles such
15 as being temporarily in-charge of units. In a study undertaken by AlTurki et al. (2010) more than
16 70% of the nursing workforces were from migrant populations, and this was also thought to be a
17 source of stress. While this study was carried out within a general healthcare setting, it was
18 suggested that within the complexity of the psychiatric milieu it could be an important predictor
19 of burnout (AlTurki et al., 2010). In light of the findings from each of these studies and poor
20 recruitment and retention of mental health nurses in Saudi Arabia, 13 per 100,000 population
21 (Qureshi et al., 2013), strategies that can be used to reduce burnout among Saudi mental health
22 nurses need to be introduced and their effectiveness investigated.

23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50 Studies exploring burnout in the field of mental health nursing in Saudi Arabia are scarce. To
51 date there are no studies available measuring the level of burnout among mental health nurses
52 working in Saudi Arabia. Therefore, the aim of this study was to measure the level of burnout
53 among mental health nurses working in Saudi Arabia and evaluate the effectiveness of a burnout
54 prevention programme in reducing the levels of burnout.

55 56 57 58 59 60 **Research questions**

In light of the above the following research questions were generated:

What are the levels of burnout per se, and in the subscales of emotional exhaustion, depersonalization, and personal accomplishments, among mental health nurses in Saudi Arabia?

1
2
3 What is the effect of implementing a burnout prevention programme in reducing stress among
4 mental health nurses in Saudi Arabia at one, three and six months intervals after completing the
5 programme?
6
7
8
9

10 **Methodology**

11
12 A quasi-experimental study utilising a non-equivalent pre-test post-test design was employed to
13 assess the efficacy of a burnout prevention programme among mental health nurses. **Quasi-**
14 **experiments** are used to examine the causal impact of an intervention on a specific group
15 compared to a control group (Polit & Beck, 2008). With regard to experimental design, random
16 allocation of people to an experimental and control groups may be considered unethical, for
17 example, to prevent one group from engaging in healthy behaviour. When these problems are
18 present, as within this study, and a true experiment is not possible a quasi-experimental design is
19 employed (Beanland & Schneider, 1999). Moreover, matching nurse characteristics between
20 groups is also difficult, particularly in Saudi Arabia where the majority of nurses are expatriates
21 from many different countries and cultures. For this reason the best option appeared to be that of
22 a non-equivalent control group pre-test - post-test design.
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38

39 **The intervention programme**

40
41
42 Introducing a burnout prevention program was a novel experience to the Saudi mental health
43 care system. The programme was evidence based and predicated on universal prevention
44 strategies, but as differences in personal, cultural and organizational factors can influence
45 burnout experiences among nurses, it was important to develop a prevention programme that was
46 fit for purpose (Fortinash & Worret, 2014). Evidence within the literature highlighted a number
47 of ways of successfully dealing with undesirable stress. These included; music-making, social
48 support group, progressive muscle relaxation, deep breathing exercises and guided imagery. Of
49 these self-care activities breathing exercises, progressive muscle relaxation, communication and
50 social skill training and social support were all considered suitable. The programme was further
51 modified to address cultural variations, for example, use of Arabic language, (non-verbal
52 communication, conversational skills, and assertiveness), social skills (Saudi customs, etiquette,
53 cultures and traditions, gender issues, family values, and behavioural techniques). **The final**
54 **programme** included: Introduction to burnout: definition, signs, and possible causes;
55 Consequences of burn out on both nurses as individuals and institutions; Principles of burnout
56
57
58
59
60

1
2
3 prevention; Tips for creating space for relaxation; Self-care activities such as breathing exercises;
4
5 Stress reduction management; Progressive muscle relaxation; Social skill training and
6
7 developing social support; and Communication skills training.
8
9

10 The intervention was delivered over two days' (6 hours per day) with sessions taking place in a
11 private room at **Al Amal Complex for Mental Health in Riyadh**. A group leader was assigned to
12 each group and took responsibility for delivering the intervention programme. In total the
13 programme was delivered on six occasions, three groups running simultaneously. **The group**
14 **leaders (a total of three) were Masters Level prepared nurses who are experienced and licensed**
15 **in mental health nursing**. Each session was audio and video taped to ensure integrity of the
16 sessions. The group leaders maintained records and notes of the sessions and had to fill in a
17 progress report after each session. An expert in group therapy reviewed the sessions **to ensure no**
18 **deviations took place from what had been agreed regarding content and delivery of the**
19 **programme**. To maintain and ensure validity of the intervention, all session were conducted
20 within the same time frame, under the same conditions, and using the same materials. Prior to
21 starting, the three group leaders met to review all material and agree on the style, methods and
22 content that would be covered per session.
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40

41 **Recruitment and Data Collection Procedure**

42
43
44 Ethical approval was gained from the Research Innovation and Academic Engagement Ethical
45 Approval Panel at the University of XXX and from Al Amal Mental Health Complex in Riyadh
46 and Ar'ar.
47
48
49
50

51
52 **The research was conducted at the Al-Amal mental health complex. Two hospitals, one in**
53 **Riyadh and one in Ar'ar, were involved in the study and randomly assigned to being either the**
54 **intervention group or the control group; Riyadh serving as the former and Ar'ar, the latter. The**
55 **technique used to assign a hospital to either the intervention or the control group was for the**
56 **researcher to put two pieces of paper in two separate envelopes, on one piece of paper was written**
57 **intervention and on the other control. The sealed envelopes were given to an independent person**
58 **at one of the hospitals who choose an envelope, opened it and discovered which group that**
59 **hospital will be allocated to. The hospital complex where the intervention group took place**
60 **consists of around 12 wards providing a range of mental health services. The hospital complex**

1
2
3 where the control group took place consists of around 11 wards providing the same mental health
4
5 services.
6

7
8 Posters, providing information about the study and details of how to contact the researcher were
9
10 placed on nurses' notice boards within two hospitals. Potential participants were provided with
11
12 an invitation letter and information sheet detailing the study. Eligibility criteria for participating
13
14 included a minimum of two years' experience as a qualified nurse working in a mental health
15
16 setting. Those eligible and interested were asked to sign a consent form. All those agreeing to
17
18 participate were asked to complete a questionnaire about their demographic characteristics. All
19
20 participants were then asked to fill in the Maslach's Burnout Inventory (MBI); (Maslach et al.,
21
22 1996) which was used as a base line assessment of their level of burnout.
23
24
25

26
27 The MBI is a 22-item scale designed to measure three dimensions of burnout: Emotional
28
29 Exhaustion (EE) (9 items), Depersonalization (DP) (5 items), and Personal Accomplishment
30
31 (PA) (8 items) (Maslach, et al., 1996). Each item is scored on a seven-point Likert scale ranging
32
33 from 0 "never"-to-6 "everyday". Responses are totalled to obtain a separate score for each of the
34
35 three subscales, or the total score for the inventory. Scores in the upper third percentile are rated
36
37 as high, the middle third percentile as moderate and the lower third as low according to MBI
38
39 instrument and scoring guidelines (Maslach, et al., 1996). The Arabic MBI is known to have
40
41 good reliability and has been utilised in a number of Arabic-speaking countries, where studies
42
43 have been conducted to assess burnout levels among nurses (Hamaideh, 2011; Al-Turki et al,
44
45 2010)
46
47
48
49

50
51 The power calculation for this study was established on the assumption that the intervention and
52
53 control group were of similar size and participants had similar characteristics. According to the
54
55 standardized sample size table (Hinkle & Oliver, 1983) if .05 level is of significance,
56
57 standardized effect size = medium (.50), and power = .80, 84 subjects would be required for each
58
59 group, meeting the Central Limit Theorem (CLT) requirement. This means that at least 168
60
subjects had to be approached to participate in the study. However, estimating a 50%
participation rate, due to expected attrition and/or missing data, a larger sample would provide
greater power and reduce the likelihood of a Type 2 error. In light of this all nurses in Al-Amal
Complex for Mental Health, approximately 300, were invited to participate in the study.

1
2
3 The intervention group was comprised of 154 nurses based at **Al Amal** Mental Health Complex
4 in Riyadh and divided into seven groups, each group having between 20-25 nurses. During the
5 intervention, male nurses were separated from female colleagues in accordance with Saudi
6 custom and tradition. In the comparison group there were 145 nurses based at **Al Amal** Mental
7 Health Facility in Ar'ar. After completion of the sessions, all participants (intervention and
8 control group) were asked to complete the MBI at one, three and six months' post intervention to
9 determine the long term effects and whether positive changes after completion of the programme
10 could be sustained. **Both the control and intervention groups completed the MBI** at the same
11 time. Data collection started in May 2015, by the primary researcher and first author.
12
13
14
15
16
17
18
19
20
21
22
23

24 **Data analysis**

25
26
27 Descriptive statistics, such as central tendency measures, for example means and medians, and
28 dispersion measures (standard deviation, ranges), were used to present the demographic
29 characteristics of nurses in the intervention and control groups and to assess their levels of
30 burnout according to the following subscales: EE, DP, PA. Independent-samples t-test was
31 conducted to compare the burn out score at baseline between the nurses in the control and the
32 intervention group. Chi-square test for independence was used to test for differences of baseline
33 burnout scores between the intervention and control group in relation to their descriptive
34 characteristics. The Pearson product-moment correlation coefficient (r) was used to
35 independently investigate the relationships between the aforementioned demographic
36 characteristics and burnout subscales in each group. Repeated measures ANOVA was used to
37 investigate changes within the burnout constructs at four time points (before the intervention,
38 one, three and six months post intervention) of the three constructs (EE, DP, and PA). Effect
39 sizes were determined to assess the magnitude of results using standardized values (Cohen,
40 1988). All analyses were calculated using Statistical Package for Social Sciences (SPSS) version
41 22 with probability values set at .05 levels.
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Results

A total of 296 nurses were allocated to either the intervention (n=154) or control group (n=142). Of these, only 255 (intervention group, n=130; control group, n=125) completed the study, yielding a completion rate of 86%. Forty-one did not complete the study due to incomplete data or natural attrition (Figure 1)

1
2
3 Insert Figure 1 here
4
5

6 **Table 1:** Differences between burn out score at baseline between intervention and control
7 groups (insert Table 1 here)
8
9

10
11 There was no significant difference in any of subject characteristics at baseline. The gender,
12 marital status, level of education, ward in which they work, the duty shift, their position in the
13 work place or intention to leave were comparable in both control and intervention group
14 indicating these two groups had equivalence.
15
16
17
18
19
20
21
22
23

24 **Table 2:** The overall levels of burnout, and in the subscales of EE, DP, and PA among nurses in
25 the intervention and control group prior to the intervention. (Insert Table 2 here)
26
27
28
29

30 There was a significant increase in the EE score in the intervention group compared to the
31 control group ($P=0.0082$), but there was no significant difference in scores on the DP and PA
32 subscales between the two groups. The total burnout score was significantly higher for the
33 intervention group compared to the control ($P=0.0001$). At baseline, in the intervention group 78
34 (41.6%) of the nurses had moderate levels of burnout, with 76 (39.5%) having moderate levels of
35 burnout in the control group. Regarding mild levels of burnout, 38 (27.65%) demonstrated this in
36 the intervention group, with similar numbers in the control group, 34 (32.9%). Those affected by
37 high levels of burnout were 38 (30.65%) in the intervention group and 32 (27.6%) in control
38 group. Similarly, 82 (53.2%) of the nurses in the intervention group had moderate levels of DP,
39 compared to 86 (60.6%) in the control group; 37 (24%) had mild levels of DP, while in the
40 control group 29 (20.4%) showed mild levels of DP; and 35 (22.7%) in the intervention group
41 demonstrated high levels of DP, while this applied to 27 (19%) in the control group. The results
42 of the analysis also showed that more than half, 85 (52.2%) of the nurses in the intervention
43 group had moderate levels of PA, compared to 82 (57.7%) in the control group. In terms of low
44 levels of PA, 37 (37%) and 28 (19.7%) demonstrated this in the intervention and control groups
45 respectively, A small number, 32 (20.8%) had high levels of PA in the intervention group and 32
46 (22.5%) in the control group.
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Table 3: Descriptive statistics and standard deviation of mean emotional exhaustion score for the
nurses in the two groups (Insert Table 3 here)

1
2
3
4
5
6 An independent-samples t-test was conducted to compare the mean EE score at the four time
7
8 points for the nurses in the intervention and control groups. The results indicated a statistically
9
10 significant difference in mean EE scores at the four time points for the nurses in the intervention
11
12 and control group; $p \leq 0.001$
13
14
15

16 **Table 4:** Descriptive statistics and standard deviation of mean depersonalization score for the
17
18 nurses in the two groups (Insert Table 3 here)
19
20
21

22 An independent-samples t-test was conducted to compare the mean DP score at the four time
23
24 points for the nurses in the control and the intervention group. The results indicate statistically
25
26 significant differences in mean DP scores between the two groups following intervention;
27
28 comparisons having $p \leq 0.0001$.
29
30
31
32
33
34

35 **Table 5:** Descriptive statistics and standard deviation of mean personal accomplishment score
36
37 for the nurses in the two groups (Insert Table 3 here)
38
39
40

41 A t-test was conducted to compare the mean PA scores at the four time points for the nurses in
42
43 the control and intervention groups. Statistically there is a significant difference in the Personal
44
45 Accomplishment at each time point post intervention; all comparisons having $p \leq 0.001$.
46
47
48

49 Regarding the second research question: What is the effect of implementing a burnout prevention
50
51 program on mental health nurses in Saudi Arabia immediately after attending the program and at
52
53 one, three and six months follow-up?
54
55

56 **Table 6:** Descriptive statistics and standard deviation of mean total burnout score of the nurses
57
58 in the two groups (Insert Table 3 here)
59
60

The intervention group started with a higher level of total burnout than the control group.
However, between pre-test and post-test 1 there was a marked decrease in the total burnout score
for the intervention group, whereas there was an increase in total burnout score for the control
group. Between post-test 1 (one month) and post-test 3 (six months) there was an increase in
scores for both the control and the intervention group, however the intervention score still

1
2
3 remained lower than their baseline and the control group scores, the latter having a higher score
4
5 at post-test 3 than at the baseline.
6

7 8 **Discussion** 9

10
11 There are only three previous studies investigating burnout among nurses in Saudi Arabia
12 (AlSuliman & AlHablani, 2014; AlTurki et al., 2010; Sadat-Ali), none of which have examined
13 burnout among mental health nurses. However, these three studies have initially been used to
14 compare the results from this study. When comparing the results in Table 1, the combined
15 statistics for the two groups revealed mental health nurses working in Saudi Arabia and
16 participating in this study showed 33.21% had high EE scores; 41.7% had high DP scores; and
17 56.7% had a low PA score. These results, particularly for the EE score and low PA score are
18 similar to those of Sadat-Ali et al. (2005). However, Sadat-Ali et al.'s (2005) study was
19 conducted using only 69 participants so it is difficult to ascertain whether the results would
20 remain consistent for a larger number of nurses. AlTurki et al. (2010) having a sample of 198
21 general nurses, found that 45% had a high EE score; 42% a high DP score; and 71.5% a low PA
22 score, suggesting a large increase within each score category within the 5-year span between the
23 two studies perhaps indicating burnout amongst nurses was rising. More recently, AlSuliman and
24 AlHablani (2014) reported only 10.8% of nurses were found to have a high EE score, 68% a high
25 DP score and 5.1% a low PA score. In the four intervening years between the publication of this
26 and Al-Turki et al.'s (2010) study the EE scores appear to have reduced. This may be accounted
27 for by adaptation to the changes within the healthcare system initiated in Saudi Arabia in 2007.
28 However, the DP score had risen and the PA score reduced, suggesting anxiety among general
29 nurses remains high and this may compromise self-confidence and subsequently personal
30 accomplishment. However, all of these studies only examined burnout among general nurses
31 and not mental health nurses making a true comparison difficult. Overall, this study found that
32 most subjects in the intervention and control groups had moderate levels of EE and DP, and low
33 levels of PA at baseline assessment, with differences between the two groups not being
34 significant. Furthermore, the results from this study infer, prior to exposure to the burnout
35 prevention programme, that all subscales of the MBI showed evidence of mental health nurses'
36 experiencing burnout with varying levels of severity.
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 Preventing and reducing work related burnout is of great importance, not only with regard to the
4 quality of life of nurses affected, but also for preventing the economic losses which come about
5 as a result of absenteeism and turnover of staff (Awa et al., 2010). The intervention programme
6 carried out in this study was helpful in reducing burnout and lead to positive effects on those
7 who had moderate and high levels of burnout. The intervention programme was a person-centred
8 intervention rather than an organisation directed intervention and it has been suggested that
9 approximately 82% of all person-centred interventions lead to a significant reduction in burnout,
10 or positive changes in its risk factors (Awa et al, 2010). The results also highlighted short term
11 positive intervention effects on burnout among mental health nurses, over a six month period,
12 with nurses showing improvements in burnout on all three subscales of the MBI. The results
13 indicate positive outcomes can be achieved when strategies to change perceptions and coping
14 styles, are tailored to individuals.

15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
There is increasing interest in stress and burnout reduction and prevention programmes that are geared toward enhancing the clinical milieu of nurses working in stressful environments (Gómez-Urquiza et al., 2017). In general, stress and burnout are considered among the most influential factors that impact clinical performance among health professionals, in particular nurses in mental health care settings (Edwards et al, 2017). Mental health nurses face numerous challenges, such as increased service user acuity, decreased length of hospital stay, and changing service user expectations, all of which may burden nurses and negatively affect the quality of care they deliver (Cleary & Freeman, 2005). Given the global shortage in the mental health nursing workforce, mental health nurses are challenged in trying to provide high quality nursing care in a demanding, and often stressful working environment (Redknap et al., 2015; Salyers et al., 2016).

In this study, a burnout reduction and prevention programme that was aimed at lowering the level of burnout among nurses working in mental health settings in Saudi Arabia was adapted for the cultural setting. The focus of the programme was on promoting personal coping strategies and developing skills that would lead to improved confidence and competency. However, the effect of the intervention at three and sixth month follow-up showed an increase in EE and DP and a decrease in PA. The results firstly indicate that the intervention was effective in managing burnout per se on all three subscales among mental health nurses, and remained so at one-month post intervention. Secondly, and without any sustaining or booster interventions, at three and six

1
2
3 months the intervention remained effective with scores still showing improvement when
4 compared to those at baseline. In conclusion, the intervention was most effective in the short-
5 term and retained its effectiveness over a prolonged period. The results of this study support the
6
7
8
9
10
11 few previous international studies regarding the positive effects of intervention programmes in
12
13 reducing burnout among mental health nurses (Stier-Jarmer et al., 2016; Günüşen & Ustün,
14
15 2010; Kravits, et al., 2010; Onan, et al., 2013; Salyers, et al., 2011). Although the positive effects
16
17 of the intervention are acknowledged, implementing the programme in a Saudi health care
18
19 setting did require assumptions to be made, namely that the principles of such interventions are
20
21 effective across cultures and variations in health care delivery systems. **While the growing**
22
23 **number of studies regarding the effectiveness of burnout prevention programmes have**
24
25 **international applicability, the findings of this and other studies carried out in predominately**
26
27 **Muslin countries (Günüşen & Ustün, 2010; Onan, et al., 2013) would suggest such programmes**
28
29 **are applicable to Middle Eastern countries.**

30
31
32
33
34 **However,** based on available literature, studies investigating the effects of burnout reduction
35
36 programmes in the long-term were limited, **with only** Günüşen & Ustün (2010) **and** Stier-Jarmer
37
38 et al. (2016) evaluating the effects on the three burnout scales at baseline, post-intervention and
39
40 six months follow-up, but both studies only focusing on **EE** and other stress inducing parameters.
41
42 This study adds to the limited body of knowledge regarding the positive effects of a burnout
43
44 prevention programme, especially with regard to demonstrating its sustained effectiveness at six
45
46 months post intervention on all three subscales. While this study used four time points, and in
47
48 doing so was able to establish that the effects of the programme delivered was sustained over a
49
50 longer period of time, regardless of a decline in scores at three and six months, this reduction in
51
52 effectiveness raises important questions as to how the initial improvement might be better
53
54 sustained. For example, **further research regarding** the effects of booster sessions of the
55
56 intervention being used intermittently during a nurse's career **would be useful to explore.**

CONCLUSION

Burnout in mental health clinical settings is a global problem effecting service delivery, the quality of service user care, and the effective functioning of healthcare organisations. Given the global evidence of burnout among mental health nurses, it would seem appropriate that such

1
2
3 problems are carefully monitored and interventions introduced that will enable nurses to be
4 better equipped to deal with emotionality inherent in everyday mental health nursing practice. In
5 addition, sponsors or policy-makers should understand the fundamental problems of burnout; its
6 causes, predictors and strategies that can be employed to promote emotional and psychological
7 resilience and enhance high-quality compassionate care. In this study, the major impact of the
8 burnout programme was seen one month following intervention. Although significant effects of
9 the intervention were not evident in the long-term, the results of the burnout prevention
10 programme among mental health nurses must be viewed positively, as in the short term there was
11 a significant improvement on all three subscales of the MBI and in the longer term (six months)
12 results remained an improvement on those at baseline. This offers a unique perspective that may
13 further provide a strong base for future research studies exploring and implementing burnout
14 reduction or prevention programmes in healthcare settings, and perhaps more importantly,
15 develop and evaluate programmes and/or strategies for continued support that could bolster
16 coping mechanisms to alleviate work related stress.

36 **Relevance for clinical practice**

37
38 While mental health nurses may be aware of burnout, there is often a disparity between knowing
39 about it and taking action to address it. All nurses have a responsibility to ensure they are fit for
40 practice and this includes taking care of self to ensure they are in a position to deliver quality
41 care to those in need of their help. While a top down approach would ensure time and resources
42 are available for burnout prevention programmes, the nurses themselves need to seize such
43 opportunities and fully participate in such programmes to enable their needs to be met. In
44 introducing such programmes, organisations, practice managers and/or educationalists need to
45 ensure they will be meaningful and accessible to the individual. In addition, thought needs to be
46 given to how the positive effects of such programmes can be sustained through developing
47 booster and/or support sessions to counteract or buffer unpleasant experiences and recurring
48 signs and symptoms of burnout among mental health nurses. Repetitive interventions, with
49 consistent support from the facilitators, may prevent high dropout rates, reduce burnout, and
50 enhance the long-term health outcomes for mental health nurses and those they provide care for.
51
52
53
54
55
56
57
58
59
60

References

- Adriaenssens, J., De Gucht, V., & Maes, S. (2015). Determinants and prevalence of burnout in emergency nurses: a systematic review of 25 years of research. *International journal of nursing studies*, 52(2), 649-661.
- Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *Jama*, 288(16), 1987-1993.
- AlSuliman, B. K., & AlHablani, M. N. (2014). Burnout among nurses in Tabuk military hospital. *International Journal of Medical Science and Public Health*, 3(5), 540-545.
- Al-Turki, H. A., Al-Turki, R. A., Al-Dardas, H. A., Al-Gazal, M. R., Al-Maghrabi, G. H., Al-Enizi, N. H., & Ghareeb, B. A. (2010). Burnout syndrome among multinational nurses working in Saudi Arabia. *Annals of African Medicine*, 9(4).
- Awa, W. L., Plaumann, M., & Walter, U. (2010). Burnout prevention: A review of intervention programs. *Patient education and counseling*, 78(2), 184-190.
- Beanland C, Schneider Z et al 1999 *Nursing research: methods, critical appraisal and utilisation*. Mosby, Sydney
- Cleary, M., & Freeman, A. (2005). The cultural realities of clinical supervision in an acute inpatient mental health setting. *Issues in Mental Health Nursing*, 26(5), 489-505.
- Cho, S. H., Lee, J. Y., Mark, B. A., & Yun, S. C. (2012). Turnover of new graduate nurses in their first job using survival analysis. *Journal of Nursing Scholarship*, 44(1), 63-70.
- Cohen J. (1988) *Statistical power analysis for the behavioural sciences*. Second edition, Hillsdale, NJ: Lawrence Erlbaum Associates
- Edward, K. L., Hercelinskyj, G., & Giandinoto, J. A. (2017). Emotional labour in mental health nursing: An integrative systematic review. *International journal of mental health nursing*, 26(3), 215-225.
- Fortinash, K. M., & Worret, P. A. H. (2014). *Psychiatric Mental Health Nursing-E-Book*. Elsevier Health Sciences.
- Foster, K., Shochet, I., Wurfl, A., Roche, M., Maybery, D., Shakespeare-Finch, J., & Furness, T. (2018). On PAR: A feasibility study of the Promoting Adult Resilience programme with mental health nurses. *International journal of mental health nursing*, 27(5), 1470-1480.

1
2
3 Gómez-Urquiza, J. L., Vargas, C., De la Fuente, E. I., Fernández-Castillo, R., & Cañadas-De la
4 Fuente, G. A. (2017). Age as a risk factor for burnout syndrome in nursing professionals: a
5 meta-analytic study. *Research in nursing & health*, 40(2), 99-110.

6
7
8
9
10 Günüşen, N. P., & Üstün, B. (2010). An RCT of coping and support groups to reduce burnout
11 among nurses. *International nursing review*, 57(4), 485-492.

12
13
14
15
16 Hamaideh, S. H. (2011). Burnout, social support, and job satisfaction among Jordanian mental
17 health nurses. *Issues in Mental Health Nursing*, 32(4), 234-242.

18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

Hayes, B., Douglas, C., & Bonner, A. (2015). Work environment, job satisfaction, stress and
burnout among haemodialysis nurses. *Journal of nursing management*, 23(5), 588-598.

Hinkle, D. E., & Oliver, J. D. (1983). How large should the sample be? A question with no
simple answer? or... *Educational and Psychological Measurement*, 43(4), 1051-1060.

Kornhaber, R., Walsh, K., Duff, J., & Walker, K. (2016). Enhancing adult therapeutic
interpersonal relationships in the acute health care setting: an integrative review. *Journal of
multidisciplinary healthcare*, 9, 537.

Lu, H., Barriball, K. L., Zhang, X., & While, A. E. (2012). Job satisfaction among hospital
nurses revisited: a systematic review. *International journal of nursing studies*, 49(8), 1017-1038.

Iglesias, M., Vallejo, R., & Fuentes, P. (2010). Reflections on the burnout syndrome and its
impact on health care providers. *Annals of African medicine*, 9(4), 197.

Khamisa, N., Peltzer, K., Ilic, D., & Oldenburg, B. (2017). Effect of personal and work stress on
burnout, job satisfaction and general health of hospital nurses in South Africa. *health sa
gesondheid*, 22(1), 252-258.

Kravits, K., McAllister-Black, R., Grant, M., & Kirk, C. (2010). Self-care strategies for nurses:
A psycho-educational intervention for stress reduction and the prevention of burnout. *Applied
Nursing Research*, 23(3), 130-138.

Kreitner, R., & Kinicki, A. (1992). *Organizational Behavior*, Richard D. Irwin, Homewood, IL.

Le Blanc, P. M., Hox, J. J., Schaufeli, W. B., Taris, T. W., & Peeters, M. C. (2007). Take care!
The evaluation of a team-based burnout intervention program for oncology care providers.
Journal of applied psychology, 92(1), 213.

1
2
3 Madathil, R., Heck, N. C., & Schuldberg, D. (2014). Burnout in psychiatric nursing: examining
4 the interplay of autonomy, leadership style, and depressive symptoms. *Archives of psychiatric*
5
6 *nursing*, 28(3), 160-166.

7
8
9
10 Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of*
11
12 *organizational behavior*, 2(2), 99-113.

13
14
15 Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach burnout inventory manual* (Vol. 4).
16
17 Palo Alto, CA: Consulting psychologists press.

18
19
20
21 Morse, G., Salyers, M. P., Rollins, A. L., Monroe-DeVita, M., & Pfahler, C. (2012). Burnout in
22
23 mental health services: A review of the problem and its remediation. *Administration and Policy*
24
25 *in Mental Health and Mental Health Services Research*, 39(5), 341-352.

26
27
28
29 Mudallal, R. H., Othman, W. A. M., & Al Hassan, N. F. (2017). Nurses' burnout: the influence
30
31 of leader empowering behaviors, work conditions, and demographic traits. *INQUIRY: The*
32
33 *Journal of Health Care Organization, Provision, and Financing*, 54, 0046958017724944.

34
35
36 Myhren, H., Ekeberg, Ø., & Stokland, O. (2013). Job satisfaction and burnout among intensive
37
38 care unit nurses and physicians. *Critical care research and practice*, 2013.

39
40
41 Onan, N., Isil, O., & Barlas, G. Ü. (2013). The effect of a new coping intervention on stress and
42
43 burnout in Turkish oncology nurses. *Clinical and Experimental Health Sciences*, 3(3), 121.

44
45
46 Polit, D. F., & Beck, C. T. (2008). *Nursing research: Generating and assessing evidence for*
47
48 *nursing practice*. Lippincott Williams & Wilkins.

49
50
51 Qureshi, N. A., Al-Habeeb, A. A., & Koenig, H. G. (2013). Mental health system in Saudi
52
53 Arabia: an overview. *Neuropsychiatric disease and treatment*, 9, 1121.

54
55 Redknap, R., Twigg, D., Rock, D., & Towell, A. (2015). Nursing practice environment: A
56
57 strategy for mental health nurse retention?. *International journal of mental health nursing*, 24(3),
58 262-271.

59
60 Sadat-Ali, M., Al-Habdan, I. M., Al-Dakheel, D. A., & Shriyan, D. (2005). Are orthopedic
surgeons prone to burnout?. *Saudi medical journal*, 26(8), 1180-1182.

Salyers, M. P., Hudson, C., Morse, G., Rollins, A. L., Monroe-DeVita, M., Wilson, C., &
Freeland, L. (2011). BREATHE: A pilot study of a one-day retreat to reduce burnout among
mental health professionals. *Psychiatric Services*, 62(2), 214-217.

1
2
3 Spence Laschinger, H. K., Leiter, M., Day, A., & Gilin, D. (2009). Workplace empowerment,
4 incivility, and burnout: Impact on staff nurse recruitment and retention outcomes. *Journal of*
5 *nursing management*, 17(3), 302-311.
6
7

8
9
10 Stier-Jarmer, M., Frisch, D., Oberhauser, C., Berberich, G., & Schuh, A. (2016). The
11 Effectiveness of a Stress Reduction and Burnout Prevention Program: A Randomized Controlled
12 Trial of an Outpatient Intervention in a Health Resort Setting. *Deutsches Ärzteblatt International*,
13 113(46), 781.
14
15

16
17
18 Volpe, U., Luciano, M., Palumbo, C., Sampogna, G., Del Vecchio, V., & Fiorillo, A. (2014).
19 Risk of burnout among early career mental health professionals. *Journal of psychiatric and*
20 *mental health nursing*, 21(9), 774-781.
21
22

23
24
25 Warne, T., & McAndrew, S. (2008). Painting the landscape of emotionality: colouring in the
26 emotional gaps between the theory and practice of mental health nursing. *International Journal*
27 *of Mental Health Nursing*, 17(2), 108-115.
28
29

30
31
32 Woodhead, E. L., Northrop, L., & Edelstein, B. (2016). Stress, social support, and burnout
33 among long-term care nursing staff. *Journal of Applied Gerontology*, 35(1), 84-105.
34
35

36
37
38 Yang, Y., Liu, Y. H., Liu, J. Y., & Zhang, H. F. (2015). The impact of work support and
39 organizational career growth on nurse turnover intention in China. *International Journal of*
40 *Nursing Sciences*, 2(2), 134-139.
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

For Review Only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

For Review Only

Table 1: Differences between burn out score at baseline between intervention and control groups

Subject characteristic		Intervention group (n = 154)	Control group (n = 142)	Chi square	
				Test Statistics	p-value
Gender	Female	75	67	0.02096	0.8849
	Male	79	75		
Marital status	Single	53	42	0.79	0.39
	Married	101	100		
Educational level	Diploma	146	129	3.79	0.15
	Bachelor's	8	13		
Ward	emergency	29	26	1.189	0.7556
	chronic	27	32		
	psychiatric	66	56		
	addiction	32	28		
Duty shift	A	14	18	3.703	0.2953
	B	11	15		
	C	1	3		
	Rotating	128	106		
Position	Administrator	11	13	0.1768	0.6741
	Nurses	143	129		
Intention to Leave	Yes	51	49	0.06	0.81
	No	103	93		
Duty shift A, morning; duty shift B, afternoon; duty shift C, night.					

Table 2: The overall levels of burnout, and in the subscales of EE, DP, and PA among nurses in the intervention and control group prior to the intervention.

Variables	Groups	N	Mean±SD	P Value
Emotional exhaustion	Control	142	31.63±11.05	0.0082
	Intervention	154	34.79±9.37	
Depersonalization	Control	142	12.93±5.5	0.2053
	Intervention	154	14.23±11.0	
Personal accomplishments	Control	142	21.72±9.62	0.7919
	Intervention	154	22.12±15.5	
Total burnout	Control	142	66.82±11.6	0.0001
	Intervention	154	71.14±9.85	

Table 3: Descriptive statistics and standard deviation of mean emotional exhaustion score for the nurses in the two groups

Emotional Exhaustion	Groups	N	Mean±SD	P Value
Emotional exhaustion pre intervention	Intervention	154	34.79±9.37	0.0082
	Control	142	31.63±11.05	
Score 1 month post intervention	Intervention	144	15.52±7.64	<0.0001
	Control	133	33.85±10.08	
Score 3 months post intervention	Intervention	136	23.81±11.59	<0.0001
	Control	128	35.43±11.33	
Score 6 months post intervention	Intervention	130	25.45±10.53	<0.0001
	Control	125	35.33±6.35	

Table 4: Descriptive statistics and standard deviation of mean depersonalization score for the nurses in the two groups

Depolarization	Groups	N	Mean±SD	P Value
Pre intervention	Intervention	154	14.23±6.16	0.0681
	Control	142	12.93±5.51	
1 month post intervention	Intervention	144	6.42±4.25	<0.0001
	Control	133	13.76±5.48	
3 months post intervention	Intervention	136	9.23±8.24	<0.0001
	Control	128	12.71±6.12	
6 months post intervention	Intervention	130	10.02±7.27	<0.0001
	Control	125	13.82±5.45	

Table 5: Descriptive statistics and standard deviation of mean personal accomplishment score for the nurses in the two groups

Personal Accomplishment	Groups	N	Mean±SD	P Value
Pre intervention	Intervention	154	22.12±11.93	0.7523
	Control	142	21.72±9.62	
1 month post intervention	Intervention	144	41.22±4.77	<0.0001
	Control	143	20.32±9.35	
3 months post intervention	Intervention	136	36.85±8.03	<0.0001
	Control	128	20.62±7.49	
6 months post intervention	Intervention	130	35.31±7.50	<0.0001
	Control	125	20.84±8.07	

Table 6 Descriptive statistics and standard deviation of mean total burnout score of the nurses in the two groups

	Groups	N	Mean±SD	P Value
Total burnout 0	Control	142	66.28±11.36	0.0003
	Intervention	154	71.13±11.18	
Total burnout 1	Control	133	67.93±11.32	0.0002
	Intervention	144	63.15±9.85	
Total burnout 3	Control	128	68.74±14.43	0.0709
	Intervention	136	64.88±19.59	
Total burnout 6	Control	125	69.99±11.48	0.0380
	Intervention	130	66.15±17.23	

Figure 1. Flow chart showing number of nurses in each group.

