

An-Najah National University

Faculty of Graduate Studies

**Critical Care Nurses Burn Out:
Sociodemographic Factors, Leveling and
Mitigation in Palestinian Governmental
Hospitals**

By

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**This Thesis is Submitted in Partial Fulfilment of the Requirements for
the Degree of Master of Critical Care Nursing, Faculty of Graduate
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2021

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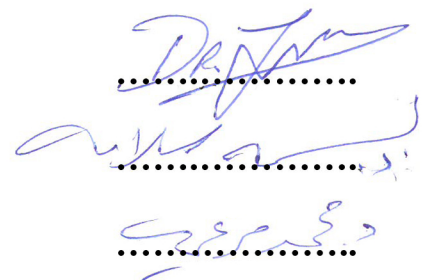
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Signatures



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Dedication

To My Parents

Acknowledgment

Praise to God before and after, the owner of credit and success on the way, this thesis is registered on my name and not one else, but in fact, it was done in a combination of the dedicated work of others, today, it is my turn to thank them all.

I would like to express my endless unqualified thanks for my mentor to this achievement Dr. Jamal Qaddumi, for his patience, continuous support, understanding of all the problems faced me, smiles all the time, was really a great opportunity to have such a guide.

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To my life partner and an assistant in success, husband Saleh Alyat, Lots of thanks.

Letters are not enough to thank my father, the first teacher and the powerhouse of my life. My mother, who stood with me in my studies as she does in all the steps of my life as a sister, a mother, a teacher and ideal model, my supportive armor and impregnable fortress, my brothers and sisters, Wafaa, Saleh, Khalil, Fatima, sincere gratitude and love to you all.

الإقرار

أنا الموقع أدناه مقدم الرسالة التي تحمل عنوان

Critical Care Nurses Burn Out: Sociodemographic Factors, Leveling and Mitigation in Palestinian Governmental Hospitals

أقر بأن ما اشتملت عليه هذه الرسالة إنما هي نتاج جهدي الخاص، باستثناء ما تم الإشارة إليه حيثما ورد، وأن هذه الرسالة ككل أو أي جزء منها لم يقدم لينال أي درجة أو لقب علمي أو بحثي لدى أي مؤسسة تعليمية أو بحثية أخرى.

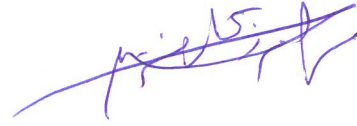
Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work and has not been submitted elsewhere for any other degree or qualification.

Students Name:

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Signature:

التوقيع: 

Date:

التاريخ: 2021/9/1

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Critical Care Nurses Burn Out: Sociodemographic Factors, Leveling and Mitigation in Palestinian Governmental Hospitals

By

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Abstract

Aims: Continuous nurses working under stressful situations with critically ill patients decrease their ability to cope with stress, and increase job turnover which expose them to burnout syndrome. So our study aimed to measure the level of critical care nurse's burnout, verify and find the relationship between sociodemographic risk factors and burnout syndrome, and the effect of break on burnout level among critical care nurses in Palestinian governmental hospitals.

Method: Quasi experimental study utilizing a self-report questionnaire, was used to collect data from the critical care nurses in Palestinian governmental hospitals, burnout was measured using Maslach Burnout Inventory- Human Services Survey (MBI-HSS) questionnaire, distributed pretest for both control and intervention groups, intervention was a 20 minutes outdoor break at each shift for 6 weeks, then questionnaire redistributed again posttest for both groups.

Result: Result showed total of 110 critical care nurses filled the questionnaire, critical care nurses, of Palestinian governmental hospitals, complained of moderate to high level of emotional exhaustion and depersonalization, while medium to high level of decreased personal

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achievement. There was a significant difference between burnout and gender and shift rotation also, while there is no significant difference with other sociodemographic factors. There is a significant difference between break and intervention group posttest.

Discussion: This study demonstrates that most of the Palestinian critical care nurses complaining of moderate to high level of burnout. Burnout syndrome affected by some sociodemographic factors such as gender where female had higher level of burnout, and for shift rotation nurses who worked in rotated shifts had higher level of burnout than fixed shifts, and A shift burnout higher than B&C shifts, also outdoor break can mitigate level of nurses burnout.

Chapter One

Introduction

Chapter one

Introduction

1.1 Introduction:

Continuous nurses working under stressful situations with critically ill patients- that needed huge amount of care and concentration- may decrease their ability to cope with stress, lead to higher ratios of job turnover, decrease their quality of care and expose them to emotional exhaustion, depersonalization and low personal accomplishment which all together called burn out syndrome (BOS). BOS is a phenomenon increasingly common, which is defined by the WHO as "Burn-out is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions: feelings of energy depletion or exhaustion; increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; and reduced professional efficacy" [1].

The risk of burnout can be determined by using self-test questionnaires called Maslach Burnout Inventory (MBI) questionnaires, which is most frequently used and accepted by the researchers for burnout in many jobs, "there are numerous psychometric studies that support this type of evaluation and modalization of this syndrome [2].

The mitigation of burnout syndrome can be achieved by identifying the sociodemographic variables related to its development. Which are age, gender, marital status and having children [3].

Working for long hours of stressful situations, especially in critical care units which need high concentration and patience, predispose critical care nurse body & mind to pay the price, from this point it is crucial to break the consequence of long hours of work and long standing with stress by something that brings nurses out of this situation to release the body and brain of all that stress and work. This can be achieved by taking daily work breaks, especially outdoors more than indoors can mitigate stress and burnout syndrome [4].

Even little bit of nature have the ability to change humans mood and can help you get out of your sadness, stress and depression. For this reason, nurses are advised to take outdoor breaks more than indoors to get out of stressful work environment, which in turns can mitigate burnout syndrome symptoms [4].

1.2 Research problem and significance:

There are several consequences of burnout on critical care nurses, their patients, team morale & whole works environment. Decreased patient satisfaction, insufficient patient cares & increased infection rates all these consequences on patients, on the other side the critical care nurses have depression, increased medical errors, poor health, and decreased cognitive function, absenteeism, substance abuse and decreased professionalism [4].

For this importance and danger of burnout consequences, it is crucial to understand the magnitude of the problem and risk factors to find effective methods to prevent and mitigate burnout.

So while searching I found many researches from various countries about this syndrome but none in Palestine; so I decided to study the problem in our governmental hospitals.

1.3 Research aims/ objectives:

- 1- To verify the sociodemographic risk factors of burn out syndrome among critical care nurses in Palestinian governmental hospitals.
- 2- To find the relationship between sociodemographic variables and burnout syndrome among critical care nurses in Palestinian governmental hospitals.

1.4 Research questions:

- 1- What are the sociodemographic risk factors of burn out syndrome among critical care
- 2- What is the effect of break on burnout among critical care nurses in Palestinian governmental hospitals?

1.5 Research hypothesizes:

- 1- Most of the critical care nurses have burn out syndrome in Palestinian governmental hospitals.
- 2- Outdoor breaks will mitigate burn out syndrome among critical care nurses in Palestinian governmental hospitals.

1.6 Conceptual framework and Variables Definition

1.6.1 Variables Definition:

Conceptual definitions:

Sociodemographic variables: the social and demographic variables of critical care nurse which consist of gender, age, marital status and having children

Gender: the sex of critical care nurses to wither male or female.

Age: number of years old of the critical care nurses in governmental hospitals.

Marital status: a critical care nurse status which might be single, engaged, married or divorced.

Having children: number of children that critical care nurses has.

Operational definitions:

Gender: the participant chooses if male or female.

Age: the participant chooses from four choices, which are 21-30 years, 31-40 years, 41-50 years or above 50 years.

Marital status: the critical care nurse chooses from four choices which are; single, engaged, married or divorced.

Having children: the critical care nurse chooses from four choices which are; no children, 1-3 children, 4-6 children or more than 7 children.

Other definitions in framework:

Outdoor breaks: taking break for 20 minutes at daily out of the hospital for example in hospital garden.

Levels of burnout syndrome: are levels that will be determined according to the Maslach Burnout Inventory questionnaire; low, moderate and high –level burnout.

1.6.2 Framework:

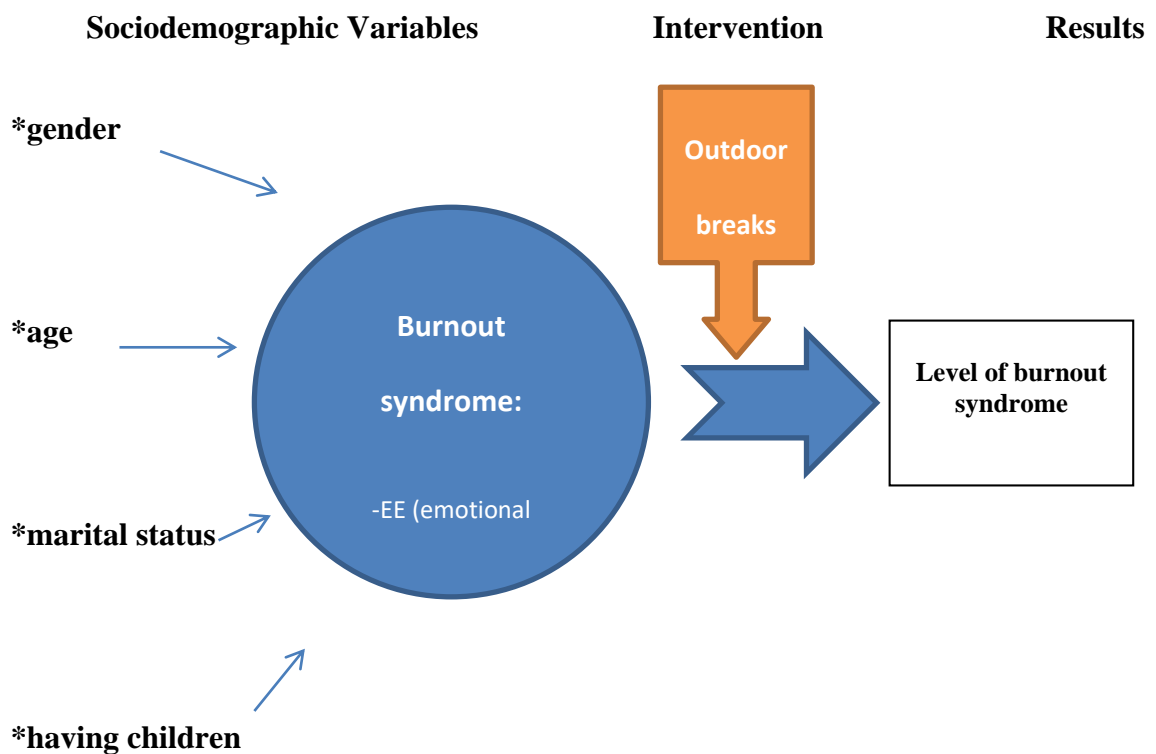


Figure 1.1: Conceptual framework of burnout syndrome and its' risk factors among critical care nurses in Palestinian governmental hospitals.

Chapter Two

Literature Review

Chapter Two

Literature Review

By searching about our study topic I found 89 researches related to the study, while was choosing 33 researches depending on this criteria which is narrowing down the research topic, choosing an interest, significant and challenging topic, and avoiding over-exhausted and can't be managed topics, taking in consideration the availability of sources.

The intensive care unit (ICU) work environment is demanding and challenging. Nurses strive to improve outcomes in sick patients, many of whom are likely to die. In the ICU, there are many moments of emotional turmoil, frustration, and defeat. So nurses are faced with the burden of making difficult decisions, breaking bad news, and bearing the emotional impact of dying patients and their families. These factors undoubtedly contribute to stress and burnout among nurses in the ICU [5].

Stress is a feeling of strain and pressure, whereas burnout is a multidimensional syndrome comprising emotional exhaustion, depersonalization (establishment of detached, distant, and cynical relationships with patients and colleagues), and a diminished sense of personal accomplishment. Chronic stress can lead to burnout, whereas burnout can also be due to other causes such as lack of job support and appreciation [5].

At the International Classification of Diseases (ICD-11), in the chapter of "factors including health status or contact with health services" you will find

burnout as an occupational phenomenon but not a medical condition and defined as “Burn-out is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions:

- Feelings of energy depletion or exhaustion;
- Increased mental distance from one’s job, or feelings of negativism or cynicism related to one's job; and
- Reduced professional efficacy.

Burn-out refers specifically to phenomena in the occupational context and should not be applied to describe experiences in other areas of life" [6].

Burnout is a process in which workers are continuously subjected to stressors that they find themselves unable to cope with. And describe the physical and emotional exhaustion that workers may experience on the job, especially those who provide some types of service to others [2].

Burnout has three dimensions, which can be evaluated by the Maslach Burnout Inventory (MBI). These dimensions are: (i) emotional exhaustion (EE), related with the sensation of physical overexertion and mental weariness; (ii) depersonalization (D) or the presence of negative and cynical attitudes towards patients and colleagues; and (iii) low personal accomplishment (PA), reflecting the tendency to assess oneself negatively in relation to job performance and perceived general competence [2].

There are many factors that can lead to burnout such as unreal work expectations, work overload, lack of support in work place, feeling of limited time to do many things, you have imbalance between work and life, long-hours working, lack of break in work which can reduce stress and the consequence of burnout occurrence.

Although burnout is present in a wide range of occupations, health professionals (particularly nurses) are one of the occupational groups that are most at risk of developing it, due to the characteristic of their work and spending most of their working time in contact with the patients [2].

Burnout has repercussions on the quality of care and services provided. It also favors workplace absenteeism and even premature departures from the nursing profession [2].

You may recognize that you are going to have burnout when noticing some symptoms such as recurrent and continuous headaches, heartburn, gastrointestinal symptoms, lethargy, confused, recurrent unreasonable absenteeism, which all can lead to have bad habits such as alcohol abuse, drug and food misuse [7].

When the nurse expressed the previous symptoms or some of them that mean he/ she is going to have burnout, it is not occurring abruptly but in stages, these stages are 5 and defined in CLAMER page on the website and published in August 20, 2020.

The first stage is honeymoon phase in which the nurse is new to the job and have a stress of unknowing routine, and as every new nurse faces stress at the beginning of work. So the nurse is initiative, has satisfaction of job, job commitment, optimistic, high energy level and productivity [8].

Second phase is onset of stress, this phase is characterized by the appearance of days more difficult than others, and experiencing symptoms of stress such as fatigue, headache, heartburn and palpitations, decreased appetite or increased, needs high effort to concentrate, elevated blood pressure, decreased productivity and job satisfaction also [8].

When the stress becomes chronic with you means that you are at the third phase, it is called chronic stress phase. Some symptoms may be more serious than the second phase like apathy and lack of happiness, social withdrawal, aggressive behaviors, drug and alcohol misuse due to physical symptoms of illness, increase consumption of caffeine [8].

The serious symptoms developed to critical level in the fourth stage which is called burnout phase, because the chronic stress becomes bigger than our tolerance, cope becomes difficult to withstand, and symptoms include headache become chronic, bowel problems is more serious and chronic, inside emptiness feeling and social isolation [8].

If there is no intervention in the fourth stage to decrease the nurse burnout it will lead to the fifth stage which is called habitual burnout which is the final stage of burnout and more serious in this phase, the previous symptoms are already implanted in the nurse life and affect emotional, physical and mental

health. So symptoms are burnout syndrome, chronic sadness and even depression, and chronic physical and mental fatigue [8].

The physical and psychological consequences on nurses are mentioned before, and occupational consequences are job dissatisfaction, absenteeism with sickness or without, decreased quality of care and patient satisfaction [9]. Burnout makes nurses feel exhausted, lack in energy and mentally fatigue [2]. And is associated with poor staff health and decreased quality of medical care [10].

The questionnaire most frequently used and accepted by researchers is the Maslach Burnout Inventory (MBI). In fact, there are numerous psychometric studies that support this type of evaluation and modelization of the syndrome [2].

Maslach Burnout Inventory tool is a questionnaire developed by Ph.D. Christina Maslach and Ph.D. Susan E.Jackson from United States of America to assess burnout in the occupations of human services. It is a reliable, valid, self-report filling and easy to use tool, formed to measure the three dimensions of burnout syndrome which are emotional exhaustion, depersonalization and decreased personal achievement. The questionnaire composed of 22 items wrote in a statement way, distributed in three subscales, 9 items in emotional exhaustion, 5 items in depersonalization and 8 in decreased personal achievement, and the answer is in a form of frequency range from never to every day (0-7). For the first and second subscales (emotional exhaustion and depersonalization) the higher score

meaning higher level of burnout while the third aspect (personal achievement) the lower score meaning higher level of burnout [9].

Types of the instrument are Maslach Burnout Inventory-Human Services Survey (MBI_HSS) which is the used instrument in our study, other types are Maslach Burnout Inventory-Educators Survey (MBI-ES) and Maslach Burnout Inventory-General Survey (MBI-GS) [9].

When you are engaged in work all the time your brain tries to give you a break through some ideas like I need to have a cup of coffee, I need to take breath, I need to wash my face and then continue the left work, these trials your mind says to you such as someone else talking to you is to break the circle of focus and trial to protect your mind and body from damage.

While you are in the break your body will recharge energy, your mind releases stress, and your vitals return to normal and rest state then you will return stronger with more state of focus which helps you finish your work in a comfortable way, arranged suitably, and more effective way, which give you better goals even than you expect to have.

Taking daily work breaks for an outdoor garden may be beneficial to mitigating burnout for nurses working in hospital environments [10].

Experiencing few amount of stress considers normal, but when considering the current circumstances, may provoke your stress levels to become out of control. So a study done at Cornell University, by a team of researchers, found that spending only 10 minutes in nature has a benefit of reducing stress

physically and mentally. And also has the same effect of going for a walk. Where 10-50 minutes in nature was the most effective to improve mood, focus and physiological makers like blood pressure and heart rate. Which the nature doesn't have to be a 50-acre forest –it can be something as simple as a grassy park or trees, can make us feel 30% more relaxed; because of only 10 minutes out you can have your lunch in nature in this time or walk around a local leafy spot. So it is important to search for a quick, effective and may most important a free method to resolve stress which may be spending time in nature, which could be a best choice. [11]

Outdoor break means nature, fresh air and sunshine, there is a study written by Greenspace at 2015 said that the advantages of outdoor break increases when be combined with exercise-even simply walking. Which intern can release stress and anxiety, alleviate symptoms of depression, increase concentration and creativity, improve your immunity and make you healthier and happier and help us get more vitamin D. [12]

Sunshine outdoor break fading stress, clearing your mind, soaking in some amazing vitamin D, despite it is a new idea, but it is not going out of style soon. Outdoor break is a crucial idea for indoor employees especially garden with green space and beautiful ambiance by adding outdoor planters, brightly colored flowers and plants that are pleasing to the sense. [13]

Certain personal factors such as gender, age, marital status, having children and personality may correlate with burnout development in nurses and physicians [14].

Chapter Three

Method

Chapter Three

Method

3.1 Research Design:

The research design is Quazi experimental study which involved both an intervention and control group. No randomization due to few numbers of critical care nurses in Palestinian governmental hospitals.

3.2 Site and Settings:

Critical care units in Palestinian governmental hospitals which are; Jenin Governmental Hospital-Jenin, Palestine Medical Complex-Ramallah and Rafidia surgical governmental hospital -Nablus.

Critical care units in Jenin Governmental Hospital:

It was established in 1961. Serves many towns around, it is at Jenin-Al Mahatah street- near the district. Containing 9 beds of intensive care unit and 14 beds of neonate intensive care unit, with 15 nurses in NICU and 19 in ICU the sum is 34 nurses in Jenin.

Critical care units in Palestine Medical Complex (PMC):

PMC in Ramallah consists of 5 hospitals 3 of them were already existing (Ramallah Public Hospital, Al-Sheikh Zayed Hospital, National Center for Blood Diseases- Hippocrates) and the other 2 hospitals newly added and they are the Bahrain pediatrics Hospital, and Kuwaiti Specialized Surgery

Hospital. It provides a wide range of services, including neonatal care, maternity care, internal medicine, pediatrics, general surgery, and cardiovascular surgery. It was established in 1963 and named by PMC in 2010. Located in Ramallah city –Ramallah Street. Contain many critical care units: medical intensive care unit-20 nurses, CCU/r has 13 nurses, CCU/k has 19 nurses- and neonatal care unit-21nurses, all together have 73 critical care nurses.

Critical care units in Rafidia surgical governmental hospital:

It was built up in 1976; it is one of the biggest health institutions in the north of West Bank, the occupancy rate of 2017 was 88%, containing 2 critical care units which are; neonate intensive care unit-30 nurses and surgical critical care unit-22 nurses, the sum is 52 critical care nurses. Located at Nablus city, Rafidia- Street.

3.3 Population:

All nurses who work in critical care units in these governmental hospitals which include: Jenin Governmental Hospital, Palestine Medical Complex and Rafidia Surgical Governmental Hospital.

3.4 Sample and sampling:

Convenience sample was choosed

Protocol:

In this study we did a pretest questionnaire for all critical care nurses in the selected governmental hospitals, Ramallah and Rafidia hospital chosen as a control group, while Jenin hospital intervention applied for it which is an outdoor hospital break for 6 weeks daily for 20 minutes then turned back to the ward.

Then the nurses were asked about if they went into a break or not and what is the reason that prevented them from taking outdoor break.

The nurses did the following activities during break which are: walking, having lunch or breakfast, smoking, drinking coffee or tea, hearing family news and sounds.

The Maslach burnout Inventory questionnaire was applied again for all the selected governmental hospitals after the end of intervention period. The results then were analyzed.

3.5 Including and excluding criteria:

Including criteria:

All critical care nurses who work in the intensive care units at the time of the study, in the mentioned governmental hospitals.

Excluding criteria:

Critical care nurses were not able to participate in the study. And nurses who don't work in intensive care units.

3.6 Study tool:

The Maslach Burnout Inventory (MBI) questionnaire the most commonly used tool to self-assess whether you might be at the risk of burnout. It contains three components: emotional exhaustion, depersonalization and decreased personal achievement.

For each question, indicates the score that corresponds to your response. Add your score of each section and compare your results from the scoring results interpretation.

3.7 Reliability of the tool:

Reliability approved using Cronbach's coefficient alpha ($n=1316$) and was 0.90 for emotional exhaustion, 0.79 for depersonalization and 0.71 for decreased personal achievement. And standard error is 3.80 for emotional exhaustion, 3.16 for depersonalization and 3.73 for decreased personal achievement [9].

In the present study the Cronbach's coefficient alpha was 0.80 for emotional exhaustion, 0.79 for depersonalization and 0.78 for decreased personal achievement.

Reliability of the tool approved also by using test-retest reliability with an interval of 2-4 weeks and was 0.82 for emotional exhaustion, 0.60 for depersonalization and 0.80 for decreased personal achievement [9].

In this study the test-retest reliability was 0.86 for emotional exhaustion, 0.82 for depersonalization and 0.69 for decreased personal achievement.

3.8 Validity of the tool:

First way used; the individual's Maslach Burnout inventory (MBI) points was linked with behavioral scores done independently by a one knew the individual well [9].

Second way; the score of MBI was correlated with the existence of basic features that were expected to contribute to experiencing burnout [9].

Third manner; the scores of MBI were correlated to with measures of many outcomes which were hypothesized to related to burnout [9].

3.9 Ethical considerations:

Permission was sent to use the Maslach Burnout Inventory Human Services, by sending a message to the publisher Mind Garden.

Approval of the Institutional Review Board (IRB) of An-Najah National University was taken.

Permission of the ministry of health, health research and development division was taken, and the directors of the selected governmental hospitals and matrons.

Informed consent of the participators, and other points explained at the beginning of the questionnaire.

The participants informed that the filling of the questionnaire is just for research purpose and not for anything else.

All information was treated by coding technique and in confidentiality; also information wasn't used against the participant in any way.

The participants had the right to withdraw at any time.

Chapter Four

Results

Chapter Four

Results

Introduction:

This thesis was conducted with the aim of evaluating the effect of break on the nurses who work in the close places most exposed to stress pressure and surprises, namely the intensive care units.

In this chapter, the results of burnout among these nurses working in these closed units will be presented in terms of burn out level and the extent of the relationship of personal demographic and characteristics to it, and then the possibility of mitigating this burn out through the outdoor breaks.

Participant characteristics of control versus intervention groups:

When comparing the characteristics of study participant nurses working in the intensive care units between the two groups (control versus intervention), we find, as the first table shows, that there are no statistically significant (p value > 0.05) differences between the two groups, and therefore we can compare them in terms of the effect of outdoor breaks on job burnout.

Although there was no statistical significance differences, the percentage of females was higher in the intervention group (68% vs. 44.7%), while other nurses characteristics were closely related; the age group 20 to 40 years (96% vs. 91%), married (56% vs. 46%), without children (68% vs. 60%), and working rotating shifts (96% vs. 82%) were the most among the two groups.

Table 4.1: Participant characteristics of control versus intervention group

Variable	Category	Group		X^2	Sig.
		Control	Intervention		
Gender	Male	47 (55.3%)	8 (32.0%)	4.193	0.067
	Female	38 (44.7%)	17 (68.0%)		
Age	21-30 years	39 (45.9%)	12 (48.0%)	0.51	.884
	31-40 years	39 (45.9%)	12 (48.0%)		
	41-50 years	7 (8.2%)	1 (4.0%)		
Address	Jenin	0(0.0%)	25(100.0%)	110.0	<.001
	Nablus	41(48.2%)	0(0.0%)		NA
	Ramallah	44(51.8%)	0(0.0%)		
Marital Status	Single	29(34.1%)	9(36.0%)	2.04	.353
	Engaged	17(20.0%)	2(8.0%)		
	Married	39(45.9%)	14(56.0%)		
Children	No Children	51(60.0%)	17(68.0%)	.578	.747
	1-3 Children	24(28.2%)	6(24.0%)		
	4-6 Children	10(11.8%)	2(8.0%)		
Shift Rotation	Rotated Shift	70(82.4%)	24(96.0%)	3.108	.373
	A Shift	9(10.6%)	1(4.0%)		
	B Shift	4(4.7%)	0(0.0%)		
	C Shift	2(2.4%)	0(0.0%)		

The pre level of burn out categories among the two groups (control & intervention):

It is obvious and clear in table 4.2 that the nurses participating in the study were suffering from a moderate to high level of job burnout at post intervention in pretest in both control & intervention groups, as their answers reflected that 83.5% of them were suffering from moderate to high emotional exhaustion burn out, and only 16.5 % had a low level of emotional exhaustion burn out.

As for the depersonalization burn out, the answers of the participating nurses were that 100.0% of them suffer moderate to high level of depersonalization burn out.

As for their answers about the personal achievement burn out, their answers reflected that 98.2 % of them had between medium and high level personal achievement burn out and only 2 % had low level personal achievement burn out.

There were a statistically significance differences (p value < 0.05) between the two groups regarding burn out categories depersonalization (p value= 0.003) and personal achievement (p value= 0.002).

Table 4.2: The baseline level of burn out categories (Emotional Exhaustion, Depersonalization, & Personal Achievement) comparison between control versus intervention groups

Variable: Burn out level			Group		
	Category	Total	Control	Intervention	Sig.
Emotional Exhaustion	Low	18(16.5%)	16 (18.8%)	2(8.3%)	$X^2 = 4.87$ $P = 0.08$
	Moderate	56(51.4%)	46(54.1%)	10(41.7%)	
	High	35(32.1%)	23(27.1%)	12(50.0%)	
Depersonalization	Moderate	86(79.6%)	72(85.7%)	14(58.3%)	$X^2 = 8.6$ $P = 0.003$
	High	22(20.4%)	12(14.3%)	10(41.7%)	
Personal Achievement	Low	2(1.8%)	1(1.2%)	1(4.2%)	$X^2 = 12.5$ $P = 0.002$
	Moderate	17(15.6%)	8(9.4%)	9(37.5%)	
	High	90(82.6%)	76(89.4%)	14(58.3%)	

Baseline pretest emotional exhaustion burn out level:

The participating nurses in the study within the control group had an emotional exhaustion rate of 24.4 (moderate level), and the figure 4.1 reflects that about 70 % of them had a level between 17 to 32, meaning that they suffer from a moderate to high level of emotional exhaustion at pretest.

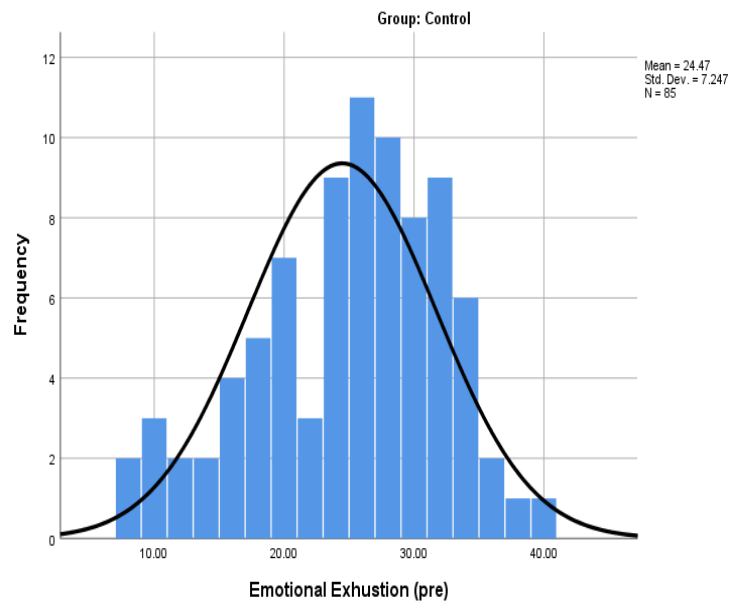


Figure 4.1: Baseline emotional exhaustion burn out among control group

The participating nurses in the study within the intervention group had an emotional exhaustion rate of 29.8 (moderate level), and the figure 4.2 reflects that about 70 % of them had a level between 22 to 37, meaning that they suffer from a moderate to high level of emotional exhaustion at baseline pretest.

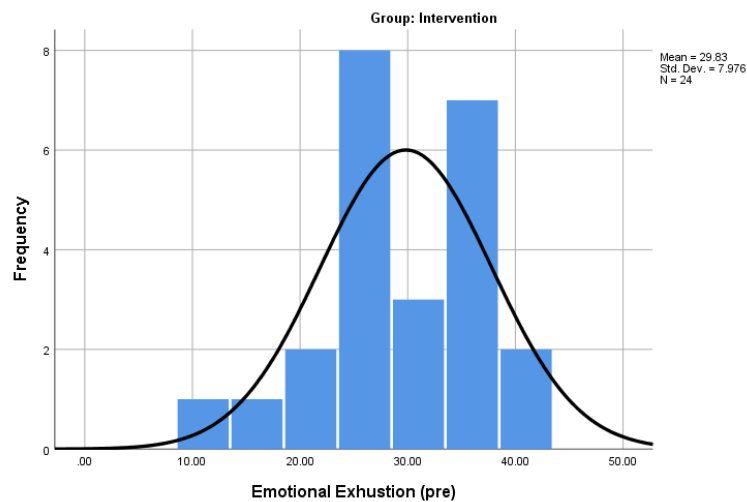


Figure 4. 2: Baseline pretest emotional exhaustion burn out among intervention group

Baseline intervention pretest depersonalization burn out:

The participating nurses in the study within the control group had an average depersonalization of 21.3 (moderate level), and the figure 4.3 reflects that about 70 % of them had a level between 14 to 28, meaning that they suffer from a moderate to high level of depersonalization at baseline pretest.

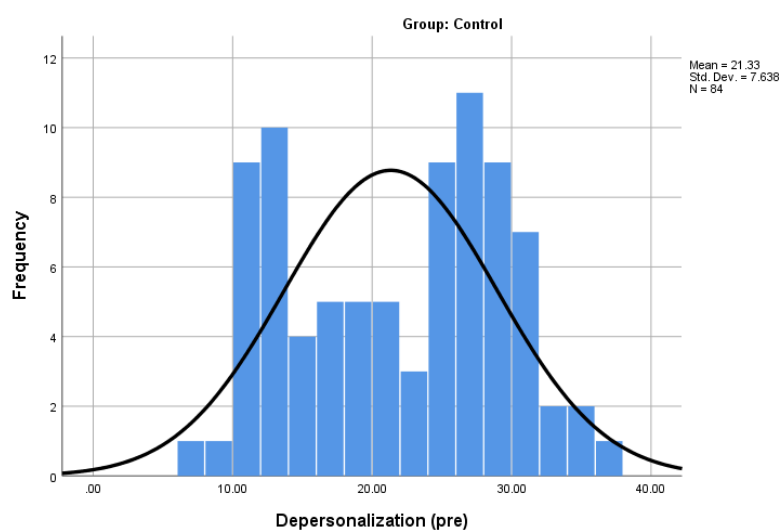


Figure 4.3: baseline pretest depersonalization exhaustion burn out among control group

The participating nurses in the study within the intervention group had an average depersonalization of 26.4 (moderate level), and the figure 4.4 reflects that about 70 % of them had a level between 19 to 33, meaning that they suffer from a moderate to high level of depersonalization at baseline pretest.

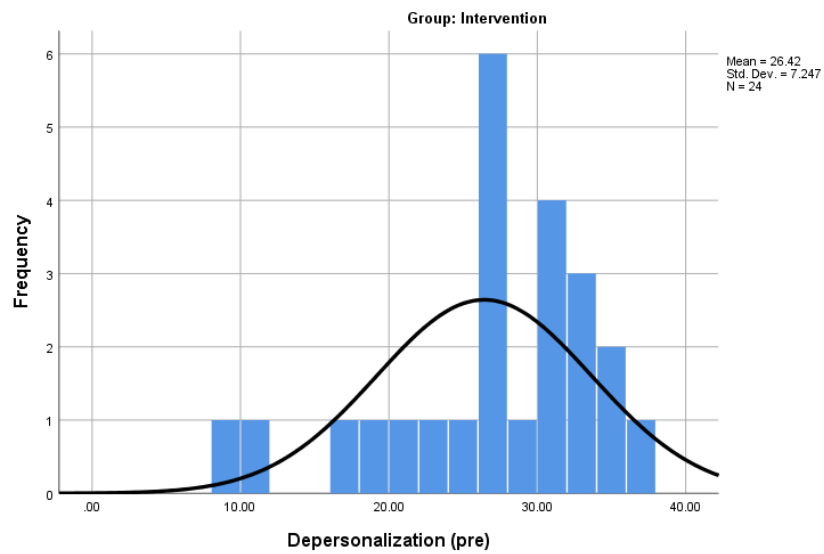


Figure 4.4: baseline pretest depersonalization burn out among intervention group

Baseline pretest personal achievement burn out level:

The participating nurses in the study within the control group had an average of 23.8 in personal achievement (moderate level), and the figure 4.5 reflects that about 70 % of them had a level between 16 to 31, meaning that they suffer from a moderate to high level of personal achievement burn out at baseline pretest.

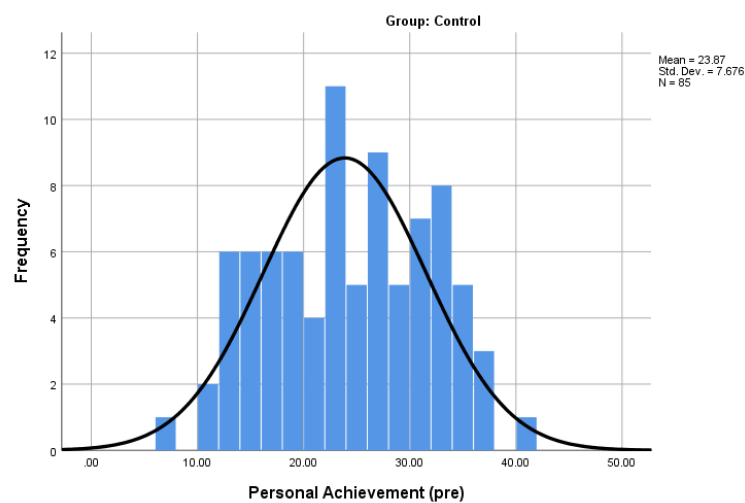


Figure 4.5: baseline pretest personal achievement burn out among control group

The participating nurses in the study within the intervention group had an average of 30.3 in personal achievement (moderate level), and the figure 4.6 reflects that about 70 % of them had a level between 22 to 38, meaning that they suffer from a moderate to high level of personal achievement burn out at baseline pretest.

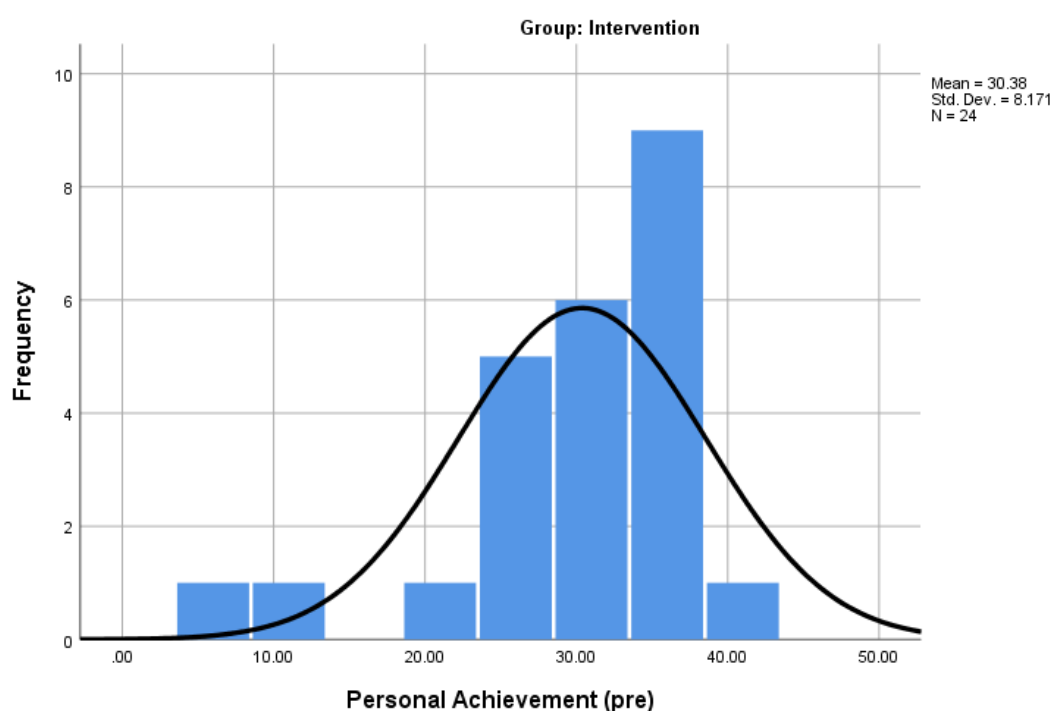


Figure 4.6: baseline pretest personal achievement burn out among intervention group

The post intervention level of burn out categories among the two groups (control & intervention):

It is clear and evident in table 4.3 that the nurses participating in the study were still suffering from a high level of job burnout at post intervention in posttest, as their answers reflected that 80% of them were still suffering from moderate to high emotional exhaustion burn out, and only 20 percent had a low level of emotional exhaustion burn out.

As for the depersonalization burn out, the answers of the participating nurses were that 98% of them suffer between medium and high level of depersonalization burn out and the rest of them are 2% of them have low level of depersonalization burn out.

As for their answers about the personal achievement burn out, their answers reflected that between 92 % of them had between medium and high level personal achievement burn out and only 8 % had low level personal achievement burn out.

There were no any significance differences (p value > 0.05) between the two groups regarding burn out categories and they had nearly the same level of burn out at the post intervention (posttest).

Table 4.3: The post intervention level of burn out categories (Emotional Exhaustion, Depersonalization, & Personal Achievement) comparison between control versus intervention groups

Variable: Burn out level	Category	Total	Group		Sig.
			Control	Intervention	
Emotional Exhaustion	<i>Low</i>	20(18.7%)	17 (20.7%)	3(12.0%)	$X^2=1.09$ $P= 0.58$
	<i>Moderate</i>	58(54.2%)	44(53.7%)	14(56.0%)	
	<i>High</i>	29(27.1%)	21(25.6%)	8 (32.0%)	
Depersonalization	<i>Low</i>	2(1.8%)	2(2.4%)	0(0.0%)	$X^2=2.6$ $P= 0.27$
	<i>Moderate</i>	13(11.8%)	12(14.1%)	1(4.0%)	
	<i>High</i>	95(86.4%)	71(83.5%)	24(96.0%)	
Personal Achievement	<i>Low</i>	7(6.4%)	4(4.7%)	3(12.0%)	$X^2=1.7$ $P= 0.42$
	<i>Moderate</i>	23(20.9%)	18(21.2%)	5(20.0%)	
	<i>High</i>	80(72.7%)	63(74.1%)	17(68.0%)	

Post intervention posttest emotional exhaustion burn out:

The participating nurses in the study within the control group had an emotional exhaustion rate of 23.8 (moderate level), and the figure 4.7 reflects

that about 70 % of them had a level between 15 to 32, meaning that they suffer from a moderate to high level of emotional exhaustion at post intervention posttest.

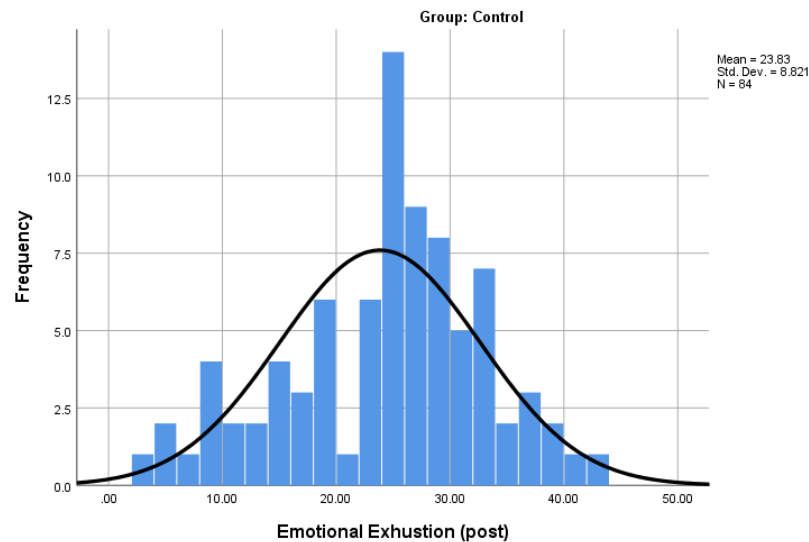


Figure 4.7: Post intervention posttest emotional exhaustion burn out among control group

The participating nurses in the study within the intervention group had an emotional exhaustion rate of 26.4 (moderate level), and the figure 4.8 reflects that about 70 % of them had a level between 20 to 32, meaning that they suffer from a moderate to high level of emotional exhaustion at post intervention post.

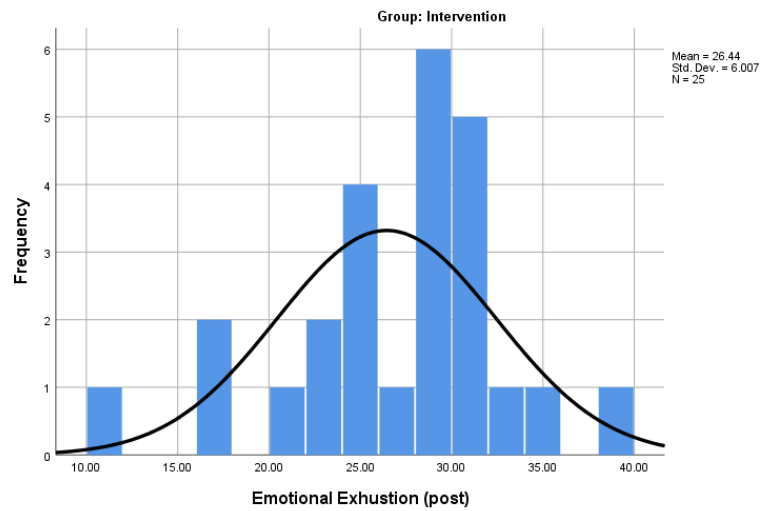


Figure 4.8: post intervention posttest emotional exhaustion burn out among intervention group

Post intervention posttest depersonalization burn out:

The participating nurses in the study within the control group had an average depersonalization of 23.0 (moderate level), and the figure 4.9 reflects that about 70 % of them had a level between 14 to 32, meaning that they suffer from a moderate to high level of depersonalization at post intervention posttest.

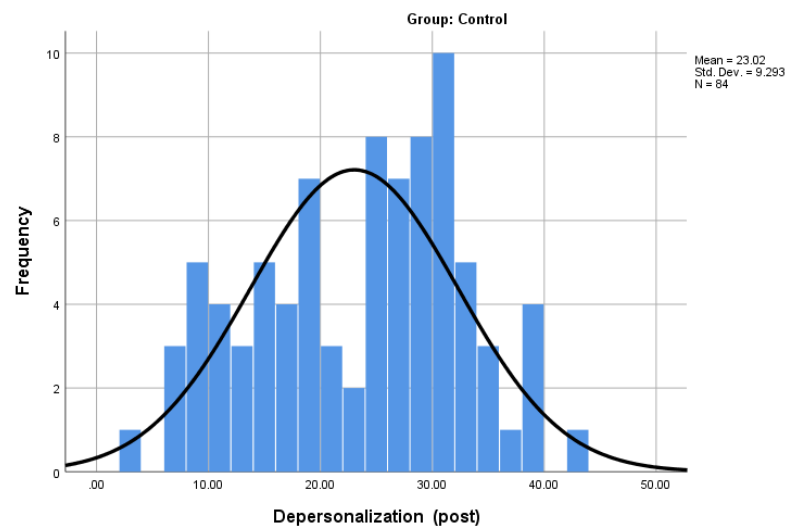


Figure 4.9: Post intervention posttest depersonalization burn out among control group

The participating nurses in the study within the intervention group had an average depersonalization of 23.1 (moderate level), and the figure 4.10 reflects that about 70 % of them had a level between 17 to 29.4, meaning that they suffer from a moderate to high level of depersonalization at post intervention posttest.

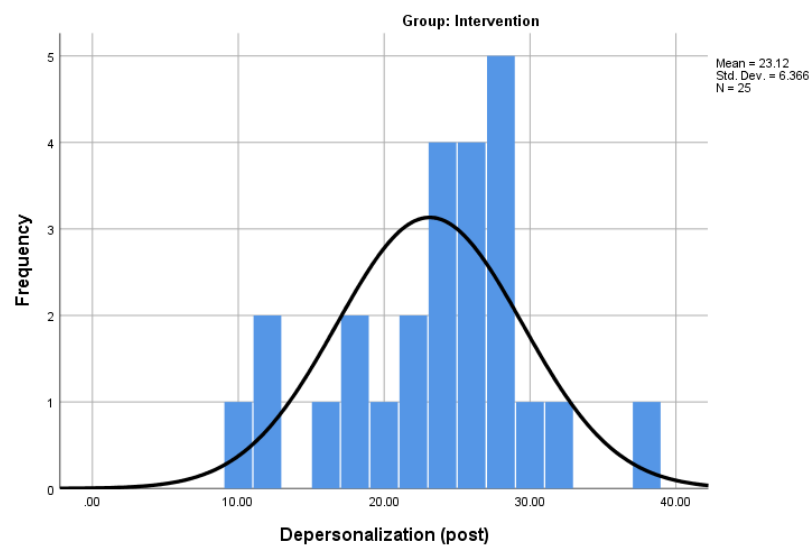


Figure 4.10: Post intervention posttest depersonalization burn out among intervention group

Post intervention posttest personal achievement burn out:

The participating nurses in the study within the control group had an average of 26.6 in personal achievement (moderate level), and the figure 4.11 reflects that about 70 % of them had a level between 17 to 35.8, meaning that they suffer from a moderate to high level of personal achievement burn out at post intervention posttest.

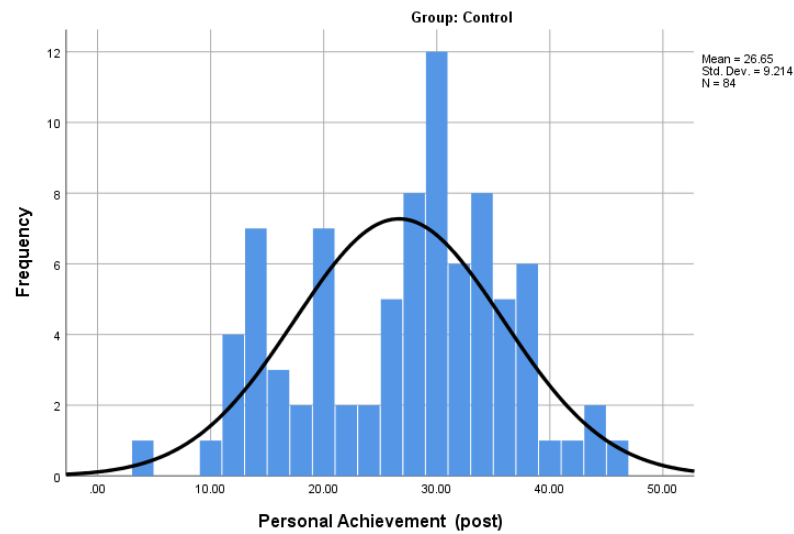


Figure 4.11: Post intervention posttest personal achievement burn out among control group

The participating nurses in the study within the intervention group had an average of 28.8 in personal achievement (moderate level), and the figure 4.12 reflects that about 70 % of them had a level between 20 to 37, meaning that they suffer from a moderate to high level of personal achievement burn out at post intervention posttest.

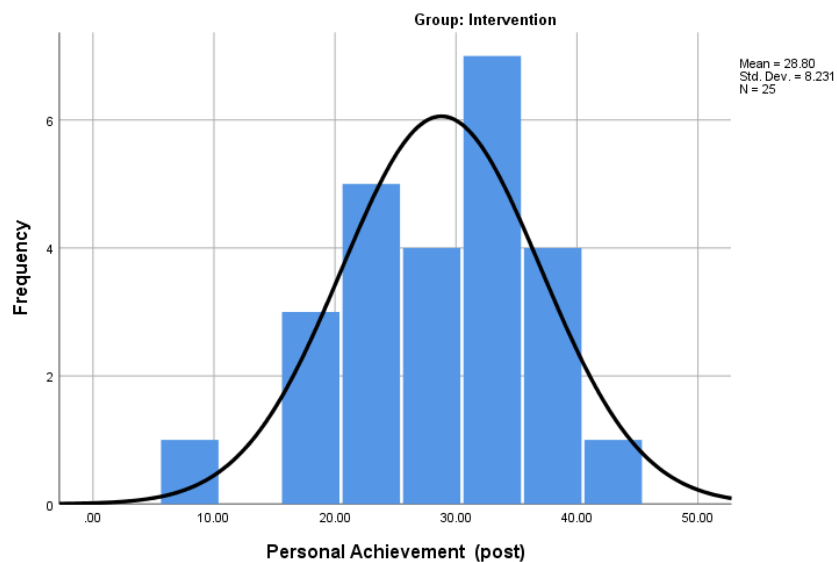


Figure 4.12: Post intervention posttest personal achievement burn out among intervention group

When comparing the level of burnout with its three levels (emotional exhaustion, depersonalization, & personal achievement) among the control group by using the paired t tests, we find that emotional exhaustion did not make any statistically significant difference (p value= 0.24) between the pre and the post level, while the other two levels, which are depersonalization and personal achievement, really made a statistically significant difference (p values= 0.015& 0.003 respectively) and higher level at post comparing with the pre level (23 vs 21.3 & 26.7 vs 23.9 respectively).

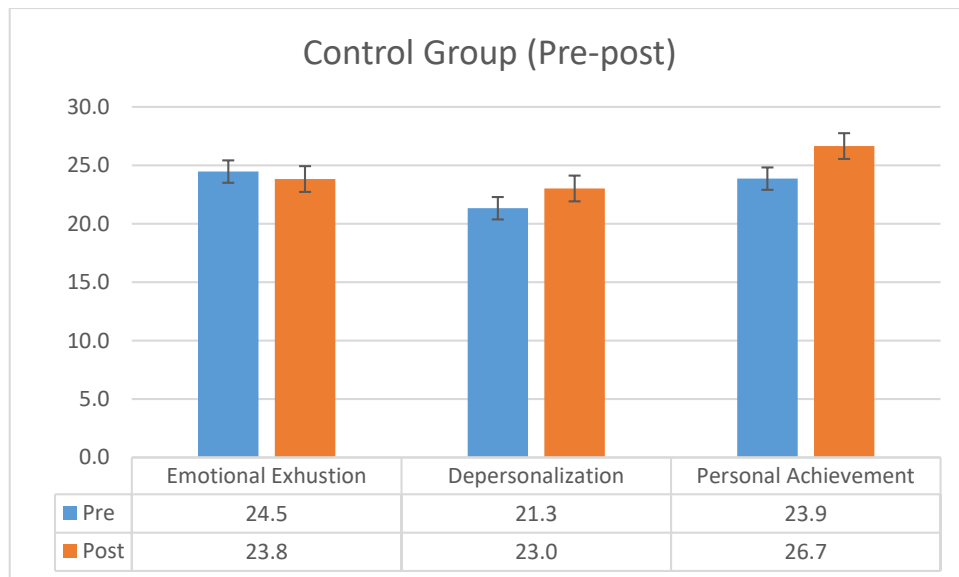


Figure 4.13: burnout categories pre and post among control group

Table 4.4: Paired Samples t test of burnout categories pre and post among control group

Burn out categories		N	Mean	SD	t	Sig.
Emotional Exhaustion	Pre	84	24.52	7.27	1.16	.246
	Post	84	23.83	8.82		
Depersonalization	Pre	84	21.33	7.63	-2.49	.015
	Post	84	23.02	9.29		
Personal Achievement	Pre	84	23.73	7.62	-3.08	.003
	Post	84	26.65	9.21		

When comparing the level of burnout with its three levels (emotional exhaustion, depersonalization, & personal achievement) among the intervention group by using the paired t tests, we find that personal achievement did not make any statistically significant difference (p value= 0.40) between the pre and the post level, while the other two levels, which are emotional exhaustion and depersonalization, really made a statistically significant difference (p values= 0.003&0.019 respectively) and lower levels at posttest in comparing with the pre levels (26.4 vs 29.8 & 23.1vs 26.4).

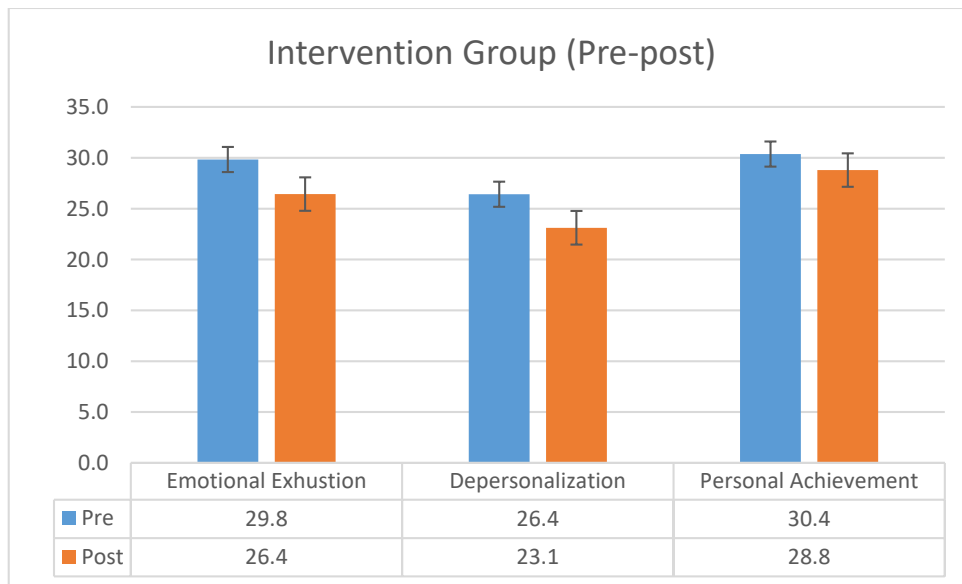


Figure 4.14: burnout categories pre and post among intervention group

Table 4.5: Paired Samples t test of burnout categories pre and post among intervention group

Burn out categories		N	Mean	SD	t	Sig.
Emotional Exhaustion	Pre	24	29.83	7.97	3.27	.003
	Post	24	26.37	6.12		
Depersonalization	Pre	24	26.41	7.24	2.53	.019
	Post	24	23.45	6.26		
Personal Achievement	Pre	24	30.37	8.17	.85	.400
	Post	24	29.29	8.02		

When comparing the pre level of burnout with its three levels (emotional exhaustion, depersonalization, & personal achievement) between control versus intervention group by using the independent t tests, we find that burnout with its three levels had a statistically significant differences (p value= 0.002, 0.004, & 0.001 respectively) and intervention group in comparing with control had a higher levels of emotional exhaustion (29.8 vs 24.5 respectively), depersonalization (26.4 vs 21.3 respectively), and personal achievement (30.4 vs 23.9 respectively).

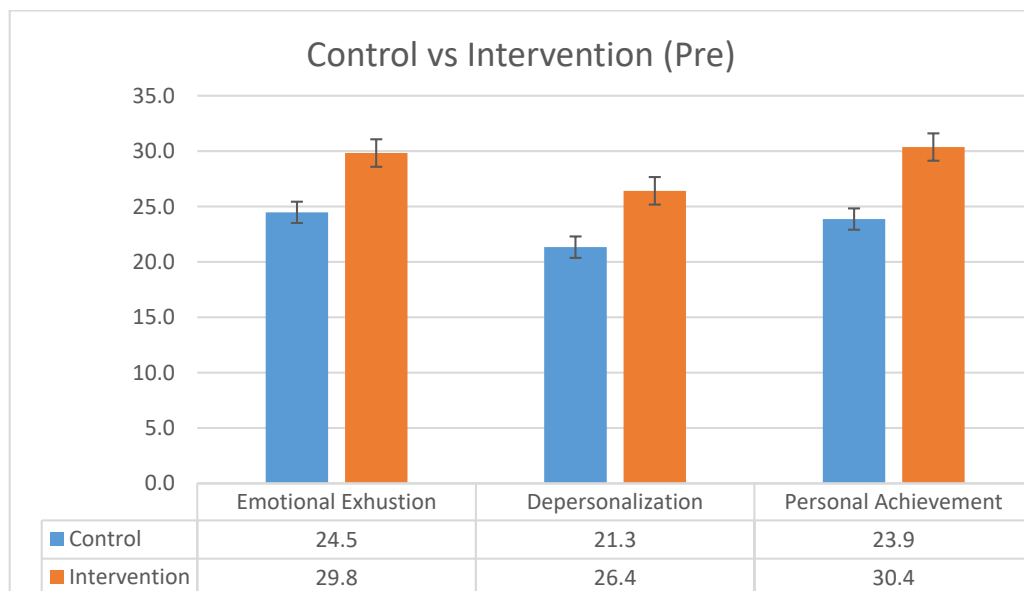


Figure 4.15: Burnout categories pre among intervention group versus control group

Table 4.6: Burnout categories pre among intervention group versus control group

Burn categories	out	N	Mean	SD	t	Sig.
Emotional Exhaustion	Control	85	24.47	7.24	-3.13	.002
	Intervention	24	29.83	7.97	-2.96	
Depersonalization	Control	84	21.33	7.63	-2.90	.004
	Intervention	24	26.41	7.24	-2.99	
Personal Achievement	Control	85	23.87	7.67	-3.61	<.001
	Intervention	24	30.37	8.17	-3.48	

When comparing the post level of burnout with its three levels (emotional exhaustion, depersonalization, & personal achievement) between control versus intervention group by using the independent t tests, we find that burnout with its three levels had no any statistically significant differences (p value= 0.17, 0.96, & 0.29 respectively) and intervention group in comparing with control group had a slightly higher levels of emotional exhaustion (26.4 vs 23.8 respectively) and personal achievement (28.8 vs 26.7 respectively) while both groups had the same level of depersonalization (23.1 vs 23.0 respectively).

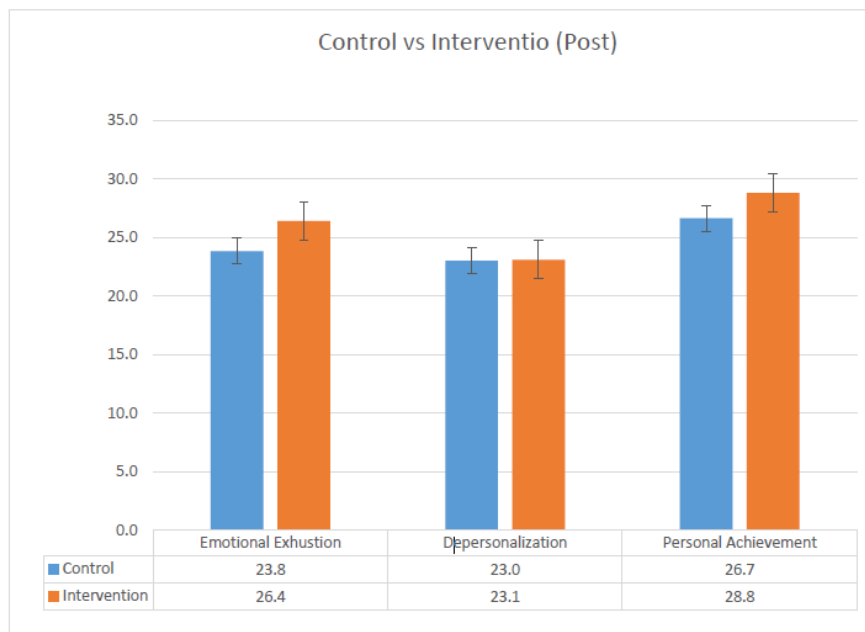


Figure 4.16: Burnout categories post among intervention group versus control group

Table 4.7: Burnout categories post among intervention group versus control group

	Group	N	Mean	SD	t	Sig.
Emotional exhaustion	Control	84	23.83	8.82	-1.38	0.170
	Intervention	25	26.44	6.00		
Depersonalization	Control	84	23.02	9.29	-0.4	0.961
	Intervention	25	23.12	6.36		
Personal achievement	Control	84	26.65	9.21	-1.04	0.298
	Intervention	25	28.80	8.23		

Multivariate analysis repeated measures correlation between demographic variables and burnout subscales:

Multivariate analysis using reacted measures ANOVA test revealed that gender and shift rotation were statistically correlate with ICUs nurses emotional exhaustion subscale of job burnout (p values= 0.05 & 0.01 respectively) while other demographic variables had no any statistical significant correlation. Break intervention (Group) was not statistically significant but it has marginal significant difference correlation with emotional exhaustion subscale of job burnout among ICUs nurses. Female had higher grand means than male (26.5 & 23.5 respectively) and rotated shift had higher grand means than A, B, C shifts (25.7, 23.8, 19.2, 9.5 respectively).

Table 4.8: repeated measures ANOVA for correlation of demographic variables with Emotional Exhaustion among groups

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	3143.27	1.0	3143.2	32.6	0.00	0.24
Gender	384.96	1.0	384.9	4.00	0.05	0.04
Age	254.01	1.0	254.0	2.64	0.11	0.03
Marital Status	9.50	1.0	9.50	0.10	0.75	0.00
Children	73.31	1.0	73.3	0.76	0.39	0.01
Shift Rotation	743.68	1.0	743.6	7.73	0.01	0.07
Group	313.42	1.0	313.4	3.26	0.07	0.03

Multivariate analysis using repeated measures ANOVA test revealed that all demographic variables had no any statistical significant differences correlation with Depersonalization subscale of job burnout among ICUs nurses. Break intervention (Group) was not statistically significant but it difference correlation with emotional exhaustion subscale of job burnout among ICUs nurses.

Table 4.9: repeated measures ANOVA for correlation of demographic variables with Depersonalization among groups

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	2502.19	10	2502.19	21.54	0.00	0.18
Gender	107.33	1.0	107.33	0.92	0.34	0.01
Age	271.56	1.0	271.56	2.34	0.13	0.02
Marital Status	6.02	1.0	6.02	0.05	0.82	0.00
Children	40.21	1.0	40.21	0.35	0.56	0.00
Shift Rotation	0.39	1.0	0.39	0.00	0.95	0.00
Group	198.17	1.0	198.17	1.71	0.19	0.02

Multivariate analysis using reacted measures ANOVA test revealed that gender and Break intervention (Group) were statistically correlate with ICUs nurses Personal Achievement subscale of job burnout (p values= 0.03 & 0.04 respectively) while other demographic variables had no any statistical significant correlation with emotional exhaustion subscale of job burnout among ICUs nurses. Female had higher grand means than male (29.1 & 24.9 respectively) and intervention group had higher grand mean than control group (28.8, 25.3 respectively).

Table 4.10: repeated measures ANOVA for correlation of demographic variables with Personal Achievement among groups

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	3929.53	10	3929.5	37.7	0.00	0.27
Gender	478.70	1.0	478.7	4.60	0.03	0.04
Age	10.82	1.0	10.8	0.10	0.75	0.00
Marital Status	0.59	1.0	0.59	0.01	0.94	0.00
Children	14.4	1.0	14.4	0.14	0.71	0.00
Shift Rotation	225.03	1.0	225.0	2.16	0.14	0.02
Group	465.54	1.0	465.5	4.48	0.04	0.04

Chapter Five

Discussion and Conclusion

Chapter Five

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5.1 Discussion

Introduction

The study aimed to leveling burnout among critical care nurses in Palestinian governmental hospital, and found that most of the critical care nurses had burnout syndrome at moderate to high level of burnout, which is inconsistent with this study hypothesis and accepted as smaller majority of critical care nurses had burnout syndrome.

Level of burnout among critical care nurses

As we searched for burnout in our country, we found that there are a few studies among Palestinian nurses. Our study showed that most of the participated nurses suffer from a moderate to high level of job burnout as reflected by moderate to high level of emotional exhaustion and depersonalization on the other hand a medium to high level of decreased personal achievement. This result is consistent with the results of the other studies which studied burnout among Palestinian nurses like the study that was published on the first of January 2020 with the title of "burnout among Palestinian nurses working in governmental and private hospitals at Nablus District"; the result was relatively high –level of depersonalization with percentage of 95.4%, moderate level of emotional exhaustion has the

percentage of 63.1% while 90.8% of them complaining of high level of decreased personal achievement. In general, they suffer from moderate level of burnout [15].

The moderate to high level of burnout of critical care nurses at governmental hospitals in Palestine may be because of unrealistic expectations, sleep deprivation, working for long hours, work related factors such as highly stressful work environment, and team related factors like lack of support, team work and collaboration [16]. As nurses feeling of need of caring for others before themselves and the extended role of nurses from direct care of the patients physically and emotionally to their families emotionally contribute to cause emotional exhaustion and burnout, increased mortality rate in intensive care units than other wards also causes stressfulness, the condition of putting them in the first line of medical care and provide comfort, education of others, advocating of patients and critical illness of patients cause busyness of nurses and contribute to cause burnout [17].

Baseline burnout in intervention and control groups

The baseline burnout level of intervention group is higher than control group, as emotional exhaustion, depersonalization and decreased personal achievement rate in intervention group was respectively (29.8, 26.4, 30.3b) which is higher than control group rates respectively 924.4, 21.3, 23.8). The intervention group represents Jenin- governmental hospital which had some characteristics contributed in increase burnout, these characteristics was the only governmental hospital in the governorate which increased the work

overload than other hospitals, and raised the stress level which in turn raised the burnout. Also the non-specialized character meant that the critical care unit will receive and serve many cases with many specialists such as medical, surgical, pediatric, orthopedic and obstetric patients, as the nurse shortage was present and increased patient-to-nurse ratio, so may the same nurse caring for more than patient at a time which may be medical and surgical patients. This was difficult to deal with rounds when there was more than round at the same time, which put more stress and burnout to nurse. As one cause of burnout is nurses shortage, which was worsen during the COVID-19 pandemic that put additional strain on health care system specially the nurses, in the presence of limited resources and decreased number of nurses [18].

The increased demand and decreased supply of nurses made the nursing shortage especially when opened a new intermediate care unit for COVID-19 patients in Jenin- hospital. And all the qualified nurses were moved to work in it, and the critical care unit lost some of its nurses, that made overstress and overwork to the remained nurses [18].

Posttest burnout in intervention and control groups

There are no significant differences between the control and intervention groups in burnout level posttest in comparing with pretest level, and it was 83.5% of nurses had moderate to high level of emotional exhaustion pretest, and 80% of nurses at the same level posttest, which is near to a result of cross-sectional study, with some differences in percentages, done to determine the level of emotional exhaustion in nurses in Urban Ghana, on

232 nurses, using MBI where 91.1% of them had moderate to high level of burnout [19].

In depersonalization 100% of nurses had moderate to high level pretest that decreased to only 98% medium to high level of depersonalization posttest, while 98.2% of nurses had a medium to high level of decreased personal achievement pretest became 92% of nurses had medium to high level of decreased personal achievement posttest. Which is different from the result of a prospective crossover study published on 27th of Nov. 2018, using MBI, with 29 nurses who took out door; garden break for 6 weeks each shift, noticed that there was a significant improvement in emotional exhaustion and depersonalization, but no significant effect for personal achievement, especially outdoor breaks than indoor ones ($P = 0.04$) [4].

The burnout level in intervention group posttest was less than pretest level of burnout, which was mainly related to the outdoor break (the intervention). But there was some impeding factors affected the decrease in burnout level such as:

❖ Nurse shortage

One of the factors that increase the burnout level is nurses shortage, which the nurse may take overtime, work for additional hours to minimize the need for more nurses and this in turn raises the patient-to-nurse ratio, which is increased in intervention group more than control group because of the few number of ICU beds, only 5 beds or all the governorate without the intermediate COVID-19 beds, the increased patient-to-nurse ratio increases the chance for infections,

injured, not in time care, patients morbidity days and complications, which all increase nurses shortage furthermore and putting up more stress to nurses and so on burnout level. While when nurses caring for fewer patients the error decreases and mortality of patients also [20].

As a study done across Pennsylvania, showed that with every additional patient in a nurse-to –patient ratio, there was a 7% increase in mortality rate within 30 days of admission and also 7% in the likelihood of failure to rescue the patient [21].

❖ **Long hours work**

Working 12-hour shifts harms the nurses and patients, nurses will experience severe fatigue and decreased integration between work and life, working for long hours increases stress that decreases nurse performance and decrease quality of care, which leads to exhaustion and then burnout, and increases chance for critical error which harm the patient [20]. In a study among 53,846 nurses from six countries done at 2010, showed that longer work hours lead to lower patient satisfaction. [22].

❖ **Death and sickness**

Daily dealing with critically ill patients and highly mortality rate patients by the time become overwhelming, and taking care of patients day-in and day-out can eventually cause burnout in nurses [20].

❖ COVID-19 pandemic

From the Wuhan, capital of Hubei province, China the spread of severe acute respiratory syndrome Corona virus 2 started, in December 2019, where the spread was broader and faster from other epidemic infections. 1500 nurses have died from COVID-19 in 44 countries until 28th of October 2020 according to International Council of Nurses. A meta-analysis study showed that nurses suffer from moderate to high level of burnout syndrome under this pandemic, which is similar to our study result. Nurses playing important instrumental role in response to COVID-19 pandemic as they are frontline health care givers and work directly with patients, so they are under persistent and extreme psychological stress where they are directly exposed to risk of SARS-Co V-2 infection, and they are full of fear for themselves health safety, their family and their patients also, related to this situation nurses complaining of severe psychological and mental problems that may lead to burnout, lower productivity and medical errors later on [23].

The decreased readiness of family and colleagues to deal with COVID-19 outbreak increased perceived risks for COVID-19, the work in quarantine places for long time, high-risk environment working, insufficient material and human resources at working hospitals, decreased level of specialized training regarding COVID-19 and increased workload, all the previous risk factors with the COVID-19 pandemic increases nurses' burnout level [23].

❖ **Nature of nurses' job**

Nature of nurses' job characterized by great workloads, which means patient care and many hats the nurses wear in the shift like charting responsibilities, follow up care, phone triage and other administrative tasks. As the work become more high-tech, the expectation of nurses is to administer higher level of care increases, that makes nurses ability to focus on their main responsibilities more difficult. Which cause frustration and inability to complete the job in a standard way as nurses would like to do [20].

❖ **Indoor break in control group**

Control group represents Palestinian Medical Complex (PMC) in Ramallah and Rafidia hospital in Nablus, where the critical care nurses took indoor break for having breakfast or drinking coffee, the break decreases nurses' stress and make them refresh, as better work done by well rested nurses, and because caring of patients need high energy so resting recharging nurses energy, which help in better caring of patients and decrease stress as well as exhaustion, that in turn decreases burnout level [24]. This break effect was the main cause to decrease burnout level in control group posttest from pretest level of burnout; even it was an indoor break. Brain is like any body organ get exhausted and tired from continuous focusing, so taking break help your brain to refresh, decreasing memory problems and promote problem-solving skills, break can be done by taking even one 30-minute break during work shift, also it increase your focus, promote quality of patients care and prevent errors that harm patients [25].

Break effect on burnout

▪ **Emotional Exhaustion (EE)**

By using of t-test for burnout categories pre and post in intervention group, we found that emotional exhaustion had ($P = 0.003$) which means there was a significant differences, while in control group was no significant differences ($P = 0.24$), which showed that the outdoor break is the cause of this differences between control and intervention groups. In a medical review published at 2019 by Timothy emotional exhaustion is caused by many factors, the most important ones are nature of nurse's job and long hours working which are the main causes in both control and intervention groups. Treating burnout using break discontinues the stress environment of job leading the mind to breathe [26]. As we did in our study especially outdoor breaks, so this proves our theory that says: "Outdoor breaks will mitigate burn out syndrome among critical care nurses"

▪ **Depersonalization (DP)**

The depersonalization category of burnout in pretest and posttest among intervention group ($P = 0.019$), there is a significant difference with lower level in posttest. This mean decreasing in burnout, even it is a little, this decreasing may due to the break either indoor or outdoor break, which is consistent with a prospective crossover study regarding outdoor breaks [4]. While the significant differences in control group ($P = 0.015$) is higher in posttest, which means increasing in burnout level in control group in posttest.

▪ **Decreased Personal Achievement (PA)**

Despite there is a significant difference in decreased personal achievement ($P=0.003$) in control group with a higher level posttest. There is no significant difference ($P= 0.4$) in intervention group, but a lower level in posttest. The increase in decreased personal achievement in control group and the decrease in decreased personal achievement in intervention group posttest may be related to the break, and may the break cause improvement in decreased personal achievement category, which rejects a study that showed no significant effect of break in decreased personal achievement [19].

As we didn't find a significant difference between the characteristics of the participants groups (control and intervention), we can compare them in terms of the effect of outdoor breaks on the job burnout

Regarding break there is significant relationship with emotional exhaustion and depersonalization, but no significant relationship with decreased personal achievement. Which consist with a study done to 29 nurses who took outdoor break there was a significant relationship with emotional exhaustion and depersonalization, but there was no significant relationship with decreased personal achievement [4].

Outdoor break is beneficial for releasing the mind stress, which in turn decreases emotional exhaustion, raises the quality of patient care and decreases depersonalization, and may lead to increased personal achievement by meeting the set goals in the suitable time and in comfort. All those affect the patient improvements and family satisfaction [4].

Sociodemographic factors and burnout

Using ANOVA test relating emotional exhaustion and sociodemographic factors, we found that there is a significant relationship with gender ($P = 0.05$) and shift rotation ($P = 0.01$), while there is no significant relationship with age, having children and marital status. As for depersonalization there is no significant relationship with all sociodemographic data. In decreased personal achievement there is a significant relationship with gender only

One of the aims of our study is to verify the sociodemographic risk factors of burn out syndrome, and according to the study they are gender and shift rotation.

- **Gender**

As this study showed that there is a significant difference in gender with emotional exhaustion that female had higher grand means than male (26.5 & 23.5 respectively), and there is also a significant difference in gender with decreased personal achievement which female had higher grand means than male (29.1 & 24.9 respectively), but there is no significant difference with depersonalization, which consists with a study that told us that burnout is higher in female, because they are more emotionally exhausted but less depersonalized than male nurses [27]. And male had the negative attitudes towards patients and team colleagues, which also affect interpersonal relationship of him [2]

- **Shift rotation**

The shift rotation had a significant difference, in our study, with emotional exhaustion only and was rotated shift had higher grand means than A, B, C shifts (25.7, 23.8, 19.2, 9.5 respectively). But there was no significant difference with depersonalization or decreased personal achievement. which consist with a study of A study of survey data from four states of America, showed that nurses who work 10 hours shifts or longer, have higher level of burnout of 2 and half times more than short shifts and have also dissatisfaction of job.[28]

And also consist with another cross sectional study of 502 nurses in Brazil, using Maslach Burnout Inventory questionnaires, the burnout level was higher in day-shift nurses than night shift ones, where those are caused by lack of control and social support, sleep deprivation and insufficient salary [29].

- **Marital status**

The marital status in our study has no significant difference with the three burn out categories, which reject a meta- analysis study of 3567 studies were detected and analyzed, the result was a higher level of burnout in single nurses than in married ones [30]. The single and divorced state with elevated levels of burnout may be because of married ones have a family environment that provides support and security which protect the nurse from developing negative attitudes towards patients and team and decreases impersonal attitudes [2].

- **Having children**

Having children in our study had no significant difference with burnout, which reject a meta-analysis study done in 2018, showed that having no children and being a male, divorced or single has higher levels of burnout, and having children decreases the levels of burnout by decreasing the sensation of emotional overload and over work [2]. And also reject a cross sectional study showed that having children increases emotional exhaustion and level of burnout [29].

- **Age**

Our study showed there in no significant difference between age and burn out, despite the study done in Singapore Tertiary Hospital using MBI applied on 3588 nurses there was a significant difference in age especially not more than 30 years by increased emotional exhaustion and depersonalization and decreased personal achievement [31]. Another study said that there was no significant difference between occupational stress with sex and age [32]. While a study done in Iran showed that there was a significant relationship between burnout and age, but no relationship with gender, marital status, family size and shift [33].

5.2 Limitations

One of the reasons that motivates me to study burnout among Palestinian nurses is the limited studies about burnout in Palestine and may can be consider as a limitation, The Maslach Burnout Inventory tool based on self-

report where the one who filled the pretest questionnaire marked using coding and the questionnaire posttest distributed again, after that gathered the pretest and posttest questionnaire for the same person together; so there was some questionnaires not filled in pretest and filled in posttest for the same participant and vice versa which in turn raised the excluded questionnaires and decreased the percentage of participants.

Limited time, difficulty of reaching cities and regions due to the Israeli barriers and Corona quarantine, the investigator conditions in the experiment period, the work overload of nurses in critical care units and lack of time to concentrate on and fill the questionnaire in quiet environment, and the refusal of participating in the study.

5.3 Recommendations

Doing wider studies in Palestine and adoption of effective burnout mitigation approaches such as 20 minutes break in each shift of work to decrease burnout levels in Palestinian nurses, which in turn improves mental health and as a long term goal increasing quality of patient and family care.

Developing an objective approach to assess the burnout level rather than using subjective data expressed by participants.

Education and training programmers should aim at recruiting and developing personnel competent to respond appropriately to health care needs and stressors.

Work overload is the most causing reason of burnout among critical care nurses which can be overcome by recruiting more registered nurses and enrolled auxiliaries nurses who in turn work in their scopes of practice such as taking vital signs, which helps registered nurses to concentrate on their functions.

Improve nurse-to-patient ratios, reduce working hours, providing support using rewards and improving work conditions. Continue teaching group of hospital advised to holding councils for nurses to teaching them stress coping mechanism to overcoming the stress that is long standing will lead to burnout.

5.4 Conclusion

Critical care nurse's burnout in Palestinian governmental hospitals is moderate to high level according to our study, affected by some of sociodemographic factors such as gender and shift rotation only, and can be mitigated using the break technique.

While applying our study we noticed that there are some factors contributed to increase the level of burnout which are the political obstacles between cities that prevented nurses to reach their work sites on time, which put an extra burden on them. Work overload and the pandemic of COVID-19 virus and nurses dealing with isolated patients which affected their ability to take break, and increased their fear of transmitting the virus to their families and children that put them under stress all the time.

Also the living conditions and the need of nurses to work another work to accomplish the family needs which in turn increase nurses fatigue, sleep deprivation, decrease their concentration and increase stress, which is with a long standing will convert to burnout and decrease the patients' quality of care.

One of the manners that are beneficial in dealing with such events to mitigate burnout level of nurses is to give break in work, give rewards even financial or moral ones, and improve work conditions. Which we recommended to study in future studies and are adopted by the ministry of health.

References

- [1] Fraga, J. (2019 June 5)." Why the WHO's Decision to Redefine Burnout Is Important". *Healthline*.
- [2] Cañadas-De la, F., Guillermo, A. et al. (2018 September 25). "Gender, Marital Status, and Children as Risk Factors for Burnout in Nurses: A Meta-Analytic Study." *International journal of environmental research and public health* vol. 15,10 2102. doi:10.3390/ijerph15102102
- [3] Grigorescu, S., Cazan, A. et al. (2018). The role of the personality traits and work characteristics in the prediction of the burnout syndrome among nurses—a new approach within predictive, preventive, and personalized medicine concept. *EPMA Journal* 9, 355–365
- [4] Cordoza, M., Ulrich, R. et al. (2018). Impact of Nurses Taking Daily Work Breaks in a Hospital Garden on Burnout. *American Journal of Critical Care*. 27. 508-512.
- [5] Divatia, J. (2014). Burnout in the ICU: Playing with fire?. *Indian journal of critical care medicine: peer-reviewed*
- [6] Course, W., Ulcer, D. F., et al. (2019 May 28) Burnout: An Occupational Phenomenon. *ICD-11*
- [7] Scheff, H., Monson, L. (2019). A Look at Burnout and How to Avoid It: The Who, What, Why, and How. *Dance Education in Practice*, 5(1), 7-12.

- [8] (2020 August 20). "What are the 5 stages of burnout?". *CLAMER*.
- [9] Maslach, C., Jackson, S. E., et al (1997 January). The Maslach Burnout Inventory Manual. *Research Gate*, ed. Evaluating stress: a book of Resources.
- [10] Zhao, K., Nakataki, M., et al. (2018). Professional burnout among physicians and nurses in Asian intensive care units: a multinational survey. *Intensive care medicine*, 44(12), 2079–2090.
- [11] Geal, L. (2021). Burnout: why spending 10 minutes in nature could be the key to keeping your stress levels under control. *STYLIST*.
<https://www.stylist.co.uk/life/how-to-avoid-burnout-stress-relief-tips-sitting-outside-nature-benefits-mental-health-advice/360995>
- [12] Greenscape. (30 Mar. 2015). The Health Benefits of Taking an Outdoor Break. *Greenscape*.
<https://www.greenscapeinc.com/blog/how-to/health-benefits-outdoor-break>
- [13]Versa tube.(2019). 5 Ideas for the Perfect Outdoor Break Room for Your Employees. *VersaTube News*. <https://www.versatube.com/news/5-Ideas-for-the-Perfect-Outdoor-Break-Room-for-Your-Employees-blog/>
- [14] Molina-Praena, Je.,Ramirez-Baena, L., et al. (2018). Levels of Burnout and Risk Factors in Medical Area Nurses: A Meta-Analytic Study.

International Journal of Environmental Research and Public Health.
15. 2800.

- [15] Abukhader, I., Abukhader, Kh. et al. (2020). Burnout among Palestinian Nurses Working in Governmental and Private Hospitals at Nablus District. *Open Journal of Social Sciences*. 08. 1-11. 10.4236/jss.2020.87001.
- [16] (2020). Nurse burnout: risks, causes and precautions. *USAHS*,
<https://www.usa.edu/blog/nurse-burnout/>
- [17] Well Being Index Team(2021). The biggest causes of nurse burnout and what you can do. *Well-Being Index Blog*,
<https://www.mywellbeingindex.org/blog/the-biggest-causes-of-nurse-burnout-and-what-you-can-do>
- [18] Commodore-Mensah, Y., DePriest, K., et al. (2021). Prevalence and Characteristics of Non-US-Born and US-Born Health Care Professionals, 2010-2018. *JAMA network open*, 4(4), e218396.
<https://doi.org/10.1001/jamanetworkopen.2021.8396>
- [19] Poku, C., Donkor, E.,et al. (2020). Determinants of emotional exhaustion among nursing workforce in urban Ghana: a cross-sectional study. *BMC nursing*, 19(1), 116. <https://doi.org/10.1186/s12912-020-00512-z>
- [20] Well-Being Index Team, (2020 January). NURSE BURNOUT everything you need to know about nurse burnout. *Well-Being Index Blog* <https://www.mywellbeingindex.org/nurse-burnout>

- [21] Aiken, L., Clarke, S., et al. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *JAMA*, 288(16), 1987–1993. <https://doi.org/10.1001/jama.288.16.198>
- [22] Poghosyan, L., Clarke, S., et al. (2010). Nurse burnout and quality of care: cross-national investigation in six countries. *Research in nursing & health*, 33(4), 288–298. <https://doi.org/10.1002/nur.20383>
- [23] Galanis, P., Vraika, I., et al. (2021). Nurses' burnout and associated risk factors during the COVID-19 pandemic: A systematic review and meta-analysis. *Journal of advanced nursing*, 77(8), 3286–3302.
<https://doi.org/10.1111/jan.14839>
- [24] Caulfield, (2018 July 6). Why Taking Breaks Is So Important For Nurses. *Nursing Facilities Blog.intelycare*
- [25] Torrento,R.(2019). Take Your Lunch Break and Refresh Your Brain.*HEALTHPROVIDERSCHOICE*.
<https://hpcnursing.com/index.php/nwblog/item/take-your-lunch-break-and-refresh-your-brain?fbclid=IwAR0n0T6i7XEZKbtrYlZZkNXFlaVD8Of6Gdarn7i9D0GhYA102o0zK4oYLnM>
- [26] Cafasso, J.(2019 April 9). Emotional Exhaustion: What It Is and How to Treat It. *healthline*, <https://www.healthline.com/health/emotional-exhaustion>
- [27] Purvanova, R.,Muros, J.. (2010). Gender differences in burnout: A meta-analysis. *Journal of vocational behavior*, 77(2), 168-185.

- [28] Stimpfel, A., Sloane, D., et al (2012). The longer the shifts for hospital nurses, the higher the levels of burnout and patient dissatisfaction. *Health affairs*, 31(11), 2501-2509.
- [29] Vidotti, V., Ribeiro, R., et al. (2018). Burnout Syndrome and shift work among the nursing staff. *Revista latino-americana de enfermagem*, 26.
- [30] Temel, S., Yildiz, T., et al. (2020). The effect of marital status on burnout levels of nurses: A meta-analysis study. *Journal of Clinical Medicine of Kazakhstan*, 4(58), 51-56.
- [31] Ang, S., Dhaliwal, S., et al. (2016). Demographics and Personality Factors Associated with Burnout among Nurses in a Singapore Tertiary Hospital. *BioMed research international*, 6960184.

<https://doi.org/10.1155/2016/6960184>
- [32] Faraji, A., Karimi, et al. (2019). Occupational stress and its related demographic factors among Iranian CCU nurses: a cross-sectional study. *BMC research notes*, 12(1), 634.

<https://doi.org/10.1186/s13104-019-4674-5>
- [33] Rashedi, V., Rezaei, M., et al. (2014). Burnout and socio-demographic characteristics of nurses in Iran. *Galen Medical Journal*, 3(4), 232-7.

Appendix

Scoring results- interpretation

Section A: Burnout

Burnout (or depressive anxiety syndrome): Testifies to fatigue at the very idea of work, chronic fatigue, trouble sleeping, physical problems. For the MBI, as well as for most authors, “exhaustion would be the key component of the syndrome.” Unlike depression, the problems disappear outside work.

- Total 17 or less: Low-level burnout
- Total between 18 and 29 inclusive: Moderate burnout
- Total over 30: High-level burnout

Section B: Depersonalization

“Depersonalization” (or loss of empathy): Rather a “dehumanization” in interpersonal relations. The notion of detachment is excessive, leading to cynicism with negative attitudes with regard to patients or colleagues, feeling of guilt, avoidance of social contacts and withdrawing into oneself. The professional blocks the empathy he can show to his patients and/or colleagues.

- Total 5 or less: Low-level burnout
- Total between 6 and 11 inclusive: Moderate burnout
- Total of 12 and greater: High-level burnout

Section C: Personal Achievement


The reduction of personal achievement: The individual assesses himself negatively, feels he is unable to move the situation forward. This component represents the demotivating effects of a difficult, repetitive situation leading to failure despite efforts. The person begins to doubt his genuine abilities to accomplish things. This aspect is a consequence of the first two.

- Total 33 or less: High-level burnout
- Total between 34 and 39 inclusive: Moderate burnout
- Total greater than 40: Low-level burnout

A high score in the first two sections and a low score in the last section may indicate burnout.

IRB Approval

**An-Najah
National University
Health Faculty of medicine &
Sciences
IRB**



**جامعة النجاح
الوطنية
كلية الطب وعلوم الصحة
لجنة أخلاقيات البحث العلمي**

Ref: Mas: Sep. /2020/6

IRB Approval Letter

Study Title:

“Critical care nurses burn out: Sociodemographic factors, leveling and mitigation in Palestinian governmental hospitals.”

Submitted by:

Maram Ahmad Mahmoud Zakarneh

Supervisor:

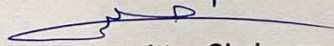
Jamal Qaddumi

Date Approved:


8th Sep 2020

Your Study Title “Critical care nurses burn out: Sociodemographic factors, leveling and mitigation in Palestinian governmental hospitals.” was reviewed by An-Najah National University IRB committee and was approved on 8th Sept.2020

Hasan Fitian, MD



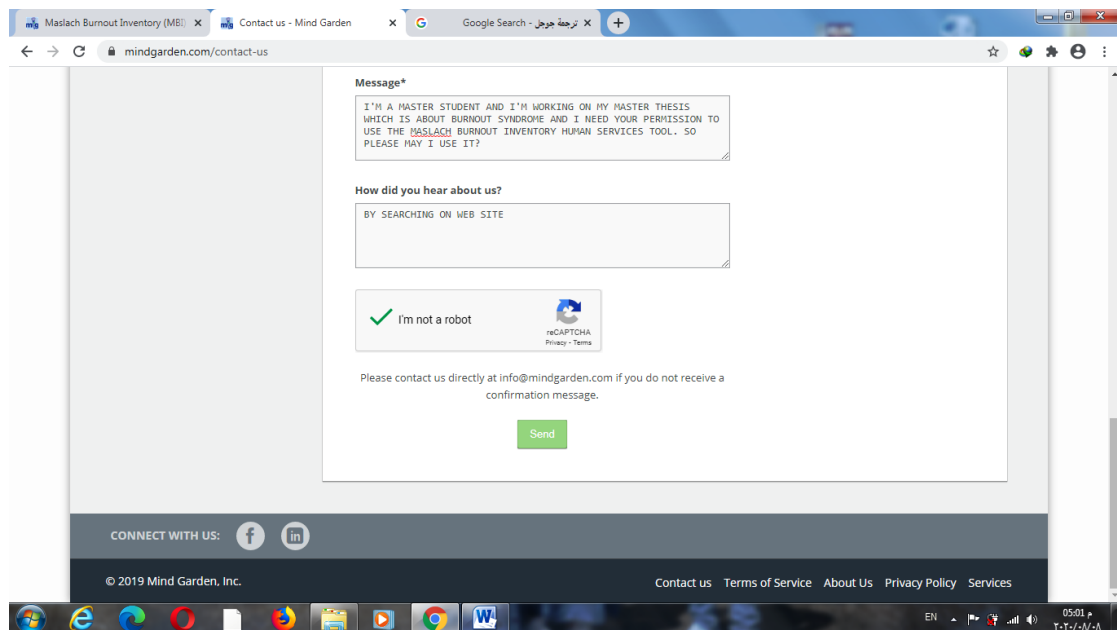
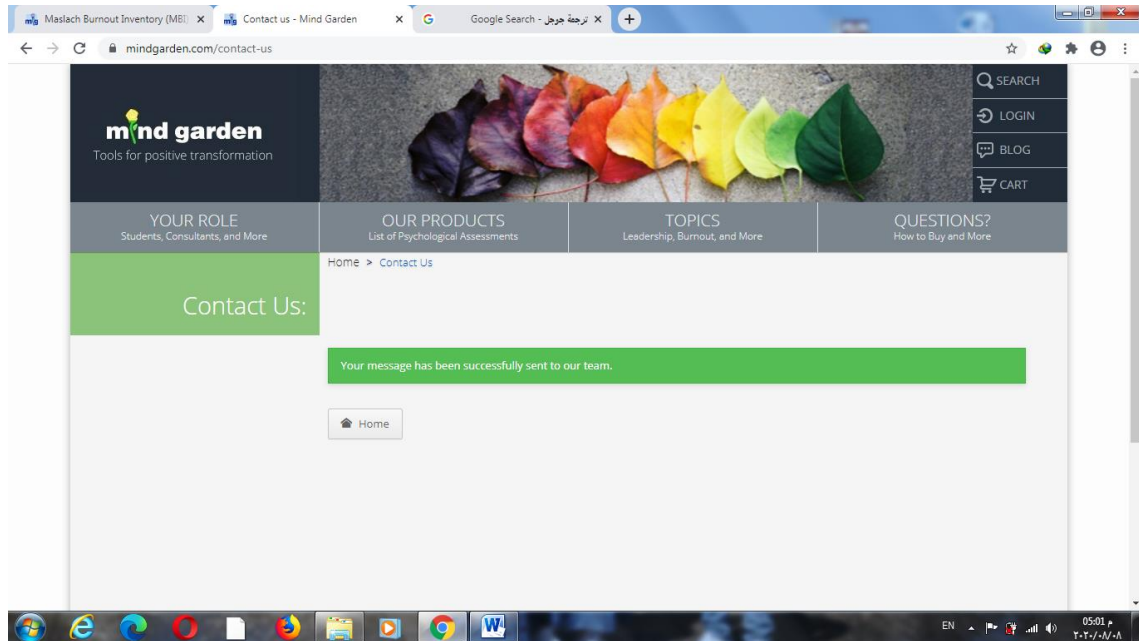
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استنزاف ممرضين العناية المكثفة: العوامل الديموغرافية،
مستوى الاستنزاف والتقليل منه في المستشفيات
الحكومية الفلسطينية

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الملخص

الأهداف: عمل المريض باستمرار في ظل المواقف العصيبة مع المرضى المصابين بأمراض خطيرة، يؤدي الى تقليل قدرتهم على التعامل مع الضغط و الإجهاد مما يعرضهم لمتلازمة الإرهاق، لذلك هدفت دراستنا إلى قياس مستوى إرهاق ممرضى العناية المكثفة، و تحديد والعثور على العلاقة بين عوامل الخطر الاجتماعية والديموغرافية ومتلازمة الإرهاق ، وتأثير الاستراحة على مستوى الإرهاق بين ممرضى العناية المكثفة في المستشفيات الحكومية الفلسطينية.

الطريقة: تمت الدراسة باستخدام طريقة Quazi التجريبية باستخدام استبيان تقرير ذاتي لجمع البيانات من ممرضى العناية المكثفة في المستشفيات الحكومية الفلسطينية، وتم قياس الإرهاق باستخدام استبيان (Maslach Burnout Inventory- Human Services Survey (MBI-HSS)، الموزع لاختبار قبلي لكلا المجموعتين المجموعة الضابطة ومجموعة التدخل، كان التدخل عبارة عن استراحة خارجية لمدة 20 دقيقة في كل ورديّة لمدة 6 أسابيع، ثم إعادة توزيع الاستبيان مرة أخرى بعد الاختبار لكلا المجموعتين.

النتيجة: أظهرت النتيجة ما مجموعه 110 ممرض رعاية مكثفة ملأوا الاستبيان ، حيث أن ممرضى العناية المركزة من المستشفيات الحكومية الفلسطينية حصلوا على مستوى متوسط إلى مرتفع من الإرهاق العاطفي وتبدد الشخصية، في حين أن المستوى المتوسط إلى العالي من انخفاض الإنجاز الشخصي. كان هناك علاقة إحصائية بين الإرهاق والجنس وتناوب الورديات أيضًا، بينما لم يكن هناك علاقة إحصائية مع العوامل الاجتماعية والديموغرافية الأخرى. كما كان هناك علاقة إحصائية بين الاستراحة ومجموعة التدخل بعد اجراء التدخل.

ب

المناقشة: توضح هذه الدراسة أن معظم ممرضي العناية المركزة الفلسطينيين يشكون من مستوى متوسط إلى مرتفع من الإرهاق. تتأثر متلازمة الإرهاق ببعض العوامل الاجتماعية الديموغرافية مثل الجنس حيث كان لدى الإناث مستوى أعلى من الإرهاق، وبالنسبة للممرضين المتناوبين الذين عملوا في ورديات متناوبة كان لديهم مستوى أعلى من الإرهاق مقارنة بالنوبات الثابتة، كما أن مناوبين الوردية الصباحية لديهم إرهاق أعلى من مناوبين الوردية المسائية والليلية، وكذلك الاستراحة في الهواء الطلق يمكن التخفيف من مستوى إرهاق الممرضين.