

Effect of Coping Strategies Program on Quality of Life among Emergency Clinic Nurses Working at Night Shift

Heba A. Abd Elkader¹, Eman N. Ramadan², Samah R. I. El Refaey³

¹Assistant Professor of Medical-Surgical Nursing, Faculty of Nursing, Benha University, Egypt
e-mail: serag_7000@yahoo.com

²Assistant professor of Community Health Nursing, Faculty of Nursing, Benha University, Egypt.
e-mail: dremannabil@yahoo.com

³Lecturer of Psychiatric and Mental Health Nursing, Faculty of Nursing, Benha University, Egypt.
e-mail: samah.alrefaai@fnur.bu.edu.eg

Received June 1, 2019, accepted June 21, 2019.

doi: 10.47104/ebnrojs3.v1i3.59

ABSTRACT

Context: The night shift work can have a negative impact on job performance, sleep, physical and emotional health, social life, family life, and level of job-related stress for nurses.

Aim: This study aimed to evaluate the effect of coping strategies program on quality of life among emergency clinic nurses working at night shift.

Methods: A quasi-experimental design was utilized to fulfill the aim of this study. The study was conducted at Emergency Clinic affiliated to Benha University Hospital. A convenience sample was used to achieve the aim of this study. It includes all nurses (60 nurses) who worked at night shift at Emergency Clinic. Three tools utilized in this study: Three tools were utilized in this study: Structured interviewing questionnaire to assess nurses' data, ways of coping scale for measuring coping abilities of nurses working at night shift. It included 45 items comprising eight subscales. The quality of life scale, which was designed for measuring the quality of life for nurses, consisted of 34 items categorized based on the quality of life in three domains.

Results: A result reveals a significant difference between nurses' quality of life and their coping abilities post-program implementation ($P=0.001$) compared to the pre-intervention level. A positive significant correlation coefficient between nurses coping strategies and their quality-of-life post-program implementation ($r=0.40$, $p<0.05$).

Conclusion: This study concluded that the coping strategies program was effective, and its results had a drastic improvement in coping abilities and quality of life for nurses working at night shift. The study suggested establishing continuous educational programs for nurses working on the night shift at the emergency clinic unit about coping strategies & its effect on their quality of life.

Keywords: Coping strategies program, emergency clinic, quality of life, night shift

1. Introduction

Nowadays, almost a fifth of the worldwide workforce is engaged in shift work. In the health care system, shift work is considered necessary and indispensable to ensure continuity of care in hospitals and residential facilities. Approximately one-fourth of the workforce in hospitals works unusual hours (away from the traditional diurnal work period) (Peplonska, Bukowska, & Sobala 2015). Rotating and scheduling are the main characteristics of shift work, and nurses are mostly locked into schedules that provide 24-hour care and include night shift work. Nightshift is a term that is defined as work performed after 6 pm and before 6 am, the next day, "Shift workers are creators and victims at the same time" of the new work organization (Ferri et al., 2016).

Shift work, and night shift, in particular, is one of the most frequent reasons for the disruption of circadian rhythms, causing significant alterations of sleep and biological functions. Therefore, the night activity will be out of phase with the circadian body temperature and other coupled rhythms. Emergency clinic nurses were vulnerable

to a stressful environment because of the complex nature of the patient's health problems requiring extensive use of very sophisticated technology (Costa, Anelli, Castellini, Fustinoni, & Neri, 2014).

Research in the night shift has identified many stressors depending on the area of specialty. These include the poor working relationship between nurses and other health team members, demanding communication and relationship with patients' relatives, emergency cases, high workload, understaffed, and lack of support or feedback from their seniors. Working in night shifts creates difficulties in family life and restricts nurses' social and leisure activities. Mainly, working at night, either on permanent or rotating shifts, often produces discordance with the spouse's working hours and free time (Yuan et al., 2011).

Numerous studies have shown high amounts of psychological distress in nurses and other healthcare professionals working in various situations. Night shift causes an imbalance between desired lifestyle and work, women have a significant role in domestic life, and they compromise their sleep to undertake the domestic chores such as care for their children and family chores. Find out whether night shift affects nurses' social aspect or not 60%

¹Corresponding author: Heba A. Abd Elkader

of respondents stated that their social life is sometimes affected, 33% stated that always their social life is affected that is mean 93% of the nurses are affected and 7% not affected. The aspect of social life involves nurses' families, work relationships, and other social groups (Buyukhatipoglu, Kirhan, & Vural, 2010).

Night shift has physical, psychological, and social effects on individuals' quality of life, including nurses. The long hours that they work interfere with their health, and their safety is compromised. Studies have shown that night shiftwork can negatively impact job performance, sleep, physical and emotional health, social life, family life, drug use, and level of job-related stress). Also, shiftwork for nurses disrupts both social and domestic lifestyle, which is a significant consequence of shiftwork, especially with maternal employment that may have some adverse influences on their young children's cognitive and behavioral outcomes (Han, 2015).

Nurses play essential roles in ensuring quality and safe patient care because they are considered the most significant healthcare workforce. However, nurses are challenged by work pressure, exposure to risks, moral and ethical distresses, demands of patients, and significant others, which pose a threat to their well-being. Nurses also need to carry out other responsibilities, such as professional and continuing education and workplace management; thus, some nurses struggle to create and maintain a balanced personal and professional life (Cruz, 2017).

Quality of life (QOL) is a very complicated and abstract concept. Most believe that the quality of life means the suitability of the material circumstances and people's perception. Quality of life is a broad multidimensional concept that usually includes subjective evaluations of life's positive and negative aspects. WHO defines this concept as the "individuals' perceptions of their position in life in the context of the culture and value systems in which they live and about their goals, expectations, standards, and concerns" (Geiger-Brown et al., 2016).

Nurses' health and well-being are an essential concern because health is a significant dimension of social wellness. Healthy nurses can significantly enhance the efficiency and effectiveness of health care systems because good health is vital to task performance. Specifically, nurses who experienced pain and depression reported decreased job efficiency, which resulted in increased patient falls, medication errors, and low quality of patient care. Thus, ensuring nurses' excellent health is essential not only for them but also for patients (Rahman, Abdul-Mummin, & Naing, 2016). Efforts to promote adaptation to shift work and long work hours include strategies for employers and strategies for workers. Most suggestions to date have written for shift work, but they may also be relevant for long work hours. A sampling of strategies suggested in the literature for shift work includes designing new work schedules and rest breaks during work, altering circadian rhythms with bright light or blue light, optimally timing physical activity, or other work demands (Al-Ameri, 2014).

Moreover, improving physical conditioning, using caffeine, planning dietary regimens, stress reduction, support groups, and family counseling. Behavioral and administrative strategies were considering pharmacologic aids since the stimulants and sedatives can be addictive, and questions remain about the safety and effectiveness of long-term use. Taking naps during work is another intervention that has been associated with improvements in alertness (Costa et al., 2014).

Coping means investing one's own conscious effort to solve personal and interpersonal problems to master, minimize, or tolerate stress and conflict. Coping is defined as the thoughts and behaviors mobilized to manage internal and external stressful situations. It is a term used distinctively for conscious and voluntary mobilization of acts, different from 'defense mechanisms' that are subconscious or unconscious adaptive responses, both of which aim to reduce or tolerate stress. The coping mechanisms are commonly termed as coping strategies or coping skills. The term coping refers to adaptive (constructive) coping strategies, that is, strategies that reduce stress (Jathanna & D'Silva, 2014). The two main categories of coping strategies are emotion-focused coping and solution-focused coping (Kato, 2015).

Coping strategies refer to the specific efforts, both behavioral and psychological, that people employ to master, tolerate, reduce, or minimize stressful events. Two general coping strategies have been distinguished: Problem-solving strategies are efforts to do something active to alleviate stressful circumstances, whereas emotion-focused coping strategies involve efforts to regulate the emotional consequences of stressful or potentially stressful events. Research indicates that people use both types of strategies to combat stressful events (Folkman & Lazarus, 1980). The predominance of one type of strategy over another is determined, in part, by personal style (e.g., some people cope more actively than others). Also, by the type of stressful event; for example, people typically employ problem-focused coping to deal with potential controllable problems such as work-related problems and family-related problems, whereas stressors perceived as less controllable, such as certain kinds of physical health problems, prompt more emotion-focused coping (Coppens, de Boer, & Koolhaas, 2010).

2. Significance of the study

Vitale et al. (2015) reported that nightshift nurses have rapidly increased worldwide over the last decades, and nurses work the long-hour night shift have become under conditions of intense stress. Also, they often suffer from excessive workloads, minimal social support, and low quality of life. Long-term night and shift work in nurses becoming more pessimistic and less vicarious as their training progresses, and might be associated with many health-related problems like fatigue, sleep problems, anxiety, and difficulties in maintaining regular lifestyles

Nurses are often exposed to challenging situations in the clinical area, which may negatively impact the quality of life (QoL) of nurses to develop a positive outlook

towards life, improve overall health, achieve high productivity and low-stress levels, and acquire effective coping skills. This study can help emergency clinic nurses working on the night shift by providing them with different coping strategies that can increase their coping abilities and improve their quality of life. This study focused on the effect of coping strategies on quality of life among emergency clinic nurses working at night shift.

3. Aim of the study

Evaluate the effect of coping strategies program on quality of life among emergency clinic nurses working at night shift.

3.1. The hypotheses of the study

- Night shift nurses' coping abilities will be significantly improved after implementing the coping strategies compared to their pre-implementation level.
- Night shift nurses' quality of life will be significantly improved after implementing the coping strategies compared to their pre-implementation level.

4. Subjects and Methods

4.1. Research design

Quasi-experimental (pre/post) research design was used to complete this study. Quasi-experimental research is research that resembles experimental research but is not true experimental research. Although the independent variable is manipulated, participants are not randomly assigned to conditions or orders of conditions (Cook & Campbell, 1979).

4.2. Study setting

The study was conducted at the Emergency Clinic affiliated to Benha University Hospital, located on the ground floor of the out-patient building that includes one room divided into diagnostic and examination areas from December 2018 to May 2019.

4.3. Subjects

A convenience sample was used to achieve the aim of this study. It includes all males and females' nurses from Emergency Clinic (60 nurses) who worked at night shift during the study period (8 months). Also, they work in the night shift for more than one year.

4.4. Tools of data collection

Three tools were used for data collection.

4.4.1. Structured Interviewing Questionnaire

The researchers developed it to assess a nurse's socio-demographic data. It includes two parts to collect data: First part concerned with study subjects' socio-demographic characteristics as age, gender, marital status, occupation, and educational level. The second part concerned health status data as night shift affects health, health problems, and occupational injuries during working.

4.4.2. Ways of Coping Scale

It was adopted from *Folkman and Lazarus (1985)*. It measured the coping abilities of nurses working at night shift. It consists of 45 items comprising eight subscales as confrontive coping (six items), planful problem-solving (six items) are both problem-focused coping strategies. Besides, distancing (four items), self-controlling (six items), seeking social support (four items), escape/avoidance (five items), accepting responsibility (six items), and positive reappraisal (eight items).

Scoring system

These items were scored as responses against a three-point Likert scale ranged from (3) always, (2) sometimes, and (1) never. The total score for coping behavior strategies for nurses ranged from 45-135 points. They were expressed as follow; Negative use coping behavior strategies: score <60% (equal 45-<81points), positive use coping behavior strategies: 60%-<75% (with a score of 81-<102 points), and highly positive uses coping behavior strategies: ≥ 75 (equal 102-135 points).

4.4.3. Quality of Life Scale

It was adapted from *WHOQOL (1995)* to measure the quality of life for nurses working at night shift. It consisted of (34) items categorized based on the quality of life in three domains: Physical health (14) items to assess energy and fatigue, mobility, pain, and discomfort, sleep and rest and work capacity. Psychological health (12) items to assess bodily image, appearance, negative feelings, positive feelings, self-esteem thinking, learning, and concentration. Social relationships were (8) items to assess personal relationships, social support, and sexual activity. It is collected pre-post-test.

Scoring system

The score of the response answers was ranged from (3) always, (2) sometimes, and (1) never. The total score for quality of life for nurses ranged from 34-102 points was expressed as follow; low quality of life: Score <60% (equal <61 points), moderate quality of life: Score 60-<75% (equal 61-<77 points), and high quality of life: Score $\geq 75\%$ (equal 77-102 points).

4.5. Procedures

Face and content validity were done by three experts from Medical-Surgical Nursing, Psychiatric Nursing, and Community Health Nursing. There were no modifications to study tools. Accordingly, the reliability of the tools tested using the test-retest method. It proved to be high with Cronbach's alpha reliability coefficients. The first tool's internal consistency was 0.89, while the internal consistency of the second tool was 0.87 and finally was 0.91 for the third tool.

Ethical considerations: Verbal consent was obtained from nurses to participate in the study. During the initial interview, the purpose of the study was explained. The nurses were reassured that their participation was voluntary. They had the right to withdraw from the study at any time if

they want and without any penalties. All information would be confidential.

A pilot study was conducted on 10% (6 nurses) of the total number of subject (60) emergency clinic nurses. It was done to assess the tools, clarity, objectivity, and time required to fill the tools (that approximately ranged from 25-30) minutes, and the research process feasibility. The nurses who were included in the pilot study were not excluded from the main study sample, where no modification was done.

The fieldwork: An official permission for data collection and the educational program's implementation will be obtained from the dean of Benha Faculty of Nursing and hospital administrative personnel. The researchers interviewed available nurses to explain the study's aim and take their approval to participate in the study before data collection. The study lasted approximately eight months from the beginning of October 2018 to the end of May 2019. The study conducted through five phases include the following:

Preparation Phase: In this phase, the researchers reviewed the currently available national and international literature and explored the internet to develop the study tools for data collection and design the coping strategies program. Finally, the tools were revised and modified.

Assessment phase: The researchers met emergency clinic nurses and explained the study's aim and nature, and the method of filling the questionnaires. This meeting was done individually or through group meetings. The questionnaires were distributed by the researchers to the participated emergency clinic nurses before implementing the program during August 2018, to fill it during their work night shifts, which determined before with head nurse of each unit according to the type of work and their workload to gain their support and ensure the continuity of patient care.

Planning phase: Based on a review of the literature, sample features, and the results obtained from the assessment phase, the researchers designed the coping strategies program. The program's general objective was to improve coping abilities and quality of life for nurses working at night shift. The coping strategies program content includes health problems with night shifts, the meaning of coping and coping strategies, importance of coping strategies, uses of coping strategies, coping strategies methods, ways of coping (strategies and factors), and the effect on nurses' quality of life.

Implementation Phase: At first, the researchers announced the program in the study setting to assess subjects' readiness and encourage their participation in the study. After that, the researcher explained the study's aim to emergency clinic unit nurses working at night shift to cooperate and agreed to attend the educational program. They also agreed to provide the researchers with the learning room in their units for the same purpose. The coping strategies program was developed based on determined needs and a relevant review of the literature. The educational booklets were designed to provide the

nurses with an opportunity to develop their coping abilities, which improve their quality of life.

Different educational strategies, methods of teaching, media, and evaluation methods were selected to achieve the objectives and deliver the contents of the program. Pre-test sheets were distributed by the researcher and filled by nurses through 10 sessions to test the way of coping and nurses' quality of life. The coping strategies program was carried out throughout ten sessions. Each session included six nurses. After taking permission, the study's aim and ethical consideration were explained, and the researchers explained ways of coping strategies as an eight-factor solution. They included: confrontive coping, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, planful problem solving, and positive reappraisal.

The researchers met nurses for two days per week (Tuesday and Thursday). The sessions were achieved by using available resources, relevant content, and educational strategies for each session. The teaching methods used were such as lectures, group discussion, and brainstorming. The program's course content took about ten days—one day for orientation and the other nine days for the course content of the program. The duration of each session was (30-40) minutes, depending on the workload.

The sessions included periods of discussion according to their achievement, progress, and feedback. It started at 12–2 pm. The educational booklets were prepared by researchers and distributed to nurses on the first day of the program. An orientation to the training sessions and their aims took place at the beginning of each session. Feedback was given at the beginning of each session about the previous one and the end of each session about the current session—the program's real examples (situations) given to the nurses to write their suggestions for alternative solutions.

Evaluation phase: The coping strategies program's effect was evaluated, using the same tools used before the program. One month after the last session, the researchers gave the post-test to detect the improvement of nurses' coping abilities and quality of life. This phase of the procedure was also taking ten sessions for all nurses' groups, 20-25 minutes for each. The data were analyzed and interpreted, and clinically evaluated for a comprehensive discussion of the study's data analysis results.

4.6. Data analysis

Data verified before computerized entry. The Statistical Package for SotookSPSS version 20.0) was used for that purpose, followed by data analysis and tabulation. Descriptive statistics were applied (e.g., frequency, percentages, mean, and standard deviation). Test of significance (Chi-square test) was used to compare nurses' mean scores through study phases. For testing the study hypothesis, the Pearson correlation coefficients were used. A statistically significant level is considered when p-value

≤ 0.05, and a highly statistically significant level considered when p-value ≤ 0.01.

5. Results

Table 1 shows that about three-quarters of studied nurses (73.3%) ages from 21-30 years, about half of the nurses, 53.3% were males. As regarding occupation, about three-quarters of the sample (73.4%) were registered nurses. While about two-thirds of the nurses were 66.7% had technical institute diploma.

Table 2 illustrates the distribution of nurses' health status. There is a highly statistically significant difference between pre-and post-program implementation regarding the night shift's effect on the nurses' health, health problems experienced, and occupational injury.

According to research hypothesis No. 1. Night shift nurses' coping abilities will be significantly improved after implementing the coping strategies compared to their pre-implementation level. Table 3 shows a statistically significant difference between the nurse's ways of coping pre-and post-program implementation in all items except blame me for being too emotional (p >0.05).

Figure 1 illustrates positive ways of coping among 73.6% of emergency clinic nurses working at night shift after implementing coping strategies program.

According to research hypothesis No. 2. Night shift nurses' quality of life will be significantly improved after implementing the coping strategies compared to their pre-implementation level. Table (4) demonstrates a highly statistically significant difference in the quality of life in three domains, physical health, social relationships, and psychological health among emergency clinic nurses working at night shift (P ≤ 0.001) post-program implementation.

Figure 2 shows the percentage distribution of total nurses' quality of life throughout the program phases, where 71.2% of emergency clinic nurses working at night shifts show high quality of life after implementing coping

strategies program compared to 14% before program implementation.

Table 5 shows a non-significant association between the nurse's health status and their coping preprogram implementation.

Table 6 shows a non-significant association between nurse's health status and their coping post-program implementation in all items except health problems (X²= 3.36, p=>0.05).

Table 7 shows a positive significant correlation coefficient between nurses' coping strategies and their quality-of-life post-program implementation (r= 0.40, p<0.05).

Table (1): Frequency and percentage distribution of nurses' socio-demographic data (n=60).

Socio-demographic	N	%
Age		
21-30	44	73.3
31-40	16	26.7
≥40	0	0.0
Mean±SD	42.6 ± 8.5	
Gender		
Male	32	
Female	28	
Marital status		
Married	22	36.7
Single	32	56.3
Widow	6	10.0
Divorced	0	0.0
Occupation		
Head of the department	12	20.0
Matron	2	3.3
Registered nurse	44	73.4
Assistant nurse	2	3.3
Education		
Technical institution	40	66.7
Bachelor in nursing	12	20.0
Others	8	13.3

Table (2): Differences of nurses' health status pre-and post-program implementation (n=60).

Items	Pre-program		Post-program		X ²	P
	N	%	N	%		
Night shift affect nurse's health						
Yes	44	73.3	12	20.0	3.13	<0.002
No	10	16.7	40	66.7		
Do not know	6	10.0	8	13.3		
health problem the nurse currently experience						
No problem	0	0.0	34	56.7	2.74	<0.006
Frequent headaches	22	36.7	22	36.7		
Backache	10	16.7	4	6.6		
Persistent tiredness	10	16.7	0	0.0		
Feet diseases	4	6.7	0	0.0		
Decrease in sleep	14	2.23	0	0.0		
Occupational injuries during working						
No	0	0.0	32	53.4	3.68	<0.001
Needlestick	10	33.3	14	23.3		
Muscle tiredness	20	66.7	14	23.3		

Table (3): Differences in the mean score of nurses' coping abilities' pre-and post-implementation of the coping strategies' program (n=60).

Coping strategies	Pre-program	Post-program	T	p
	Mean ± SD	Mean ± SD		
Confrontive coping				
Become very tense	1.03±0.69	2.93±0.92	3.63	<0.001
Focus on the problem and see how I can solve it	1.30±0.87	1.96±0.80	3.08	<0.004
Think about the good times I had	1.10±1.02	1.93±0.98	5.00	<0.001
I felt Go for a walk	0.90±0.92	2.06±0.73	5.43	<0.001
Blame myself for procrastinating	1.00±0.74	2.00±1.01	3.87	<0.001
Watch TV	1.50±0.73	2.33±0.89	3.42	<0.002
Planful problem-solving				
Become preoccupied with aches and pains	1.90±0.84	1.03±0.76	3.97	<0.001
Blame myself for having gotten into the situation	1.03±0.66	1.90±1.02	3.97	<0.001
Blame myself for not knowing what to do	1.76±0.72	2.30±0.98	2.38	<0.05
Think about how I solved similar problems	1.96±0.76	1.10±0.84	3.71	<0.001
Come up with several different solutions to the problem	0.93±0.82	1.86±1.13	3.39	<0.002
Feel anxious about not being able to cope	1.86±0.86	1.20±1.09	2.87	<0.007
Distancing				
Try to go to sleep				
Treat myself a favorite food or snack	1.50±0.62	2.46±0.68	6.54	<0.001
Think about how I solved similar problems	0.96±0.76	1.90±1.02	0.46	<0.001
Blame myself for being too emotional	1.40±0.93	1.63±0.80	0.96	>0.05
Self- controlling				
Go out for a snack or meal	2.03±0.85	1.50±0.97	2.33	<0.05
Buy myself something	1.40±0.77	2.46±0.86	4.75	<0.001
Determine a course of action and follow it	1.10±0.92	1.76±1.10	2.48	<0.05
Worry about what I am going to do	1.23±0.85	1.86±0.81	3.35	<0.002
Schedule my time better	1.63±1.03	2.26±0.73	2.78	<0.009
Work to understand the situation	1.83±1.08	1.10±0.92	2.89	<0.007
Seeking social support				
Freeze and not know what to do	1.56±0.81	2.00±0.87	2.21	<0.05
Take corrective action immediately	1.86±0.97	2.53±0.73	3.34	<0.002
Think about the event and learn from my mistakes	2.40±0.81	1.96±0.71	2.14	<0.05
Try to be with other people	1.90±0.92	2.40±0.85	2.54	<0.05
Escape/avoidance				
Visit a friend	1.40±0.72	1.86±0.62	3.29	<0.003
Go to a party	1.26±0.94	2.06±1.08	3.07	<0.005
Spend time with a special person Get angry	1.03±0.76	1.86±0.89	3.97	<0.001
Wish that I could change what happened or how	1.03±0.85	2.06±0.78	4.26	<0.001
Tell myself that it will never happen again	1.83±0.98	2.40±0.81	2.66	<0.05
Accepting responsibility				
Focus on my general inadequacies	1.36±0.71	2.06±0.98	2.97	<0.006
Analyze the problem before reacting	1.56±0.67	2.03±0.88	2.04	<0.05
Go for a walk	1.36±0.88	1.80±0.84	2.44	<0.05
Get angry	1.86±0.93	1.36±0.85	2.54	<0.05
Adjust my priorities	1.60±1.03	1.96±0.92	2.84	<0.008
See a movie	1.96±0.92	2.56±0.67	3.16	<0.004
Positive reappraisal				
Get control of the situation	2.10±1.02	2.63±0.61	2.38	<0.05
Make an extra effort to get things done	1.43±0.72	2.46±0.73	6.36	<0.001
Outline my priorities	2.36±0.76	1.86±1.07	2.47	<0.05
Take some time off and get away from the situation	1.20±1.03	0.56±0.67	2.99	<0.006
Take it out on other people	1.36±0.61	2.23±0.89	5.06	<0.001
Use the situation to prove that I can do it	1.36±0.66	2.40±0.67	5.86	<0.001
Try to be organized so I can be on top of the situation	0.93±0.82	1.83±0.91	3.65	<0.001
Do what I think is best	0.96±0.71	1.70±1.02	3.34	<0.002

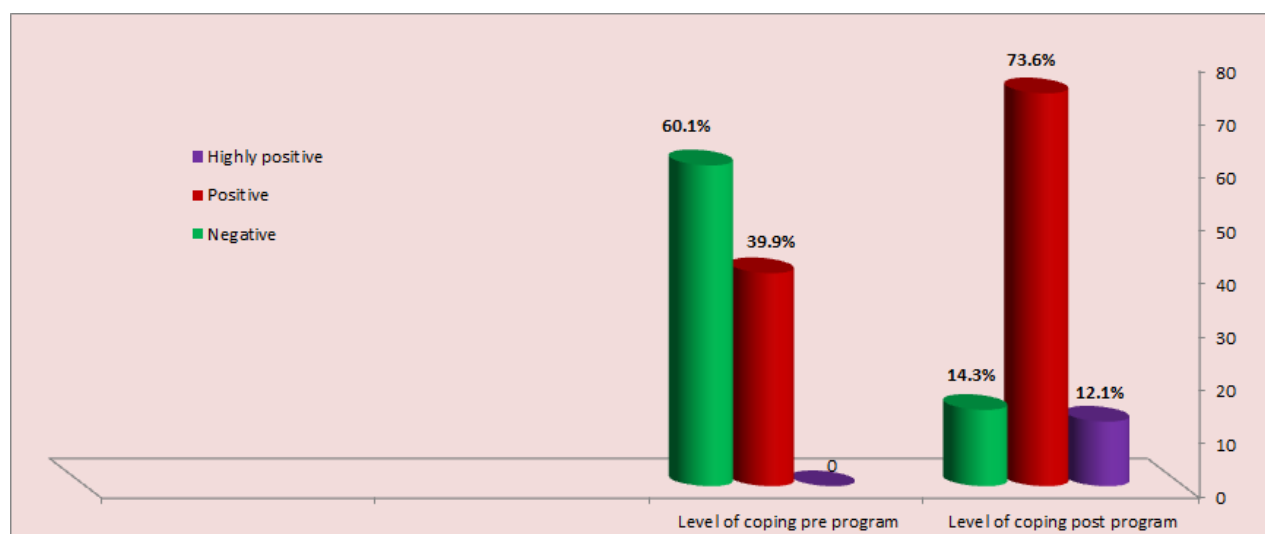


Figure (1): Total level of Nurses' coping abilities through the program.

Table (4): Differences of mean score nurses' quality of life pre-and post-implementation of the coping strategies (n= 60).

Quality of life domains	Max score	Pre-program Mean \pm SD	Post-program Mean \pm SD	Paired t-test	P-Value
Physical health	33	14.36 \pm 2.69	19.65 \pm 2.28	46.58	<0.001
Social relationships	48	18.03 \pm 4.23	34.20 \pm 2.34		
Psychological health	21	5.16 \pm 2.66	16.40 \pm 1.99		
Total	102	37.56 \pm 7.20	70.25 \pm 7.87		

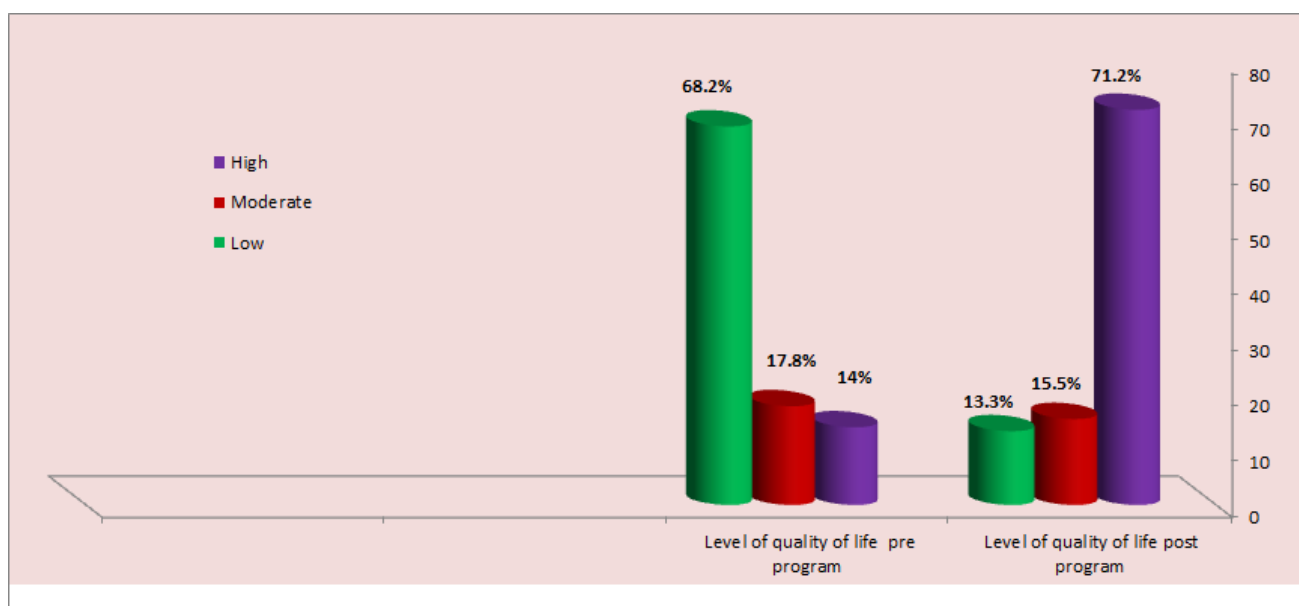


Figure (2): Percentage distribution of total nurses' quality of life throughout the program phases.

Table (5): Relation between nurses' health status and their coping preprogram implementation (n=60).

Health status	Coping						X ²	P
	Negative		Positive		High Positive			
	N	%	N	%	N	%		
Effect of the night shift on health								
Yes	14	70.0	30	75.0	0	0.0	0.12	>0.05
No	4	20.0	6	15.0	0	0.0		
Do not know	2	10.0	4	10.0	0	0.0		
Health problem								
Frequent headache	6	30.0	16	40.0	0	0.0	1.12	>0.05
Backache	2	10.0	8	20.0	0	0.0		
Persistent tiredness	4	20.0	6	15.0	0	0.0		
Feet disease	2	10.0	2	5.0	0	0.0		
Decrease sleep	6	30.0	8	20.0	0	0.0		
Occupation injury								
Needlestick	4	20.0	16	40.0	0	0.0	1.20	>0.05
Muscle tiredness	16	80.0	24	60.0	0	0.0		

Table (6): Relation between nurses' health status and their coping post-program implementation (n=60).

Health status	Coping						X ²	P
	Negative		Positive		High Positive			
	n	%	N	%	N	%		
Effect of the night shift on health								
Yes	4	100.0	2	8.3	6	18.8	10.82	<0.05
No	0	0.0	16	66.7	24	75.0		
Do not know	0	0.0	6	25.0	2	6.2		
Health problem								
No problem	4	100.0	14	58.3	16	50.0	3.36	>0.05
Frequent headache	0	0.0	10	41.7	12	37.5		
Backache	0	0.0	0	0.0	4	12.5		
Persistent tiredness	0	0.0	0	0.0	0	0.0		
Feet disease	0	0.0	0	0.0	0	0.0		
Decrease sleep	0	0.0	0	0.0	0	0.0		
Occupation injury								
No injury	0	0.0	10	41.7	22	66.7	9.06	<0.05
Needlestick	4	100.0	6	25.0	4	12.5		
Muscle tiredness	0	0.0	8	33.3	6	18.8		

Table (7): Correlation between nurses coping strategies and their quality-of-life pre and post-program implementation (n=60)

Quality of nurses' life	Coping strategies			
	Pre-program		Post-program	
	r	P	r	P
Pre-program	0.01	>0.05	0.40	<0.05
Post-program				

6. Discussion

Interest in emergency clinic nurses' nightshift-related stress and its impact on nurses' well-being, quality of life, and nursing outcomes has increased in recent years. Work-related stress is a significant health problem often faced by nurses working in a clinical setting. Nurses are often exposed to challenging situations in the clinical area. Nurses are confronted with different work tasks and working hours, nightshifts, working conditions, understaffing. Nurses' reactions to stressors can be physiological, psychological, and behavioral. These stressors could lead to stress-related to mental and physical diseases, which decrease well-being and QoL (Portero & Vaquero, 2015).

One's degree of adaptation varies according to how one perceives and copes with a stressful situation. The inability of an individual to cope effectively may result in psychological (e.g., anxiety and depression) and psychosomatic symptoms (e.g., headaches, nausea, and sleep problems), which may negatively impact the QoL of nurses and eventually leave adverse effects on the quality of nursing care they provide (Naz, Hashmi, & Asif, 2016). This study aimed to evaluate the effect of coping strategies program on quality of life among emergency clinic nurses working at night shift.

About socio-demographic data, the current study shows that about three-quarters of nurses aged from 21 to 30 years old. This finding may be related to the difficulties in working during night shifts and the physical and psychological stress that may result from night shifts for

older nurses. The study finding is supported by *Al-Ameri* (2016), whose study was about "Sources of work-related stress among nurses." The study revealed that about three-quarters of his study sample were aged from 21 to 40 years old. However, the study is incongruent with *Madide* (2003), whose study was about "Effects of night shift schedules on nurses working in a private hospital," who reported that about half of his study sample were middle-aged between 31-40 years old.

As regard gender, more than half of the nurses in this study were males. This finding may be related to the difficulties that face the female nurses in working at night shifts due to her familial and social responsibilities so that males are more suitable to work at night shifts. The study is congruent with *Heidari, Tabrizi, Elekaei, and Faramarzi* (2015), whose study was about "The effects of shift work on marital satisfaction." The study shows that about three-quarters of their study group were males, and they can afford the consequence of night shifts on their familial and social responsibilities than female nurses.

Concerning the study group's level of education, it found that about two-thirds of nurses had a technical institute diploma, which means two years after secondary school. This finding may be due to the Bachelor, and highly educated nurses occupy an administrative position like matrons or heads of the departments who usually work at morning shifts. *Al-Ameri* (2016) supported this result, whose study was about "Sources of work-related stress among nurses." The study revealed that about three quarters had technical institute diploma and secondary school diploma in nursing but is not supported by *Jabbarzade* (2017), whose study was about "Effect night shift work for nurses and midwives," who revealed that all nurses were bachelor nurses because the standard level of education is Bachelor. There are no nurses who have a secondary school diploma or technical institute diploma.

The current study also reveals a statistically significant difference between nurses' health status pre- and post-implementing the program regarding nurses' health status working at night shifts. Most nurses had significant problems such as frequent headaches, backache, persistent tiredness, feet disease, and sleep problems pre implementing the program whenever they decreased after the program with statistically significant differences. This finding may be related to increasing knowledge about health problems and improved coping strategies to deal with these problems.

This study is congruent with *Nasrabadi, Lipson, and Emami* (2004), whose study was about "Professional nursing in Iran," and revealed a statistically significant difference in health problems pre- and post-implementing of the educational program. The study mentioned that night working's physical effects included chronic headaches, weight loss, chronic fatigue, skin disorders, sleep disorders, taking frequent naps during the day, and gastrointestinal problems. The study also evidenced that sleeping disorders, anxiety, inactivity, need for hypnotic drugs, and accuracy and concentration reduction may also result from night

shifts. Some of these problems significantly decreased after implementing a coping strategies program.

Regarding nurses' ways of coping pre- and post-implementing the program, the study revealed a statistically significant improvement in nurses' way of coping with night shifts after the program. From the researchers' point of view, this may be due to increasing knowledge and skills about coping strategies, setting priorities, and organizing their work. They become able to think better to solve a problem, improve the feeling of anxiety, tense and anger, modifying their sleep pattern and circadian rhythm, learning skills for adequate dealing with problems, and finding solutions to such problems. This study is consistent with *Nasrabadi et al.* (2004), who revealed that nurses occupied with night shifts cope well with their life, social, emotional, and psychological problems after implementing an educational program.

The current study showed that nearly three-quarters of emergency nurses reported positive coping abilities after coping strategies implementation. This finding may be due to positive attitudes toward focused work strategies in coping with their daily work stressors after implementing coping strategies, leading to positive thinking and a positive outlook. This study is consistent with *Gholamzadeh, Sharif, and Rad* (2011), whose study was about "Sources of occupational stress and coping strategies among nurses who are working in admission and emergency department." The study reported that most nurses are trying to adapt to their work tensions by increasing knowledge and experience and relying on their abilities. Moreover, *McTiernan and McDonald* (2015) indicated that psychiatric nurses employ diverting attention and positive attitudes toward work strategies in coping with their daily work stressors. Conversely, *White* (2006) contradicted this result by reporting that the least coping strategies often used by the psychiatric nurses working on locked units were diverting attention strategy. These findings are supporting the first research hypothesis.

Regarding quality-of-life domains, the present study revealed a highly statistically significant difference in the quality of life in three domains, physical health, social relationships, and psychological health among the nurses working at night shift. This result congruent with *Cruz, Cabrera, Hufana, Alquwez, and Almazan* (2018), who revealed that the nurses presented good QOL scores in all domains of the quality of life after coping strategies adoption. The study is congruent with *Yuan et al.* (2015), whose study was about "Influences of-shift work on fatigue among nurses." The study showed that the quality of life was low before acquiring coping skills, whenever nurses had a high quality of life after learning and implementing coping strategies and skills. While *Dargahi, Changizi, and Jazayeri Gharabagh* (2012) incongruent with the current study, who reported that most nurses were unsatisfied with all components of their quality of life in working.

The current study also found more than two-thirds of emergency clinic nurses working at night shift reported high in the total level of quality of life after implementing the coping strategies program compared to more than two-

thirds who had low quality of life before the program implementation. The high nurses' quality of life can improve the quality of care provided and retention of the nursing workforce. This finding, according to some studies that found similar high QOL was reported among nurses working in Saudi Arabia (Ibrahim et al., 2016); Japan by Makabe, Takagai, Asanuma, Ohtomo, and Kimura, (2015). This finding contradicted with Vitale et al. (2015), who reported that about half of the nurses took place in their study have a poor and very poor quality of life that indicates an adverse impact of night shift upon the physical, psychological and social status of a large number of nurses working at night shift. These findings are supporting the second research hypothesis.

Regarding the relation between nurses' health status and their coping preprogram implementation, the current study shows a non-significant association. This finding may be related to lack of information and skills about coping strategies before implementing the program, inadequate adherence to coping strategies, and lack of training courses about coping mechanisms so that nurses cannot cope well, which is reflected negatively on their health status.

This study is in the same line with Pati Chandrawanshi and Reinberg (2001), whose study was about "Consequences and management of shift work," which revealed a non-significant relationship between health status and coping strategies pre implementing the program. They mentioned that nurses who work night shifts could not deal appropriately with their health problems such as headaches, backache, insomnia, anxiety, and stress because they lacked adequate coping strategies.

About the relation between nurse's health status and their coping post-program implementation, the current study shows a significant association in all items except health problems. This result may be interpreted that nurses improve their health status after implementing coping strategies. There is no relation between health problems and coping strategies because health problems require medical interventions and cannot only be managed by coping strategies and lifestyle modifications.

This study is congruent with Jabbarzade (2017), whose study was about "Effect night shift work for nurses and midwives." The study revealed a significant relationship between health status and coping strategies. Jabbarzade (2017) also reported a high number of studies that confirm that night working in unconventional hours is accompanied by a large number of physical and psychological damages. After implementing the educational program and adherence to coping strategies, the nurses improved their health status.

The current study shows a significant positive relationship between coping and quality of life among the studied nurses. This finding may be related to that nurses improve their quality of life when acquiring adequate knowledge and skills about coping strategies and how to deal with problems. This finding goes in the same line with Kelbiso et al. (2017), who reported that the respondents' work unit had a statistically significant association with quality of work-life among nurses.

The study is congruent with Al-Ahmadi (2018), whose study was about "Factors affecting hospital nurses' performance in Riyadh Region," who stated that nurses who work at night shifts and adhere to coping strategies could improve their quality of life. Because the ongoing educational activities and coping strategies for nurses help enhance practice relevant to their responsibilities, professional growth, and maintaining competency in their respective positions.

In summary, the study results revealed that about three-quarters of nurses aged from 21 to 30 years, more than half of nurses in this study were males, and about two-thirds of nurses had a technical institute diploma. Regarding nurses' health status working night shifts, there was a statically significant difference between nurses' health status pre- and post-implementing the program. Regarding nurses' quality of life pre-and post-implementing the program, there was a statically significant improvement.

The study also reveals a non-statistically significant association between nurse's health status and their coping preprogram implementation. Regarding the relation between nurse's quality of life and their coping post-program implementation, the current study shows a significant association between nurses' health status and coping except for health problems. Finally, regarding the correlation between nurses' coping strategies and their quality-of-life pre and post-program implementation, the study shows a positive correlation between the two variables post-program.

7. Conclusion

According to study results and research hypotheses, there was a statistically significant improvement in nurses' ability to cope with pre-and post-program implementation. Also, there was a statistically significant difference between nurses' quality of life pre-and post-program implementation.

8. Recommendations

This study recommended a continuous education program for nurses working at night shift about coping strategies and their effect on their Quality of life.

Further research

- Carrying out of health education program of this study for nurses on a large scale at the different health sectors.
- Encourage the nurses to join the individual sessions for coping and stress management to lessen and prevent work-related stress to improve nurses' Quality of life.

9. References

- Al-Ahmadi, H. (2018). Factors affecting the performance of hospital nurses in Riyadh Region, Saudi Arabia, *International Journal of Health Care Quality Assurance*, 22(1), 40-54. <https://doi.org/10.1108/09526860910927943>
- Al-Ameri, M. H. I. (2016). Sources of work-related stress among nurses, *Iraq National Journal of Nursing Specialties*, 27(35), 51-53.

- Buyukhatipoglu, H., Kirhan, I., & Vural, M. (2010).** Oxidative stress increased in healthcare workers working 24 h on-call shifts. *Am J Med Sci*, 340, 462-467. <https://doi.org/10.1097/maj.0b013e3181ef3c09>
- Cook, T. D., & Campbell, D. T. (1979).** *Quasi-experimentation: Design & analysis issues in field settings*. Boston, MA: Houghton Mifflin.
- Coppens, C. M., de Boer, S. F., Koolhaas, J. M. (2010).** Coping styles and behavioural flexibility: Towards underlying mechanisms. *Philos Trans R Soc Lond B Biol Sci.*, 365(1560), 4021-8. <https://doi.org/10.1098/rstb.2010.0217>
- Costa, G., Anelli, M. M., Castellini, G., Fustinoni, S., & Neri, L. (2014).** Stress and sleep-in nurses employed in “3 × 8” and “2 × 12” fast rotating shift schedules. *Chronobiology International*, 31(10), 1169-1178.
- Cruz, J. P. (2017).** Quality of life and its influence on clinical competence among nurses: A self-reported study. *Journal of Clinical Nursing*, 26(3-4), 388-399. <https://doi.org/10.1111/jocn.13402>.
- Cruz, J., P., Cabrera, D., N., Hufana, O., D., Alquwez, N., & Almazan, J. (2018).** Optimism, proactive coping, and Quality of life among nurses: A cross-sectional study. *The International Voice of Nursing Research, Theory, and Practical.* 27(9-10), 1723-2167. <https://doi.org/10.1111/jocn.14363>
- Dargahi, H., Changizi, V., & Jazayeri Gharabagh, E. (2102).** Radiology employees' Quality of work life. *Acta Med Ira*, 504, 250-6
- Ferri, P., Guadi, M., Marcheselli, L., Balduzzi, S., Magnani, D., & Di Lorenzo, R. (2016).** The impact of shift work on the psychological and physical health of nurses in a general hospital: A comparison between rotating night shifts and day shifts. *Risk Manag Healthc Policy*, 203-211. <https://doi.org/10.2147/RMHP.S115326>.
- Folkman, S., & Lazarus, R., S. (1985).** If it changes, it must be a process: A study of emotion and coping during three stages of a college examination. *J Pers Soc Psychol.*, 48(1), 150-70. <https://doi.org/10.1037//0022-3514.48.1.150>.
- Geiger-Brown, J., Sagherian, K., Zhu, S., Wieroniey, M. A., Blair, L., Warren, J., & Szeles, R. (2016).** Napping on the night shift: A two-hospital implementation project. *American Journal of Nursing*, 116(5), 26-33. <https://doi.org/10.1097/01.NAJ.0000482953.88608.80>
- Gholamzadeh, S., Sharif, F., & Rad, F., D. (2011).** Sources of occupational stress and coping strategies among nurses who are working in the admission and emergency department in hospitals affiliated to Shiraz University of Medical Sciences. *Iran J Nurs Midwifery Res*, 16, 41-46.
- Han, W., J. (2015).** Maternal nonstandard work schedules and child cognitive outcomes. *Child Development*, 76, 137-154. <https://doi.org/10.1111/j.1467-8624.2005.00835.x>.
- Heidari, Tabrizi, H., Elekaei, A., & Faramarzi, S. (2015).** Genre-based discourse analysis of wedding invitation cards in Iran. *Journal of Language Teaching and Research*, 6(3), 662. <https://doi.org/10.17507/jltr.0603.25>
- Ibrahim, N. K., Alzahrani, N. A., Batwie, A. A., Abushal, R. A., Almogati, G. G., Sattam, M. A., & Hussin, B. K. (2016).** Quality of life, job satisfaction, and their related factors among nurses working in king Abdulaziz University Hospital, Jeddah, Saudi Arabia. *Contemporary Nurse*, 52(4), 486-498. <https://doi.org/10.1080/10376178.2016.1224123>
- Jabbarzade, S. (2017).** *Effect of night shift work for nurses and midwives*, Iran, Dezfull; 5th ed. P. 171.
- Jathanna, P., N., & D'Silva, J. (2014).** Quality of life among nurses working in a different health care setting in the state of Karnataka, India. *CHRISMED J Health Res*; 1, 241-4. <https://doi.org/10.4103/2348-3334.142986>
- Kato, T. (2015).** Frequently used coping scales: A meta-analysis. *Stress Health*, 31(4), 315-23.
- Kelbiso, L., Belay, A., & Woldie, M. (2017).** Determinants of Quality of work life among nurses working in Hawassa Town Public Health Facilities, South Ethiopia: A cross-sectional study. *Nursing Research and Practice*. Article ID 5181676, 11 pages <https://doi.org/10.1155/2017/5181676>
- Madide, S. (2003).** Effects of night shift schedules on nurses working in a private hospital, South Africa. 1402-1408.
- Makabe, S., Takagai, J., Asanuma, Y., Ohtomo, K., & Kimura, Y. (2015).** Impact of work-life imbalance on job satisfaction and quality of life among hospital nurses in Japan. *Industrial Health*, 53, 152-159. <https://doi.org/10.2486/indhealth.2014-0141>.
- McTiernan, K., & McDonald, N. (2015).** Occupational stressors, burnout, and coping strategies between hospital and community psychiatric nurses in a Dublin region. *J Psychiatr Ment Health Nurs*, 22, 208-218. <https://doi.org/10.1111/jpm.12170>.
- Naz, S., Hashmi, A. M., & Asif, A. (2016).** Burnout and quality of life in nurses of a tertiary care hospital in Pakistan. JPMA. *The Journal of the Pakistan Medical Association*, 66(5), 532- 536.
- Nasrabadi, A. N., Lipson, J., G., & Emami, A. (2004).** Professional nursing in Iran: An overview of its historical and sociocultural framework. *J Prof Nurs*, 20(6), 396-402. <https://doi.org/10.1016/j.profnurs.2004.08.004>.
- Parent-Thirion, A., Vermeylen, G., & van Houten, G. (2016).** Fifth European working conditions survey. European Foundation for the improvement of living and working conditions. Available from: http://www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef1182en.pdf
- Pati, A., K., Chandrawanshi, A., & Reinberg, A. (2001).** Shift work: Consequences and management. *Current Science*, 81(1), 32-47
- Peplonska, B., Bukowska, A., & Sobala, W. (2015).** Association of rotating night shift work with BMI and

abdominal obesity among nurses and midwives, PLoS One; 10:e0133761. <https://doi.org/10.1371/journal.pone.0133761>

Portero de la Cruz, S., & Vaquero Abellán, M. (2015). Professional burnout, stress, and job satisfaction of nursing staff at a university hospital. *Revista Latino-Americana de Enfermagem*, 23(3), 543-552. <https://doi.org/10.1590/0104-1169.0284.2586>.

Rahman, H. A., Abdul-Mummin, K., & Naing, L. (2016). A study into psychosocial factors as predictors of work-related fatigue. *British Journal of Nursing*, 25(13), 757-763. <https://doi.org/10.12968/bjon.2016.25.13.757>

The World Health Organization Quality of Life Assessment (WHOQOL) (1995). Position paper from the World Health Organization. *Soc Sci Med*, 41, 1403-9.

Vitale, S., A., Varrone-Ganesh J, & Vu, M. (2015). Nurses working the night shift: Impact on home, family, and social life. *J Nurs Educ Pract*. 5, 70-78. <https://doi.org/10.5430/jnep.v5n10p70>

White, A., R. (2006). Perceived stressors, coping strategies, and burnout pertaining to psychiatric nurses working on locked psychiatric units. Master's Theses and Doctoral Dissertations.

Yuan, S.C., Chou, M.C., Chen, C.J., Lin, Y.J., & Chen, MC, et al. (2011). Influences of-shift work on fatigue among nurses. *J Nurs Manag*, 19, 339-345. <https://doi.org/10.1111/j.1365-2834.2010.01173.x>.