

# Impact of Night Shift and Training Development Factors on Performance of Professional Nurses in North West Bank Governmental Hospitals

Mr. Ahmad Ayed<sup>1</sup> Mrs. Ahida Saleem Thulth<sup>2</sup> Dr. Sumaya Sayej<sup>3</sup>  
1. Nursing department, Arab American University, Palestine  
2. Al-Watani Governmental hospital, Ministry of health, Palestine  
3. Nursing Department, Al-Quds University, Palestine

## Abstract

**Background:** Organizational factors are considered to be the cornerstone in achieving psychological and professional security at work, which in turn are positively reflected in job performance both quantitatively and qualitatively. **Aim of the Study:** The study aimed to assess night shift and education / training developmental factors on performance of professional nurses in north West Bank governmental hospitals. **Subjects and methods:** A quantitative descriptive study utilized stratified random sampling of 185 nurses. A self administered questionnaire was developed with a response rate of 97%. The questionnaire was validated by experts, and reliability was obtained by Cronbach's alpha coefficient was (0.86) Data were analyzed using SPSS. **Results:** The overall level of night shift factor affecting performance of professional nurses was high (79.0 %) and ; the education / training developmental factors moderate (68.8%) as perceived by nurses. It was found that there are significant differences at  $\alpha = 0.05$  between the total score of night shift and education / training developmental factors towards workplace in favor to Dr. Nazal Hospital. **Conclusion and recommendation:** The night shift and education/ training developmental factors affected the performance of the professional nurses. The findings of this study provide recommendations and suggestions to improve the performance of professional nurses in governmental hospitals such as: reduce the strain of long work hours on night shift and motivation t. Providing continuous professional development of nurses in service training program.

**Keywords:** night shift, education / training development, professional nurse, Performance.

## 1. Introduction

Within Palestinian health care many employees perform quality health care that helps to maintain or restore patient's health; however, far too many do not. Performance problems are reflected in a wide variation, like the effect of organizational factors that negatively affect the patient's satisfactions. A health care quality improvement is to maintain what is good about the existing health care system while focusing on the areas that need improvement. Improving the quality of care and reducing medical errors are priority areas for the Palestinian governmental hospitals (MOH report, 2011). There are many variations of health care system around the world; the goal for health care system according to the world health organization report (2011) is to improving performance and responsiveness to the expectation of the population. Health care systems are organizations established to meet the health needs of target populations; it is the diagnosis, treatment, and prevention of disease, illness, injury, and other physical and mental impairments in humans. Health care is delivered by practitioners in medicine, physicians, nursing, pharmacy, allied health, and other care providers. It refers to the work done in providing primary care, secondary care and tertiary care, as well as in public health (WHO report, 2011). Health care system in Palestine is a combined entity of all resources actors and institutions related to the financing regulation and provision of all activities whose primary intent is to improve or maintain health; it is an arrangement in which health care system is delivered (MOH report, 2011).

Nurses are health care professionals who focus on the care of individuals, families, and communities so they may attain, maintain, or recover optimal health and quality of life from conception to death WHO health report (2011). Nurses in the occupied Palestinian territory, work in a large variety of specialties where they work independently and as part of a team to assess, plan, implement and evaluate care (MOH report, 2011).

According to MOH Report (2011) nurses are the largest health care providers within governmental hospital, constituting (332) of those 24% professional nurses, in the north part of West Bank where they work in a variety of settings. Therefore it is important to highlight factors that affect their performance and most importantly the organizational factors. Organizational factors are linked to –day to- day environment where health workers carry on their duties (Awases, 2006) and their level of nursing performance may be affected by the following but not limited to; organizational factors work load, night shift work, availability of resources, education and training development and manager support which ultimately affects patient's satisfaction, organizational vision and mission and the health care situation in Palestine. Some of these factors are identified and selected for assessing their effect on nurses' performance. These factors were selected based on previous studies and literature review was found that more focus was on these factors in addition to the political situation

in Palestine plays a large role in these factors, such as increasing the demand for health insurance and dependence on international aid.

### **Effects of night shift on professional nurse's performance:**

Page (2004) found that night shift can affect nurses' performance & patient satisfaction, as for example, nurses who work at night or who rotate shifts make more error from fatigue than do nurses on other shifts, and the risk for error can increase by two to three times when nurses work 12.5 hr or more in succession Ohida, et.al. (2001) examined the influence of day, afternoon, night and rotating shifts on nurses job performance and stress, where the results indicated that job performances and satisfaction was less on a rotating roster than on a fixed roster. Although there has been a move towards studies of nursing turnover, there is still a general absence of research that attempts to associate perceptions of night duty with job satisfaction and ultimately staff turnover.

Researchers consistently identify a relationship between hours worked, nurse fatigue, and errors; with error rates doubling at 10 hours of work and tripling at 16 hours (Institute of Medicine (IOM), 2004; Rogers, et.al 2004). Fatigue is often characterized by a decreased ability to complete work and a subjective complaint of feeling tired. Inadequate rest, sleep loss, and shift work schedules often contribute to fatigue (IOM, 2004). Fatigue has been reported to produce slowed reaction time, omission errors, impaired problem-solving abilities and attention lapses (Van-Griever & Meijman, 1987). Furthermore, fatigue may diminish productivity and lead to errors and accidents

Akerstedt (1996) said that sleep is one of the main reasons why irregular hours cause ailments and disorders extended waking leads to tiredness and reduced functional capacity. After the first 24 hours without sleep the functional capacity may be halved and after two sleepless days, the functional capacity is at its lowest and risk of falling asleep is ever present. With prolonged exposure, the individual cannot manage to keep awake, and can't make complex decisions which require thinking. Allen (1999) non experimental research studies examined the effect of sleep on short term memory recall in day shift versus night shift nurses and found that there is no effect of lack of sleep on cognitive process of short-term memory recall.

Akerstedt et al.,( 2004) An increasing body of evidence exists related to fatigue, sleep deprivation, and the circadian time of day with their effects on performance and learning and memory function. Although little research has focused specifically on fatigue on hospital personnel and its relationship to medical error, studies outside the medical field demonstrate the potential link between fatigue and poor performance. Several behavioral studies have shown that the slow - wave activity achieved through sleep is strongly correlated with improved performance in tasks. There is also a strong relationship between memory consolidation and sleep. According to Dean, et al (2006) aging may also play a role when assessing the effects of sleep deprivation on performance. There is evidence to suggest that the aging process increases the physiological and cognitive effects of fatigue. Recent laboratory studies documented a decrease in performance in older workers on the night shift compared to a younger worker. Crofts (1999) found that the problem with a night shift work is that the human race is diurnal, who are functions during day time and night workers report a number of health problems. Grafts added, these negative effects have consequences not just for individual, but also for work place, as decreased alertness and reduced job performance that could endanger human lives and affect the quality of care at intensive care unit.

### **2.3.1 The Ergonomically Aspect of Shift –work (Circadian Rhythm):**

Akerstedt (1996) described the circadian rhythm is determined by the nucleus suprachiasmaticus in the hypothalamus. This structure regulates the physiology and psychology functions of the body such as body temperature. Body temperature is often used as an indicator for circadian rhythms, reaching its maximum at 17:00 hrs and its minimum at 05:00 hrs. The basic principle underlying the rhythm variations is catabolism (the breaking down and release of energy) and readiness for action during the day, and anabolism (regeneration) and rest during the night. According to Pheasant (1991) the word circadian comes from the Latin "circa dies" which means "about a day", "Circadian rhythms are partly driven by the internal "body clocks" and partly synchronized to the external world by cues known as zeitgebers (German: Ziet, time; Geber, giver). These rhythms are coordinated to allow for high activity during the day and low activity at night. Normally the body uses cues from its processes and from the environment such as clock time, social activities, the light / dark cycle, and meal times to keep the various rhythms on track. The shift-worker's temperature rhythm and other body rhythms get out of phase with the persons activity pattern. This disorientation can lead to feeling of fatigue and disorientation. "Jet lag" is a term, often used to describe these feelings.

Grandgean (1995) stated that the human organism was in its ergo tropic phase (geared to perform) in the daytime and in its trophotropic phase (occupied with recuperation and replacement of energy) during the night. Thus night worker does not-have the mood for performance, but in the relaxed phase of his cycle. Ergonomics is therefore faced with the problem of planning work schedules in such a way that shift-work does as little harm as possible to health and social life. Rodgers et al (1986) described the physiological processes that take place within the human body as biological rhythms. Biological rhythm refers to any cyclic change in the

level of a measure or chemical in the body. Adrenal corticoids or thyroid hormone, are examples of hormones that can cause changes in the body. Below is a list of circadian bodily functions that increase by day and decrease by night. Body temperature, Heart rate, Blood pressure, Respiratory volume, Adrenaline production, Excretion of 17-keto-steroids, Mental abilities Flicker-fusion Frequency of eyes and Physical capacity

Other time-keepers are changes from light to dark and vice versa, social contacts, work and knowledge of clock time. The most important function that is geared to circadian rhythm is sleep. It is said that sleep that is undisturbed either in quality or in quantity is a pre-requisite for health, well – being and efficiency ( Canadian Centre for Occupational Health and Safety (CCOHS) , 1998).

The disturbance of circadian rhythms can affect concentration, motivation, and reaction time, particularly at night. This combination can result in an increased risk of accidents and injury. Studies show that shift-workers' accident rates are more than day workers, the same or less. Thus, the findings do not conclusively indicate that night shift workers are more prone to accidents. There are also discrepancies with research on this issue because of the fact that working conditions are not the same on different shifts. For example, the nature of workload, the backup system available and the amount of supervision can make comparisons inaccurate. Nonetheless, lack of sleep heightens the decline in performance. When deprived of sleep the worker may not be fully aware that performance has deteriorated. Research has shown that the optimum mental performance level for workers occurs between 2 and 4 pm, maximum general awareness is between one, and 7 p.m. performance levels are lowest between 3:30 and 5:30am, (CCOHS, 1998 [www.ccohs.ca/oshanswers/work-schedules//shiftwrk.html](http://www.ccohs.ca/oshanswers/work-schedules//shiftwrk.html)).

### **2.3.2 Physiological factors- sleep affect on professional nurse's performance**

Akerstedt (1996 ) said that lack of sleep is one of the main reasons why irregular hours cause ailments and disorders. Extended waking leads to tiredness and reduced functional capacity. The effects are initially noticeable mostly if the individual is exposed for longer periods to a monotonous situation. After the first 24 hours without sleep. The functional capacity may be halved and after two sleepless days, the functional capacity is at its lowest and the risk of falling asleep is ever present. With prolonged exposure, the individual cannot manage to keep awake. Another aspect of tiredness concerns the ability to make complex decisions, which require thinking.

**Education and training development:** The education and training development among nurses are important, therefore, nurses working in hospital must generally be encouraged to participate in training and development programs (Bhaga, 2010). They must be empowered with information and skills to remove feelings of inadequacy, the shortage of the skills and information provided for professional nurses in health care system will affect their performance negatively and make them dissatisfied from their organizational policy.

### **Effects of education and training development on professional nurse's performance:**

Inadequate knowledge, skills and inappropriate attitudes can all form obstacles to good health care workers. Advances in insights into treatment and diagnosis, as well as changes in roles and responsibilities, require continuous professional development among health workers. In fact, a lifelong learning process must be developed at the start of a professional career in the health sector (WHO, 2006).

#### **2.4.1 Training:**

Training is generally focused on teaching staff specific skills and concepts or altitudes. Training serves to provide the nurse with specific skills or to reinforce previously learned behavior (Fottler et al., 1998).

#### **In – service training:**

In- service training is about facilitating learning and development of an employee while rendering a service to an organization (Booyens 1993).According to Swans Burg (1999) In service education provides learning experience in the work setting for the purpose of refining new skills.” In an organization, managers and supervisors are responsible for developing employee’s potential and abilities to perform, and helping them adjust to rapidly changing Job requirement. Supervisors, therefore, should continuously assess gaps and the potential abilities of their subordinates in order to provide planned in- service training to correct matters (Booyens 1993, price 2000). It is concerned with teaching staff skills, facts, attitudes, behavior and concepts through internally generated efforts Fottler et al (1998).

#### **2.4.3 Orientation training:**

According to Libler & Mc Connell, (2004) each newly appointed employee invaded in an orientation programmed. Ideally the formal orientation is brief, highly focused and completed on the worker’s first day. The purpose is to introduce the staff member to the moves, behaviors and expectations of the organization.

#### **Continuous education**

Continuous education programs in organization are aimed at updating employee’s knowledge and competency in order to improve their ability to analyze complex health problems, deliver and maintain health services and sustain professional inter personal relations ships ( Booyens 1993; swans burg 1999). According to Booyens ( 1993) and Swans Burg (1999) , continuous education is usually part of self development responsibility to ensure that their staff are kept up-to- date with new development. This may take the form of workshops,

conferences seminar, self learning modules, individual studies or degree courses. Continuing education is professional learning experiences designed to augment knowledge, skills and attitudes of nurses and there by enrich the nurse's contribution to quality health care and their pursuit of professional career Goals. Continuing education usually relies on external training resources to accomplish. Its objectives ( liebler & Mc Connell, 2004). Kelly (2007) stated that continuing development of one's professional skills and knowledge is an empowering experience, preparing the nurse to make decision with the support of an expanding body of knowledge. Mc Connel (2003) argue that in addition to increasing knowledge, improving skills and changing attitude as Job performance requires, continuing education creates as learning attitude among employee. It can therefore, be said that training and development increases an individual's capabilities and improves the potential effectiveness of all members of the work group with ultimately improve the ability of the organization to perform us better. However, a heavy load of in – service training activities.

**1.4 Performance:** Means the actual conduct of activities to meet responsibilities according to standards. It is an indication of what is done and how well it is done (Awases, 2006). According to WHO health report ( 2006), the performance is a combination of staff being, available, competent, productive and responsive; poor performance of service providers leads to inaccessibility of care and in appropriate care, which thus contribute to reduced health outcomes as people are not using services or are mistreated due to harmful practice, it results from too few staff or from staff not providing care according to standards and not being responsive to the patients need. As Hughes et al. Stated "most performance problems can be attributed to unclear expectations, skills deficits, resource or equipment shortages or a lack of motivations" (Hughes et al., 2002)

The term "performance" is used to focus attention on the total behavior of person including his or her organization, the use of specialized knowledge, his/her attitude acquired through training, as well as organization and integration of practice (Bargagliotti, 1999).

A performance related behavior is directly associated with job tasks and the need to be accomplish to achieve jobs objectives (Sullivan and Decker, 2009). Performance evaluation is a continuous process with little psychological risk to the employee. It is that constant feedback from one human being to another, which accept the problem and tries to solve them (Young, 1992). Performance assessment is an essential requirement for the evaluation of existing health services, and thus is necessary for improvement in health care by focusing on what the health workers actually do (Jurnm, 1996).

Al-Ahmadi, (2009) study about factors affecting performance of hospital nurses in Riyadh Region, Saudi Arabia, the study objectives were to estimate self-reported performance, and determine whether differences in employee demographics, job satisfaction, and organizational commitment, influenced performance. The study found that job performance was positively correlated with organizational commitment, job satisfaction personal and professional variables. and strong predictors of nurses' performance. Job performance is positively related to some personal factors, including years of experience, nationality, gender, and marital status, while the level of education is negatively related to performance. This study concluded that it fulfilled a research gap in the area of nursing performance, and its relationship with work attitudes and highlighted the impact of national culture on job performance and work attitude among nurses in Saudi Arabia. Hong Lu, et. al (2004), argues that the current nursing shortage and high turnover is of great concern in many countries because of its impact upon the efficiency and effectiveness of any health-care delivery system. Recruitment and retention of nurses are persistent problems associated with job satisfaction. This paper analyses the growing literature relating to job satisfaction among nurses and concludes that more research is required to understand the relative importance of the many identified factors to job satisfaction. It is argued that the absence of a robust causal model incorporating organizational, professional and personal variables is undermining the development of interventions to improve nurse retention.

**1.5 Professional nurse:** means a person registered with the nurse regularity and registering authority of their country. Professional nurses are trained at higher education level with the training period between 3-4 years and above. Professional nurses are also called registered nurses working in clinical, nursing services and educational institutions (Awases, 2006). Their functions include assessing and educating patients, administering treatments and supervising and coordinating care (Bureau of labor statistics, 2008).

## 2. Subjects and Method

**2.1 Aim of the study:** The study aimed to assess night shift and education/ training development factors on performance of professional nurses in north West Bank governmental hospitals

### 2.2 Objectives of the study

1. Determine the affects of the night shift on the performance of professional nurses.
3. To assess how education and training development affect professional nurses performance.

### 2.3 Research hypothesis

1. There is no significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of night shift, education and training development factors affecting professional nurses performance due to age variable.
2. There is no significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of night shift, education and training development factors affecting professional nurses performance due to gender variable.
3. There is no significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of night shift, education and training development factors affecting professional nurses performance due to workplace variable.
4. There is no significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of night shift, education and training development factors affecting professional nurses performance due to the years of experience variable.
5. There is no significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of night shift, education and training development factors affecting performance of professional nurses due to the academic degree variable.

**2.4 Study design:** Descriptive cross sectional explorative study was used for conducting the study.

**2.5 Study Setting:** This study was conducted on the governmental hospitals of the north part of West Bank, these were Dr. Khaleel Suleiman hospital (Jenin Governmental hospital), Dr. Thabet Thabet hospital (Tulkarim Governmental hospital), Dr. Darweesh Nazal hospital (Qalqelia Governmental hospital), Alwatani medical hospital (Nablus governmental hospital), Rafedia surgical hospital, and Yasser Arafat hospital (Salfeet governmental hospital).

**2.6 Study period:** The study was conducted from 1 June 2012 to August 2012.

**2.7 Study Sample:** A stratified random sample was selected, the sample of the study consisted of (185) professional nurses with response rate 97% who were selected as a stratified random sample from the whole population (315).

### 2.8 Inclusion criteria

Participants included in this study were stratified random sample of professional nurses (3 years and above) working in governmental hospitals in North part of West Bank, while practical nurses were excluded from this study.

**2.9 Tool of the study:** The study questionnaire was designed by the study investigator after scanning related studies and literature. The questionnaire consisted of two sections: The first section consisted of personal data about nurse's age, gender, work place, years of experience and academic degree.

The second section consisted of (2) domains and (22) statements to identify the night shift and education / training development factors affecting performance of professional nurses in North West Bank governmental Hospitals. The domains of the study are ; night shift with (10) statements, education and training development (12) statements .

The questionnaire items were constructed using a 5-point likert –scale Accordingly, the scores of responses of the nurses to each statement were calculated according to the five-point-scale, “Likert scale”, in which strongly agree = 5 points, agree = 4 points, uncertain = 3 points, disagree = 2 points, strongly disagree = 1 point.

**3. Validity and reliability of the study:** The content validity of instruments was censured including all the key concepts relevant to the research topic. The questions were formulated to cover selected organizational factors and professional nurses' performance. This instrument was approved and evaluated by different experts including, researcher, nursing educators and other experts in the faculty of educational sciences to evaluate initial contents for validity, and the researcher's thesis adviser also assesses the instrument for wording, adequacy, and coverage of items of the standard of nursing performance. After revising the items in questionnaire and summarizing the expert's suggestions, modifications were made in wording and content. Some items were added but some others were dropped. The Cronbach's alpha obtained from this questionnaire reliability was 0.863 which is considered high and suitable for research purpose.

**4. Pilot study:** Before starting the actual data collection process, a pilot study was conducted, as a pretest for the questionnaire in order to assess the appropriateness of the instrument and to detect if there is need for any modification to be done. A sample consists for 10 professional nurses were made to ensure the validity of the study where no changes or modification was needed. Each questionnaire took 15-20 minutes to be filled.

**6. Data analysis:** The quantitative data were entered and analyzed using the SPSS ( Statistical Package for Social Sciences version 17.0), and the level of significance ( $\alpha$ ) was set at 0.05. Descriptive and inferential

statistical tests were used. Demographic and baseline variables were analyzed using Means, frequency, percentage, and standard deviations. Hypothesis were tested and analyzed by using t. test and Anova one way test.

**7. Ethical considerations:** The title and research methods were approved by the higher studies and nursing committee of the faculty of health professions at Al-Quds University. Permission obtained to access the MOH hospitals when approval of the director of hospital services was granted. The study participant received an explanation about the purpose of the study, confidentially and sponsorship of the study. In addition, the participants were informed about his/her right to refuse or to withdraw at any time during the study through the informed consent attached with each questionnaire

**8. Results:** The results indicated a high level of agreement among study participants on the means of the domains affecting performance of professional nurses in a descending form; night shift (79%), education and training development (68.8%). (Table 1)

**Table(1): Scores of night shift and education and training development Factors Affecting Performance of Professional Nurses in Descending Form**

No.	Domain	M	SD	%	Level
1	Night shift	3.95	0.60	79.0	High
2	Education and training development	3.44	0.62	68.8	Moderate

**Hypotheses 1:** There are no significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of **Night shift** and Education and training development factors affected professional nurses performance, which may be attributed to age variable( Table 3).

**Table (2): Frequencies, means, and standard deviations of Night shift and Education and training development factors affected performance of professional nurses at North West Bank governmental hospitals due to age variable**

Domain	Age	Frequency	Mean	S.D
<b>Night shift</b>	Less than 25	20	3.82	0.59
	25 - 29	60	3.94	0.62
	30 - 34	35	3.98	0.62
	35 - 39	39	4.02	0.56
	40 and above	31	3.93	0.64
	<b>Total</b>	<b>185</b>	<b>3.95</b>	<b>0.60</b>
Education and training development	Less than 25	20	3.46	0.62
	25 - 29	60	3.52	0.67
	30 - 34	35	3.40	0.50
	35 - 39	39	3.36	0.68
	40 and above	31	3.44	0.61
	<b>Total</b>	<b>185</b>	<b>3.44</b>	<b>0.62</b>

For the testing of this hypothesis, One Way ANOVA Test revealed no significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of **Night shift** and Education and training development factors affected professional nurses performance, attributed to age variable (table 3 )

**Table (3): Results of One Way ANOVA to test the differences between the means of selected organizational factors affected professional nurses' performance due to age**

Domain	F	Sig.*
<b>Night shift</b>	0.387	0.818
Education and training development	0.438	0.781

**Hypothesis 2:** There are no significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of **Night shift** and Education and training development factors affected professional nurses performance, attributed to gender variable. For the testing of this hypothesis, T-Test statistical analysis for independent samples was performed. It was found that there were no significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of **Night shift** and Education and training development factors affected professional nurses performance, attributed to gender variable (Table 4) shows the results.

**Table (4): Results of T-Test for independent samples** T-Test used as the gender variable contains TWO groups (male & female)

Domain	Gender	Frequency	Mean	S.D	T- value	Sig
Night shift	Male	72	3.90	0.53	0.810	0.419
	Female	113	3.98	0.65		
Education and training development	Male	72	3.37	0.47	1.197	0.233
	Female	113	3.49	0.70		

**Hypothesis 3:** There are no significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of **Night shift** and Education and training development factors affecting professional nurses performance attributed to the workplace variable (Table 5)

**Table (5): One Way ANOVA to test the differences between the means of Night shift and Education and training development factors affected professional nurses' performance attributed to the workplace**

Domain	Hospital	Frequency	Mean	S.D	F	Sig.*
Night shift	Dr. Khaleel Suleiman	37	3.88	0.66	6.459	0.0001
	Dr. Thabet Hospital	29	3.48	0.53		
	Dr. Nazal Hospital	18	4.21	0.49		
	Al-Watani Hospital	29	4.17	0.52		
	Rafedia Hospital	51	4.08	0.54		
	Arafat Hospital	21	3.84	0.58		
	<b>Total</b>	<b>185</b>	<b>3.95</b>	<b>0.60</b>		
Education and training development	Dr. Khaleel Suleiman	37	3.46	0.79	3.145	0.010
	Dr. Thabet Hospital	29	3.52	0.44		
	Dr. Nazal Hospital	18	3.90	0.63		
	Al-Watani Hospital	29	3.21	0.39		
	Rafedia Hospital	51	3.38	0.65		
	Arafat Hospital	21	3.37	0.54		
	Total					

For the testing of this hypothesis, One Way ANOVA was used. The results revealed significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of **Night shift** and Education and training development factors affecting professional nurses performance attributed to the workplace variable.

**Hypothesis 4:**

There are no significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of **Night shift** and Education and training development factors affected professional nurses performance attributed to the Years of experience variable. (table 7).

**Table (7): One Way ANOVA to test the differences for years of experience**

Domain	Years of experience	Frequency	Mean	S.D	F	Sig.*
Night shift	Less than one year	12	3.95	0.74	0.452	0.771
	1 - 5	62	3.91	0.58		
	6-10	48	3.96	0.61		
	11-15	39	3.91	0.55		
	16 and above	24	4.09	0.70		
	Total	<b>185</b>	<b>3.95</b>	<b>0.60</b>		
Education and training development	Less than one year	12	3.49	0.42	0.100	0.982
	1 - 5	62	3.43	0.68		
	6-10	48	3.43	0.60		
	11-15	39	3.42	0.66		
	16 and above	24	3.51	0.58		
	Total	<b>185</b>	<b>3.44</b>	<b>0.62</b>		

For the testing of this hypothesis, the researcher conducted One Way ANOVA Test. The result of this analysis showed that there are no significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of **Night shift** and Education and training development factors affected professional nurses performance, which might be attributed to the Years of experience variable (Table 7).

**Hypothesis 5:** There are significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of **Night shift** and Education and training development factors affecting performance of professional nurses attributed to

the Academic degree variable (9)

**Table (9): One Way ANOVA to test the differences between the means of Night shift and Education and training development factors to academic degree**

Domain	Academic degree	Frequency	Mean	S.D	f	Sig.
Night shift	Diploma (three years)	24	3.88	0.72	0.287	0.835
	Bachelor degree (four years)	133	0.57	0.57		
	Postgraduate diploma	15	3.87	0.73		
	Master degree	13	4.05	0.63		
	Total	185	3.95	0.60		
Education and training development	Diploma (three years)	24	3.34	0.55	1.549	0.203
	Bachelor degree (four years)	133	3.46	0.61		
	Postgraduate diploma	15	3.64	0.77		
	Master degree	13	3.18	0.63		
	Total	185	3.44	0.62		

One Way ANOVA test revealed no significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of **Night shift** and Education and training development factors affecting performance of professional nurses attributed to the Academic degree variable except the domain of resources availability. (Table 9)

**9. Discussion:** The majority of professional nurses were bachelor degree (71.9%), while (32.4%) of the participants (25-29) years old. There was a bias in the distribution. On the other hand, the majority were female (61.1%) as opposed to (38.9%) males. It was found that 32.4% of the participants were 25-29 years old, 21.1% aged 35-39 years old, 18.9% aged 30-34 years old, 16.8% aged 40 and above years old, 10.8% aged less than 25 years old. However, there were no significant differences at the level  $\alpha \leq 0.05$  between means of organizational factors affected professional nurses performance which might be attributed to the age variable. This means that the age of the participant had no effect on the organizational factors affected professional nurses' performance at the selected hospitals. The majority of respondents age range between 25-29 years old (32.4%). This result could be interpreted by the following: the nurses with long experiences in the hospitals prefer to move to public clinics so as to get rid of evening and night shift duties, this movement give chance for new professional nurses to be hired by hospitals, and also the application of the law in the civil service and the Palestinian MOH, which gives the chance for early retirement of (50 years old) for females or after 20 years of experience, so many nurses now scheduled on the program of retirement according to this law, and the MOH starts to replace the nurses with new graduated.

### 9.1 Gender

It was found that the majority of participants were female (61.1%) as opposed to (38.9%) males. There was no significant differences at the level  $\alpha \leq 0.05$  between the mean of organizational factors affected professional nurses performance at north west bank governmental hospitals due to gender. it was found that gender of the participants had no effect on their on the organizational factors affecting professional nurses performance at the selected hospitals Through the study results it was congruent with the result of Awads study (2004) where males formed most of respondent, they were congruent with the study of Elkahlout & Algaed (2003) however, most of the nursing staff are females, they 88% of the population of nurses and the rest 12% are males . It should note that nurses is a female profession and needs female more than males. The Palestinian Central Bureau of Statistics (2003) found that the percentage of female nurse was nearly 63.0%as opposed to 37% males.

### 6.1.5 Academic degree

The majority of participants (71.9%) had a bachelor degree, (13%) had a diploma three years degree, (8.1%) have post graduated diploma degree, (7%) had a master degree. This result is inconsistent with the literatures that focused on the importance of the educational level for nurses because it determines their responsibilities for performing the various roles (Jacob, 2002). According to Kane, et al (2007) found that there is a relationship between registered nurses and the quality of nursing outcome, decreasing mortality rate, decreasing complications, and infection among nurses.

However, the researcher found that there were no significant differences at the level of  $\alpha=0.05$  between the means of selected organizational factors affecting professional nurses performance at north west bank governmental hospitals which might be attributed to academic degree of participants.

#### 6.3.1.2 Nightshift affected professional nurses' performance:

This subcategory consists of ten items related to Nightshift statement reflecting the professional nurses' performance effectiveness to identify the Nightshift statement at the professional level. The results indicate the total mean of Nightshift affecting professional nursing performance in selected North West bank governmental



hospitals:3.95, SD. 0.60. the percentage 79% that was high, which might be attributed to the majority of participants (79%) who agreed on all items included under this subcategory.

Statement, night shift makes some nurses physically exhausted (88.8%), night shift makes some nurses unwilling to work next day (87.2%), night shift makes some nurses frustrated (85.8%) and nurse's shortage forces to working extra shifts adding extra workload (85.8%) achieved a very high level of organizational factors affecting professional nurses performance in the Nightshift domain

This result that the nurses regarded the time of 10 hours allocated for either the day shift or night shift as too long. Circadian rhythms can get out of phase with an abrupt change in an individual's activity, certain nurses take a long time to adjust to changes due to internal clock rhythm and inability to keep track with the time cues results in a person being frustrated. Nurse's shortage forces to working extra shifts adding extra workload (85.8%), the temporary supporting night nurses not as competent as permanent staff to deal with peculiar problems encountered in specialized units. This make it necessary for night nurses to work extra hard shift to keep their sections functioning to the desired health care standard and also the workload of the night nurses is dependent on the intake of patients during a particular day.

This result agree with Madide (2003), that there is a diversity of problems encountered by nurses in a normal working situation. Some of these may be physical, physiological, psychosocial, socio-economic and cultural or health related. Night work intensifies problems since the individual is working when the body clock is naturally telling the majority of the people to rest. 50% of the respondents working on day shift indicated that they do not get enough sleep due to night shift, whilst only 18% of nurses complain of a lack of sleep after working on nightshift. The researcher observation is 88.8% of participants are physically exhausted due to the nightshift. The researcher opinion is problems vary with each individual since the biological structure is different, some nurses physically exhausted due to the night shift, unwilling to work next day, frustrated and their shortage forces to work extra shift adding extra workload.

According (pheasant,1991) the general state of bodily exhaustion which , results from prolonged heavy work, is the depletion of the body's energy reserve, fatigue which results from most occupational tasks, is due to more suitable psycho physiological processes. fatigue is the feeling of abnormal tiredness, lethargy and loss of drive .

Behar et. al.( 1999) the symptoms reported by night –shift nurses include sleepiness, sadness and difficulty concentrating, with numerous complaints about cumulated fatigue and disturbed social life.

While the statements, night shift increase rate of absenteeism among nurses (75.4%), night shift affects nurse attitude toward their practice and profession (75.2%), night shift increases turnover (75.0%), there is a low concentration among nurses during night shift (74.0%) and night shift allow for more error and accident (72.6%) achieved a high level. While the statement night shift decrease quality of service provided to patients (69.8%) achieved moderate.

The influence of circadian rhythm on the night worker difference in the circadian rhythm make other worker to be at their peak in the evening and some to reach their peak in the morning Meckenzie J (2001) The study also examined if nurses felt more when working on night shift . the result show that 67% of nurses did not feel energetic. Tiredness may be due to insomnia, changes in sleeping patterns, variation in length of shift period, and circadian rhythm. The fact that about 20% of the respondent experienced persistent tiredness implies that their performance could be impaired. This inefficiency in performance could have deleterious consequences on the health care of patients.

The researcher found that sleep has major effects on the health and the performance of nurses . The health care worker in this have indicated that are exposed to any error or accident resulting from fatigue or stress can cost a life patients.

Ohida, "et al" (2001) find that in examining the influence of day, afternoon, night and rotating shifts on job performance and stress on nurses, found that job performances and satisfaction was less on a rotating roster than on a fixed roster. Although there has been a move towards studies of nursing turnover, there is still a general absence of research that attempts to associate perceptions of night duty with job satisfaction and ultimately staff turnover.

#### **6.3.1.4 Educational and training development affected professional nurses' performance:**

This subcategory consist of thirteen items related to Educational level statement reflecting the professional nurses performance effectiveness to identify the Educational level statement at the professional level. The results indicate the total mean of Educational and training development affecting professional nursing performance in selected north west bank governmental hospitals: 3.44, SD. 0.62. the percentage 68.8% that was high, which might be attributed to the majority of participants (68.8%) who agreed on all items included under this subcategory.

The result agree with Benti, et. al. (2006) said, that training is any process by which the aptitudes, skills, and abilities of employees to perform specific jobs are increased. It is the act of increasing the knowledge and skills of an employee for doing a particular job. Abruzzese (1996) stated that because the health care delivery in

hospitals become complex, the need for continuous skilled training becomes also increasable.

While the statements, nurses are well trained to protect themselves against hazards and professional errors (74.2%), error and accidents are referred to lack of competence (74.2%), absenteeism is referred to low competence (73.8%) and professional nurses participate in identifying their staff development needs (70.0%) achieved a high level.

The American Nurses Association (ANA, 1991) emphasized on the ongoing educational activities for nurses, because it helps in enhancement of practice relevant to their responsibilities, professional growth, and maintaining competency in their respective positions. Ward and O'Brien (2005) supported that the division of nursing ensures development of educational programs to support the delivery of high quality nursing care. Bahaga (2010) found that 50% respondents believe that they are given sufficient information to protect themselves against hazards that may occur in their work. However 26.47% respondents believe that they are not provided sufficient information to protect themselves against hazards that may occur in their work. The researcher opinion that all the professional nurses should be given sufficient information to protect themselves from hazards in their work. While the statements, there is an increase in patient complains due to the lack of skills and knowledge provided to nurses (69.2%), there is continuous education and training are provided to nurses (67.6%), education and training provided responses to the nurses training needs (66.6%), nurses education and training needs are systematically identified (66.2%), in service training adequately addresses performance gaps (65.6%) and continuous education and training are provided fairly to all nurses (61.6%) are achieved moderate level. While the statement, there is a clear policy for training nurses (56.8%) is achieved low level.

### 10. Conclusion

**The night shift** and education/ training developmental factors affected the performance of the professional nurses. Dr. Nazal Hospital found to be the highest mean of night shift and education/ training developmental factors affecting nurses' performance. Dr. Thabet Hospital was the less mean according night shift while Al-Watani according to education/ training developmental factors.

**11. Recommendation:** let nurses assign appropriate shifts, reduce the strain of long work hours on night shift and motivation could improve adaptation of the nurses toward work hours of night shift. Providing continuous professional development of nurses in service training program. Further research is needed to validate these results.

### 12. Acknowledgement:

The researchers are grateful to the nurses in the targeted governmental hospitals for the participation in this study, to the Ministry of health administration of Palestine for help and support.

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