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Workload Status at Nursing Stations in UNRWA Health Centers – Gaza Governorates

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Workload Status at Nursing Stations in UNRWA Health Centers – Gaza Governorates

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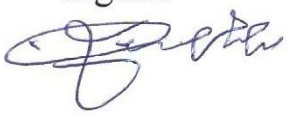
Declaration

I certify that this entire thesis submitted for the degree of master is my own work and has not written to me in whole or in part, by any other person(s), and that this thesis (or any part of the same) has not been submitted for a higher degree or qualification to any other university or institution.

Signed



Riyad Awad Diab

29 January 2011

Dedication

To my parents souls, and to my brothers and sisters

Also,

I would like to thank my wife and my Kids; Ahmad, Mohammad, Tamer and Tala for their patience

And

To everyone who contributed to get this study a reality.

Riyad Awad Ahmad Diab

Acknowledgment

I would like to express my deepest appreciation and gratitude to all people that have contributed to the completion of this thesis. First of all, I had the great fortune to study under the supervision of Dr. Bassam Abu Hamad. I am very grateful for his guidance and encouragement and his friendly support and enthusiasm.

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Abstract

It is needless to say that nursing is an essential component in any health system. Nurses provide critical and crucial functions in healthcare organizations, through delivering nursing care and safeguarding clients. This study aims to assess the workload status at nursing stations at UNRWA health centers in Gaza Governorates in order to contribute to the delivery of safe and effective nursing care to clients.

A quantitative cross-sectional study was conducted in order to develop a workload measurement, which could serve as a management tool for decisions pertaining to staffing level. Also, the study assessed nurses' perceptions about their workload. The instruments used in this study were self-constructed questionnaire and an extraction/observation sheet. All the nurses (163) who were working in the randomly selected 10 health centers were included in the study, out of them, 128 responded and completed self-administered questionnaires, with a response rate of 78.5%. In total, 258 nursing procedures were assessed for time unit values at the service delivery points at nursing stations in the selected health centers. The researcher collected the data by himself. General measures of reliability and validity such as standardization of methods and procedures were administered. Cronbach's Alpha reliability test was 0.903.

The research findings show that there were no in use workload standards for nurses at UNRWA health centers. Nurses' perceptions reflected relatively moderate scores regarding the overall domains constituting the entire workload status (66.75%), with the highest scores for working hours' domain (70.25%), followed by staffing domain (66%), system domain (65.5%) and facilities domain (65.25%). Also, in response to a direct question, 91% of nurses believed that they are work overloaded and they attributed their feeling of being overloaded to factors such as increasing paperwork, inadequate staffing, increasing intensity of work, having additional non-nursing job duties and external interruptions/noise.

The researcher calculated the average measurement of the time unit values per nursing procedure in minuets and it was as follows; documentation and counselling '3:49'; blood pressure measurement '0:55', weighting baby '0:19', weighting adult '0:18, minor dressing '4:37', umbilical care '0:49', doppler'3:58', abdominal examination '2:03', immunizing a child with two injections '1:06' and giving one injection in the injection room '1:15'. Also the time unit values consumed in minutes per client in each station were as follows; non- communicable diseases '3:08', postnatal care '13:40', antenatal care '8:58', family planning '6:04', injection '1:15', health screening '2:49, immunization '3:31' and dressing '4:37'.

The researcher recommends reconsidering the time unit values calculated in this study to better estimating workload in UNRWA health centers. Factors affecting nurses' workload extracted in this study need to be considered particularly facilities and system domains. Decreasing paper work, ensuring appropriate staffing level and implementing job rotation programs are important for having fair and appropriate workload.

Table of Contents

List of Tables

List of Figures

List of Annexes

List of Abbreviation

ANA	American Nurses Association
ANC	Ante Natal Care
BP	Blood Pressure
CHSRF	Canadian Health Services Research Foundation
DK	Do not Know
DOHC	Department of Health and Children
EOSHW	European Organization for Safety and Health at Work
FP	Family Planning
GS	Gaza Strip
ICN	International Council of Nurses
JLARC	Joint Legislative Audit & Review Committee
MM:SS	Minutes: Seconds
MNR	Married to Non-Refugee
MOH	Ministry of Health
NCDs	Non-Communicable Diseases
NGOs	Non-Governmental Organizations
PASSIA	Palestinian Academic Society for the Study of International Affairs
PCBS	Palestinian Central Bureau of Statistics
PHC	Primary Health Care
PNC	Post Natal Care
PNGO	Palestinian Non-Governmental Organizations
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences
UK	United Kingdom
UNRWA	United Nations Relief and Working Agency
WB	West Bank
WHO	World Health Organization
WISN	Workload Indicator of Staff Need

Chapter 1

Introduction

Introduction

1.1 Research background

Nurses provide critical and crucial functions in healthcare organizations, by monitoring care and safeguarding clients; thus, the availability and work of nurses affect the quality of care and clients safety (Aiken, et al. 2002). Both at primary, secondary and tertiary care, the roles of nurses are highly remarkable for promoting, sustaining and caring of clients and patients. The concept of workload in nursing is considered an important issue that affects and affected by environmental conditions, management related factors and it shapes nurses characteristics. Suitable workload may lead to effective and efficient health services provided to attain quality of care, which represents a desirable goal for the management of health care services. This will be achieved by taking practical steps for workload measurement and management which make the decision and level of staffing easier and more reasonable.

Assessing nurses' perceptions towards workload and measuring the time consumed while performing nursing procedures, is a helpful tool for rational decision making for staffing level. This study focuses on measuring workload at nursing stations in United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) health centers in Gaza Governorate. While the benefits for determining and measuring workload are great but it is still one way of several ways that is used to assess nursing work (Wiskow, 2004).

The findings of this study might provide policy makers in the UNRWA with some insights into the factors that affect workload and influence nursing care with a particular focus at the service delivery points. This study might also help to identify a policy or administrative initiatives that could maximize nursing productivity and client outcomes through some

objective tools decreasing the subjectivity level in nursing human resources planning and deployment. Nurse managers will be provided with information to guide them in selecting and managing nursing resources to ensure the best quality of care at the least cost. Organizations will learn about the structures and processes that influence the workload and ability of nurses to provide care at the appropriate level to help retain and recruit nurses to maintain an effective workforce.

1.2 Research problem

Globally, nurses are working harder, caring for more individuals, and spending less time with each person. What has been squeezed out in this changing environment, is the critical time nurses need to spend assessing clients, monitoring their conditions, and providing necessary interventions in a timely manner as well as educating, caring for and coordinating care for health care consumers and their families (Ontario Ministry of Health-MOH, 1999).

Nurses in UNRWA have additional non-conventional duties such as direct supervision of clerks and cleaners in addition to other administrative tasks. Nurses at UNRWA perform a lot of activities serving around 70% of the Gaza Population and providing them with Primary Health Care (PHC) services. It is anticipated that the work load of nurses at UNRWA is different than at other health sectors in Gaza. Internationally, there is a general agreement that measuring nursing workload is important because in reality, nurse staffing decisions are more often based on professional judgment, which are restrained within budget parameters, than on data from empirical workload measurements (McGillis-Hall et al., 2004).

In fact, there is currently no objective assessment of the workload in nursing stations at UNRWA and subsequently no objective means for estimating the nursing human resources

requirements. In other words, there is information gap in relation to workload in nursing. It is not clear whether nurses are really overloaded or not and also how they perceive their workload. Till now, the consumed time in nursing procedures is not yet determined in time unit values. Therefore, it is important to measure nursing workload in order to introduce more rational thinking in determining staffing level; more objectively. In other words, this study may reduce the ambiguity related to workload in nursing at UNRWA health centers.

1.3 Justification

Globally, revolution in medical advances, health care delivery and the requirements of population health needs are increasingly going through transitional era. In order to meet these challenges effectively, efficiently, and equitably, decision-makers at all levels require tools, information and capacity to assess health care needs; to choose interventions; to design policy options appropriate to their circumstances; and to conduct effective monitoring with the aim of enhancing health systems performance. Decision makers also require adequate information on evidence-based nursing practices that will help them realize cost-effective and high quality health care using workload measurements for making staffing decisions. This indicates the values of studying job satisfaction.

McGillis, et al., (2004) proposed that the implementation of effective and efficient methods to address workload issues is necessary to improve system outcomes. Although there is a general agreement that measuring and capturing nursing workload is important, most of the systems neither use standard times nor are they based on objective time measurements.

There are several negative consequences of high nursing workload. Research shows that a heavy nursing workload adversely affects patient safety (McGillis, et al., 2004). A heavy nursing workload appears to be related to suboptimal client care and may lead to decrease client satisfaction (Gurses et al., 2009). Workload can be a factor contributing to errors, high workload in the form of time pressure may reduce the attention devoted by a nurse to

safety-critical tasks, thus creating conditions for errors and unsafe client care (Lang, et al., 2004).

Currently, UNRWA is the prime provider of health services for refugees and recently including women married-to none Refugees (MNR) and their families, which added further work burden due to increasing the coverage of population served. Also, the instability of the political situation affects the health system in Gaza with more shift of clients to UNRWA system due to shortage of drugs and supplies at MOH (Palestinian Non-Governmental Organizations-PNGO, 2009). Also the stability of the political situation at UNRWA makes it ideal for examination of workload in nursing.

Although, the workload has been studied in other professions such as lab services and pharmacy sector, it has never been scientifically studied in nursing at UNRWA in Gaza. Therefore, the study will try to focus on nursing workload in order to set the base for staffing decisions that can be used by decision makers.

1.4 Aim of the study

The overall aim of this study is to assess and develop a measurement of workload at nursing stations in UNRWA health centers in Gaza. Thus, the study findings may contribute to developing a fair human resources allocation scheme, which might subsequently promote the quality of services provided by nurses.

1.5 Objectives of the study

- To assess the workload status at nursing stations in UNRWA health centres
- To appraise nurses' perceptions in UNRWA health centers about their workload and working environment.

- To identify variations in workload in relation to organizational and characteristics variables in UNRWA health centers.
- To determine time unit values consumed while performing the commonly implemented nursing procedures at UNRWA health centers.
- To suggest recommendations that might help in determining appropriate staffing level and decisions.

1.6 Research questions

- How nurses perceive their workload at UNRWA health centres?
- What are the domains which constitute the perceptions about workload at nursing stations in UNRWA health centers?
- Are nurses in UNRWA health centers in Gaza having enough knowledge about their workload?
- What are the time unit values of the common nursing activities performed at UNRWA health centers?
- Are the workload perceptions and measurements influenced by organizational factors?
- Are there variations in work load perceptions and measurement in relation to nurses' characteristics in UNRWA health centers?
- What are the conclusions and recommendations that could be drawn from the study in order to promote the appropriateness of staffing level for nurses at UNRWA?

1.7 Context of the study

1.7. 1 Demographic context

Palestine lies on the western edge of the Asian continent and the eastern extremity of the Mediterranean Sea (The Palestinian Academic Society for the Study of International Affairs- PASSIA, 2009). It is bound to the north by Lebanon and Syria, to the west by the Mediterranean Sea, to the south by the Gulf of Aqaba and the Egyptian Sinai Peninsula, and to the east by Jordan. The land area of Palestine is 26,323 Km^2. Now, Palestinian Territory land comprises two areas separated geographically: the West Bank (WB) and Gaza Strip (GS) with total area 6,020 Km^2 (PASSIA, 2009).

In 2009 the total population of Palestinian in WB and GS is about 3,935,249 individuals (1,486,816 in GS and 2,448,833 in WB) of which 50.2% are males and 49.2% are females with population density 653 capita per Km^2(Palestinian Central Bureau of Statistics-PCBS, 2010). The percentage of the refugee population in the Palestinian Territory is 45.0% of the total Palestinian population living in the Palestinian Territory, 18.8% in the WB and 26.2% in GS; the refugee population is distributed by the region at 30.2% in the WB and 69.2% in GS (PCBS, 2010).

Gaza Strip (GS)**:**

GS represents a constricted a small piece of land lying on the coast of the Mediterranean Sea which stretches along 50 Km (Annex 1). Its position on the crossroads from Africa to Asia made it a target for occupiers and conquerors over the centuries. The last of these was Israel who occupied the GS from Egyptians in 1967 (MOH, 2003). The GS is very crowded place with area 360 Km^2 and constitutes 6.2% of total area of Palestinian territory land (MOH, 2003). In 2009 the total population in GS is 1,486,816 (PCBS, 2010) concentrated mainly in 7 towns, 10 small villages and 8 refugee camps. Gaza Governorates are five; North of Gaza, Gaza City, Mid-Zone, Khanyonis and Rafah (PCBS, 2008). The

population density is 3,880 inhabitants per km^2 (UNRWA, 2010-b). This large number of population adds a burden on the health system including UNRWA and could affect nurses' workload.

The number of registered refugees in Gaza is 1073 thousands, and the percentage of children below 18 years of age is 46.2 and the percentage of population 40 years and above 21.2% (UNRWA, 2009-b).

These numbers indicate the real challenges and potential work volume at UNRWA health facilities in Gaza especially in present circumstances related to blockade and the deterioration of the economic situation.

1.7.2 Socio-economical context

The socio-economic situation in Palestine is deteriorating rapidly. According to PCBS (2008), the number of unemployed persons reached about 183 thousands (102 thousands in WB and 81 thousands in GS), the percentage of unemployed among persons participating in labour force in 2007 was 21.5% (17% in WB and 29.7% in GS) and unemployment rate reached 19% among females compared with 22.1% among males (PCBS, 2008).

The dependency ratio in the Palestinian Territory increased sharply from 4.8 in the 3rd quarter of the year 2000 to 5.6 in the year 2007 (an increased percentage of 14.6%); it increased from 4.3 to 4.9 in the WB (14.0 % increase) and from 5.9 to 7.3 in GS (23.7% increase) (PCBS, 2008). The Palestinian Household Expenditure and Consumption Survey in the year 2007 indicated that the percentage of Palestinian households whose monthly income is less than the national poverty line was 57.2%, (of which 45.7% in the WB and 79.4% in GS). In addition, the results indicated that the poverty among households who have no person participating in the labour market stood at 70.1% compared to 54.7% among those who have at least one employed person (PCBS, 2008).

The demand for services at UNRWA primary health facilities in both GS and WB continues to rise year after year, far outstripping population growth rates (UNRWA, 2010-a). During the first half of 2009, the number of consultations in GS was 11% higher than in the same period in 2008, whilst in the WB there was a 7.1 percent rise. Refugees are increasingly unable to pay prescription fees (co-payment) at MOH and NGOs clinics and are shifting to UNRWA clinics in greater numbers. In GS the situation has been compounded by the MOH continued inability to replenish vital supplies at its clinics due to the blockade (UNRWA, 2010-a).

These difficult circumstances create long term adverse effects on the physical and mental health of the population which will increase the challenges and overload at UNRWA health centers in Gaza and make work more complex. It is worth noting that UNRWA provides free health services and people have little other choices than to seek services at UNRWA health services; more than before. This increases demand for services and subsequently leads to work overload.

1.7.3 Palestinian health care system

The health care system in Palestine is complex. There are five major providers: MOH, UNRWA, Medical Military Services for Police and General Security, Non-Governmental Organizations (NGOs), and private sector (non- and for-profit hospitals).

The MOH is the main health care provider; it provides primary, secondary, and tertiary health services. UNRWA mainly provides primary health care services to the refugee population. The Medical Services for Police provides preventive and curative services for policemen, general security persons and their families, in addition to the general population (World Health Organization-WHO, 2009). The NGOs sector operates about 50 centers; the private for-profit health sector also provides the three levels of care through a wide range of practices (WHO, 2009).

UNRWA currently runs 137 primary health care facilities with about 4,650 professional, administrative, support and other staff; three million refugees make use of UNRWA's health facilities and 11 million medical consultations performed during the year 2009 (UNRWA, 2010-c). UNRWA health facilities in GS are 20 and the ratio of PHC facilities per 100 000 population is 1.9 (UNRWA, 2009-a).

1.7. 4 Health human resources in UNRWA

UNRWA provides comprehensive health services to registered Palestine refugee population in Jordan, Lebanon, Syria, GS and WB. The total number of UNRWA employees at the end of the year 2009 reached, 4,650 professional, administrative, support and other staff (UNRWA, 2010-c). Those personnel introduce several medical care services including laboratory services, outpatient services, maternal and child health, disease prevention and control, physical rehabilitation, oral health, school health and psychosocial support.

The staff to population ratios in 2008 continued to be very low compared to national and regional standards, even if is calculated based on served population and not on the total number of registered refugees (UNRWA, 2009-a).

In GS the total number of doctors, nurses, pharmacists, paramedical, labour category and admin staff working in UNRWA health program reached 850 at the end of year 2008 (UNRWA, 2009-a). See Annex 2.

1.8 Operational definitions

Workload: The amount of work assigned to or expected from a worker in a specified time period (Kearney-Nunnery, 2008).

Staffing: Is the process of determining and providing the acceptable number and mix of nursing personnel to produce a desired level of care to meet the patient's demand (McGillis, et al., 2004).

Primary Health Care: Is essential health care; based on practical, scientifically sound, and socially acceptable method and technology; universally accessible to all in the community through their full participation; at an affordable cost; and geared toward self-reliance and self-determination (WHO, 1978).

Registered Refugees: It applies to registered refugees holding refugee registration cards issued by UNRWA (PCBS, 2008).

Healthy Environmental Conditions: Refers to an organization in which people are valued and priority is given to the multiple aspects of the workplace that affect employees' ability to function well in order to accomplish the goals of the organization such as noise, light and temperature (Kraybill, 2003)

Nursing profession: It is an essential part of the society and a social contract driven from the power for the practice of nursing that plans professional rights and responsibilities as well as mechanisms for public accountability (American Nurses Association, 2010).

Nurses' station: An area in a clinic, unit, or ward in a health care facility that serves as the administrative center for nursing care for a particular group of patients. It is usually centrally located and may be staffed by a unit secretary or clerk who assists with

paperwork, telephone, and other communication. Before going on duty, nurses usually meet there to receive daily assignments, review the patients' charts, and update the files (Mosby's Medical Dictionary, 2010).

Patient/Client: Refers to the recipient(s) of nursing services. This includes individuals, (family member, guardian, substitute caregiver) families, groups, populations or entire communities those registered as refugees in UN or have UN card.

Management: The process, through which efforts of members of the organization are co-ordinated, directed and guided towards the achievement of organizational goals (Mullins, 2005).

Perception: The dynamic and complex way in which individuals select information (stimuli) from the environment, interpret and translate it so that a meaning is assigned which will result in a pattern of behaviour or thought (Mullins, 2005).

Time unit value per procedure: Is the mean number of time units involved in performing all activities to complete the defined procedure once (Houang and El-Nageh, 1993).

Workload measurement: Refers to any attempt to assess the volume and/or level of work. (Arthur and James, 1994).

Job design: Concerned with the relationship between workers and the nature and content of jobs, and their task functions (Mullins, 2005).

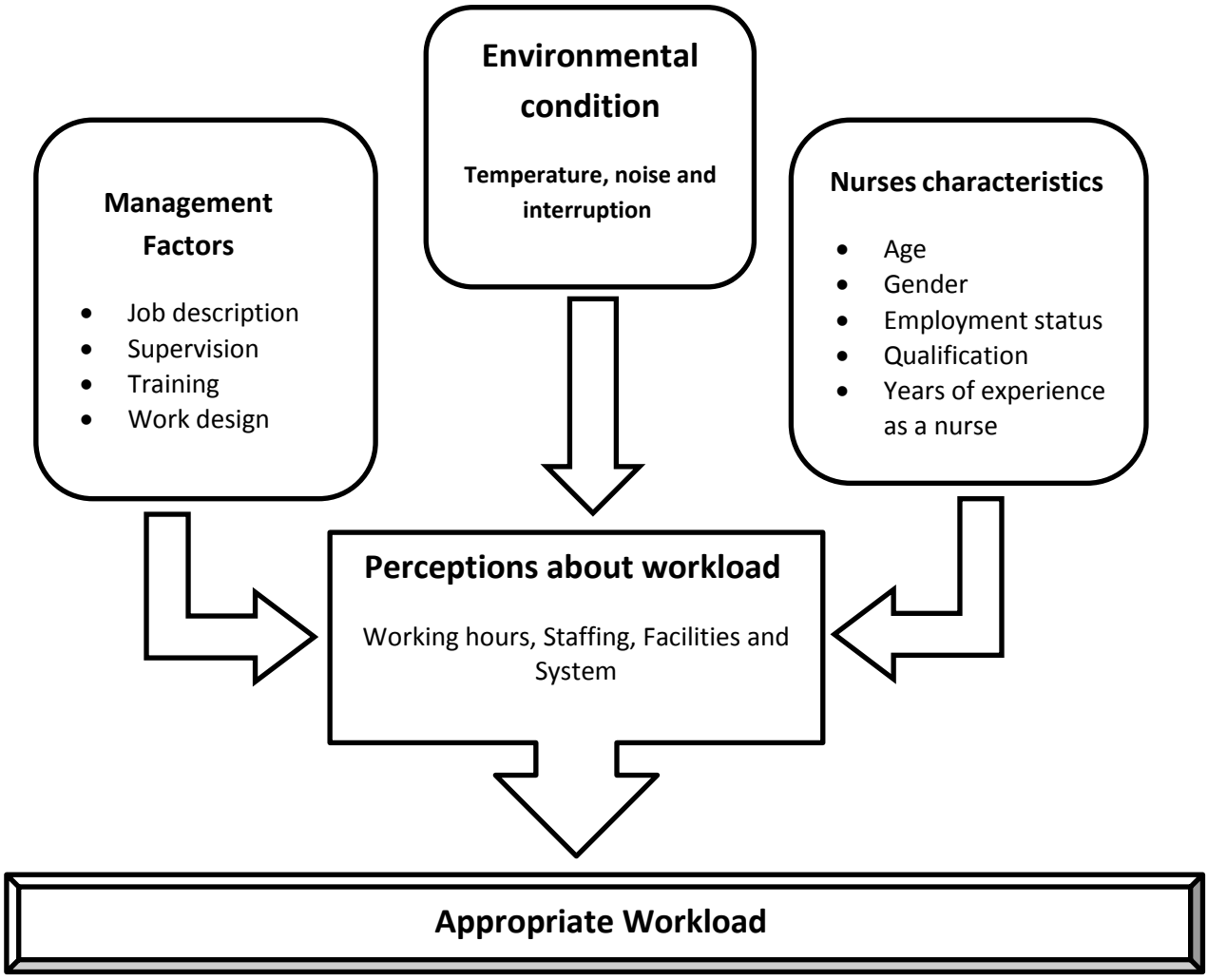
Chapter 2

Literature Review

2.1 Conceptual Framework

The conceptual framework guiding the study is shown in Figure (2.1). Three major factors were included in the research framework: Environmental condition, management factors and nurses characteristics. These all factors affect and affected by nursing workload, which at the end may also affect the provision of an efficient and effective nursing services through appropriate workload.

Figure (2.1) Nursing workload factors framework



The environmental condition: Internal and external factors; the internal ones are related to work conditions such as interruptions during working hours and temperature at workplace. On the other hand, the external ones are related to surrounding environment, such as noise which may distribute the attention and wok process or access.

Uncomfortable workplace can contribute to nurses' dissatisfaction and fatigue. Dissatisfied and fatigue nurses cannot tolerate their workload, thus having difficulty in achieving both quantity and quality nursing services. When the work environment is structured in a way that enables employees to do their work, this will affects positively to attain work.

Nurse characteristics include: Experience, age, gender, qualification and employment status. Nurses' ability to provide care varies in relation to their own personal factors such as age, qualifications, family situation, working conditions and geographic location. These factors affect their workload (Gaugler et al., 2004). The educational level of nurses and their experience is connected to quality of nursing (Blegen et al., 2008). The nurse's lack of expertise is unlikely to be successful in addressing immediate workforce problems (Buchanan and Considine, 2002).

The Management factors include: Job description, supervision, training and work design. Job description plays an important role in decreasing work stress and work overload. However, the nurse manager, as an advocate for staff, has to acknowledge and understand similarities and relative differences across nurses' values. Regarding work design, the rotation work design makes employees experience less boredom, greater task variety, and decreased feelings of needless repetition.

Perception about workload: Several domains affect nurses' perceptions about work load including working hours, staffing, facilities and system. Together with supportive employer policies and effective relationships, sufficient time will allow nurses to practice at their full level of competence.

Working hours

Nursing workload is definitely affecting the time that a nurse can allocate to various tasks. Under a heavy workload, nurses may not have sufficient time to perform tasks that can have a direct effect on client safety. A heavy nursing workload can influence the care provider's decision to perform various procedures (McGillis, et al., 2004). Also, the number of working hours and the number of clients affect the capacity of nurses to complete the tasks required from them.

Staffing

Nurses are complaining, that they have an ever increasing workload without any commensurate increase in staffing, as a result of which they are unable to provide what they consider to be an acceptable standard of care. At the same time, the constant understaffing results in overburdening available staff with heavy workloads.

Facilities

The availability of support services, such computerized order entry systems, or other work aids affect the work demanded from nurses.

System

The organizational structures are particularly important to the work achievement effectively such as having access to information, receiving support, having access to resources necessary to do the job and having the opportunity to learn and grow.

2.2 Nursing work and workload concepts

The American Nurses Association (2010), defined nursing profession as it is an essential part of the society and a social contract driven from the power for the practice of nursing that plans professional rights and responsibilities as well as mechanisms for public accountability. The practice of nursing involves unselfish behaviour and is governed by a code of ethics. While, the terms nursing work and nursing workload, are used to describe the same concept when in fact they have different meanings. The term 'nursing work' typically describes the work of the nurse in functional terms, for example, the actions the nurse carries out on behalf of the patient while the term 'nursing workload' refers to the amount of performance required to carry out those nursing activities in a specified time period (Rafferty, et al., 2007).

Morris et al., (2007) clarified the nursing workload, describing it as consisting both nursing intensity and non-patient care-related nursing activities. However, the concepts of patient dependency, severity of illness, complexity of care, and time taken to carry out nursing work are subsumed under the umbrella term nursing intensity. Nursing intensity includes direct like administration of medication and assessment of blood pressure (BP), as well as indirect like making a phone call on behalf of the client and ordering supplies; care activities that are performed on the behalf of client. Non client care related nursing activities such as, attending staff meetings and supporting unit management.

However, Canadian Health Services Research Foundation-CHSRF, (2006) described nursing workload as realistic workload that means the quality practice environments support continuity of care and enable nurses to maintain competence, develop holistic therapeutic relationships and create work-life balance and the Canadian Nurses Association

(2003) defined nursing workload measurement system as a key component of any process to measure nursing resource intensity.

While, O'Brien et al., (2002) used the term clinical acuity in the report for the Nursing Workload Measurement in Acute Mental Health Inpatient Units; instead of workload and defined it as the volume and level of nursing work.

In fact, nurses are the health professionals that are most directly involved with patients; they monitor patients' progress, assess clinical changes, intervene when appropriate and care central to communication and coordination among the allied health team. Patient safety has been defined as freedom from accident, or, more broadly, avoiding injuries to patients from the care that is intended to help them (Duffield, et al., 2008).

Finally, Human Capital Alliance, (2006) described workload as formula stated that the amount of labour required is derived from the level of service activity demanded and effort or work required to deliver the activity.

2.3 Values of measuring nursing workload

There is a range of reasons why workload measurement could be important, first resource allocation, set staffing requirements; equitable distribution of work between workers; workforce planning; cost containment and accountability; linking labour inputs to other resource utilization and finally developing evidence for labour efficacy (King, et al., 2004).

A rational method of determining the workforce in various health facilities has been desirable for many years.

Workload is known to be a work stressor, and stress leads to turnover. The problem of retention of nurses will continue to grow unless work overload issues are managed. We need to develop strategies to make health care administrators and policy makers aware that it is cost-effective to give nurses control over their own staffing. Nursing workload

measurement systems are developed to measure the labour resource requirements for specific clients (O'Brien et al., 2005).

While, a heavy workload may reduce the time spent by nurses, collaborating and communicating with physicians, therefore affecting the quality of nurse-physician collaboration (Davis, et al., 2003). Also, a heavy nursing workload can lead to distress like cynicism, anger, and emotional exhaustion; poor nurse-client communication and burnout (Greenglass & Burke, 2003).

However, nurses experiencing stress and burnout may not be able to perform efficiently and effectively because their physical and cognitive resources may be reduced; this suboptimal performance may affect patient care and its safety.

In fact, workload can be a factor contributing to errors as high workload in the form of time pressure may reduce the attention devoted by a nurse to safety-critical tasks, thus creating conditions for errors and unsafe patient care (Reason, 1990).

For instance, the relationship between nursing workload and patient safety is based on the systemic, organizational impact of nursing workload: a heavy workload experienced by a nurse not only affects this nurse, but can also affect other nurses and health care providers in the nurse's work system. Understaffing may reduce time nurses have to help other nurses. This lack of time may also result in inadequate training or supervision of new nurses (Aiken, et al., 2002). The association between client outcomes and adequate nurse staffing makes the challenge of effectively measuring nursing workload vitally important (Rafferty et al., 2007).

However, nursing workload measurement is designed to answer the question "how can we use the best measure patient's requirements for nursing attention and determine how many nursing staff are needed to provide that care". Providing a range of data conducting from a complex process to enable rational decision making in allocation resources to nursing and

in allocation resources to consumers is the concept of nursing workload measurement, that influenced by demographic characteristics, self-care, motivation and ability, family support and the number of consumers (O'Brien et al., 2002).

2.4 Measurements of nursing workload

Measurement and evaluation are used to strengthen and improve performance practices, according to Workforce Compensation and Performance Service (2001), measures are the yardsticks used to determine how well work units and employees produced or provided products or services. The rational method of determining the workforce in various health facilities has been desirable for many years. However, the term 'workload measurement' refers to any attempt to assess the volume and/or level of nursing work. One of the functions of workload measurement systems is to determine nurse staffing requirements, but this is not their sole purpose (Arthur and James, 1994).

Past methods of using population ratios (numbers of doctors, nurses etc. per 100,000 population) and standard staffing schedules (fixed patterns of staffing for health posts, health centers, district hospitals in the country) were found to have serious disadvantages, key among them being overstaffing in some facilities and understaffing in others (WHO, 1998). In Western Australia, a nurse hour per patient day staffing method was developed which attempted to address some of the concerns identified in the literature in regard to workload management while also responding to industrial and political imperatives.

Elsewhere, measurement systems that have adopted indicators without a theoretical basis would assume that nursing practice is comprised of a series of tasks or procedures, without considering the complexity of care detailed and described in the nursing theories (Prescott et al. 1991).

In this regard, Carayon and Gurses, (2005) categorized nursing workload measures into four levels, the unit level, the job level, patient level, and the situation level. These measures can be organized into a hierarchy. The situation and patient levels workloads are enclosed in the job level workload, and the job level workload is a part in the unit level workload.

Therefore, measuring nurses' activities is one aspect of workload and recording daily visits is one simple measure (Brady, et al., 2007). However, this method does not reflect the nursing needs of the patient, the complexity of nursing care or even the quality of the care given. Activities required by a patient can also be recorded in a diary, called work sampling. The total activities required to care span of nursing care given such as support, education and health promotion. They for a patient can then be translated into total nursing time. However, Brady, et al. (2007), argue that this task focused measurement does not conclude that nursing care is complex and involves critical thinking, on-going assessment and evaluation with multiple thought processes and interventions occurring during any episode of nursing care.

Another view reported by, Edwardson and Giovannetti (1994), which illustrated that the workload measurement can be broadly categorized into two types: activity based and dependency based. The activity based measures characteristic of nursing care activities and assigns a time value for them. The strength of activity based systems lie in their ability to measure the tasks that nurses actually do in the course of their work. The major limitation of activity based systems is that they focus on care given and ignore the unmet needs of the patient. Measuring nursing workload, a prerequisite to identifying adequate nurse staffing levels, is difficult and complex. The more popular factor type represents a clustering of nursing activities and times around a set of indicators, each of which represents a different demand for nursing care. The nurse activities rate is presented with a checklist of

discriminating indicators and makes choices in relation to each one in order to build up an acuity score for a particular consumer on a particular shift. By definition, this approach allows the nurse to achieve a score using information more specific to the individual consumer, at least in relation to the chosen factors.

While, O'Brien, et al. (2005) provide four nurses staffing methodology categories; the first is related to the standard and average time per task that uses average nursing times calculated for a range of nursing tasks to provide care. The second is described as the standard patient categories of care which shows that the workload is measured by assessing patients' relative dependence on nursing care. Patient acuity is normally assessed by consideration of patient condition, basic care needs and/or therapeutic intervention requirements. The third methodology is standard patient diagnostic groupings which mean that the emergence of prospective payment systems based on medical diagnosis. The last one is nursing intensity that based more on an assessment of physiological instability of patients and their needs for teaching and emotional support.

The number of nursing hours required is determined by systematically constructing comprehensive patient care plans and adding up the number of minutes each intervention in the care plan will take. This can be done manually but ideally it should be computerized. It is a good predictor of staffing requirements, as it takes account of all the patient variables impinging on nursing time (Department of Health and Children**,** 2005).

Measuring the time it takes to accomplish certain tasks can be approached through several methods such as work sampling, time and motion, direct observation, and self-report. To capture all disciplinary activities, a random work sampling and a commonly used and accepted organized technique must be used for obtaining and analyzing staff time and resources (Joint Legislative Audit & Review Committee, 2009).

Consideration of the relationship between the nursing care time required by patients and the numbers of nursing personnel required was investigated in the period of Florence Nightingale. Based on the professional judgment of the ward sister, the most seriously ill patients were placed closest to her office to facilitate their observation, whereas patients who could fend for themselves tended to be located at the far end of the large, open wards (Edwardson and Giovannetti, 1994).

Regarding to the procedure based approach as one method of nursing workload measurement taken by Hurwitz and Cresswell, (2001) which considering the estimate staff requirements, they created task lists for a number of service areas, and then researched the average time it took for experienced front line workers to complete those tasks. Standard times were established for each procedure though area specific focus groups and attempts to take into account variation in client mix and factors related to staff characteristics.

Here we can see that the WHO, Geneva (1998) which developed guidelines to determine the Workload Indicators of Staffing Need (WISN). It can be used as a guideline for human resources management, planning and the appropriate way of determining levels of health staff. The WISN method determines staffing requirements for each category based on the workload of the facility. The calculated staffing requirements for each category are compared with the actual level. It shows the workload pressure of a particular category of workforce in different health facilities (WHO, 1998).

2.5 Employees' Perceptions

Professional values, attitudes and perceptions help nurses make sense of their work environment, form meanings, and decide whether they are willing to stay or to leave their job. The nurse manager, as an advocate for staff, has to acknowledge and understand similarities and relative differences across nurses' values; the manager then needs to

translate this understanding into managing nurses effectively and creating a work climate that supports retention (Hu, Herrick and Hodgin, 2004).

Boya et al., (2008) found that perception of quantitative and qualitative job insecurity was associated with psychological health problems, such as anxiety and depression among nurses. Thus, both shift work and insecurity represent a serious risk to the wellbeing of nurses, and the risk is probably comparable to that found in any other profession. However, less is known about the role of psychosocial factors (such as job demands, job control and organizational justice) or health behaviour in the relationship between these risks and wellbeing in general among nurses.

According to Kanter (1979), more work makes individuals may resist because they do not have the time to learn new procedures or tasks, and the change may increase their workloads. While, Hegney et al. (2006) found that nurses in Queensland, Australia felt that their workload was too heavy and that they could not complete their work in the time available to them. Additionally, Lee and Liou (2001) found that both 'understaffing' and 'unfinished work' were often conveyed as barriers to nurses' being able to complete nursing tasks on time and understanding patient conditions. Laschinger et al., (2006) found that about 53% of nurses left their jobs because of stress and an unpleasant work environment.

Staff who experience burnout are likely to withdraw from their job, invest less time and energy, do less work and do it less well (Maslach & Leiter, 1997). Burnout leads to an inability to cope with a changing workplace environment. Excessive workload occurs when an employee perceives that he or she has too many tasks to do in a period of time. Theoretically, burnout results from a situation of chronic imbalance in which the job demands more than the organization can give and provides fewer resources than the

individual needs. Considerable research supports the idea that excessive workloads contribute to burnout, in particular, emotional exhaustion (Greenglass & Burke, 2003).

2.6 Workload Domains

2.6.1 Working hours

When nurses working hours are increased there is also a reduction in the number of errors and complications (McGillis Hall et al., 2004). The educational level of nurses and their experience is also connected to quality of nursing (Blegen et al., 2008). The greater the proportion of nurses, the better the chances of implementing patient-centered nursing care. Individual responsibility has been shown to be linked to job satisfaction (Manley & Hamill 1997), clarity of work and independence and to patient centeredness (Goode & Rowe 2001). Work fostering also has an effect on coping (Ala-Mursula et al., 2002).

Thompson et al., (2008) found that time pressure not only diminishes the ability of nurses to detect the need for interventions, but also reduces the positive influence of nursing experience on their detection ability. These two negative influences of time pressure motivated nurses to investigate whether time pressure hinders patient-perceived care quality and whether patients can perceive how time pressure influences nurses (Thompson et al., 2008).

According to the review by McVicar (2003), shift working as a major source of distress among nurses appears to have increased in relative significance during the last 10 years. Studies indicate that rotating shift work can adversely affect many aspects of nurses' health and wellbeing (Berger & Hobbs, 2006).

Therefore, without time to break the quality of decision-making, either from high workload or the perception that reflection is time wasting can be affected. Waterworth, (2003) notes the inability to manage time successfully can lead to feelings of personal inadequacy and

feelings of guilt by nurses who felt they did not spend enough time with their team or patients due to other commitments. Nursing work has been increasing along a continuum of complexity (Duffield et al., 2008). This increased workload for nurses is likely to affect care quality in nursing practice and increase time pressure, which may impact patient-perceived care quality, subsequently reducing patients' intention to return to the same hospital for their health care needs (Gurses et al., 2009).

In accordance to Gaudine, (2010) who clarified that, the difficult or unfamiliar work of the nurse may have to be performed within limited time frames. The nurse with a heavy load cannot buffer the load, like the executive who takes a briefcase home when work piles up. However, when nurses experience time constraints, the things they enjoy doing the most are the things they no longer have time to do. Nurses go into nursing for the caring aspects (George, 1995), and feel overloaded when they do not have time to talk with patients or to comfort a patient or family who has just heard bad news. Further, nurses go into nursing because they like to work with people, including other nurses, or have a need for affiliation. When they do not have time to say hello to their co-workers and ask them how their weekend was, they experience work overload. When nurses cannot do the things that they went into nursing for, they are apt to leave nursing.

2.6.2 Staffing

It's important to assure sufficient nurse staffing to be in utilization, safe nurse to patient ratios are based on patient need and other influencing criteria and requiring facilities to disclose staffing levels to the public and/or a regulatory body. Then, planning process undertaken to ensure there are sufficient staff available at the right time, with the right skills, diversity and flexibility, in the right place, to deliver high quality care to meet the needs of individuals and communities (Department of Health, United Kingdom-UK, 2000).

In this regard, McNeese-Smith and Donna (1999) carried out an analysis of staff nurse job satisfaction and dissatisfaction. A figure of 47% of the nurses interviewed described feeling overloaded as one of the main causes of job dissatisfaction. What is very interesting; however, is that many of the nurses linked being overloaded with work to poor quality. The link between poor quality and increased workload is not new. In 1999, Williams cited nurses as complaining that they have an ever increasing workload without any commensurate increase in staffing, as a result of which they are unable to provide what they consider to be an acceptable standard of care. Williams, (1999) suggests that there is much evidence to support the claim that workload is increasing in volume and intensity. This is due to shorter lengths of stay with resultant increases in patient dependency, patients for admission arriving prior to the previous occupier being discharged (the nurse has more patients than beds) and increasingly sophisticated medical procedures requiring additional nursing support (Williams, 1999). The greater the proportion of nurses, the better the chances of implementing patient centered nursing care. Individual responsibility has been shown to be linked to job satisfaction (Manley & Hamill, 1997).

So that, a workload measurement system is critical for identifying nurse staffing needs for safe client care and justifying nursing resources allocation (Buchan, et al. 1997).

Although, understanding the level of the nurse's workload is crucial in determining appropriate human resource planning, our current understanding of what has an impact on the nurse's workload and what should be considered in the allocation of nursing resources is unclear and greatly dependent upon potentially inadequate systems of workload measurement (Morris et al., 2007).

2.6.3 System role

Organizational characteristics influence the stress nurses experience at work with regard to previous research, a large part of potential sources of stress for nurses appear to be organizational in nature including stress-generating nursing work. Besides responses to patients' physical and psychological status, increased job demands, because of the use of sophisticated technologies, competition, nursing shortage, work overload, and lack of task autonomy and feedback, as well as reduced advancement opportunities, appear to be major determinants of emotional exhaustion (Moustaka and Constantinidis, 2010).

While, the perception of organizational justice can considerably vary from one organization to another, it can be argued that the concept is relevant internationally, as injustice can be experienced by anyone, regardless of geographical boundaries, status or income. Furthermore, the concept is also internationally relevant because of its strong link to ethics. Either production of the health workforce must involve systematic training of staff in preparation for work in the health sector. It must be involve all aspects related to basic and post-basic education and training of the health labour force which may include all training institutions managed by public, private and nongovernmental organization authorities (WHO, 2002).

The mandate of management to create conditions for work effectiveness by ensuring that employees have access to empowerment structures of information, support and resources to achieve organizational goals and opportunity for development (Kanter, 1979). Kanter claims that employees who have access to these structures are more productive, experience less burnout and have higher levels of organizational commitment.

2.6.4 Facilities

For the work process to happen, proper conditions are necessary which include the environment, staff, and adequate material for developing such activities. The process of nursing work follows the division of work based on the operating mode in which nurses will use their knowledge as ideological tool of power. This technical division is moving in the same sense of social division of labour is therefore a discontinuous and fragmented work. Increased working hours, excessive overtime, accelerated work rate, shortage of workers, environmental factors inadequate furniture, inadequate lighting, and possible overloads of body segments in certain movements for example, excessive force to accomplish certain tasks and repeatability of movements and postures in the development of work activities (Magnago et al., 2010).

The existence of work related resources (an evaluation of the own occupation as interesting and varied, acceptable space for own decision making, mutual help and positive relationships between colleagues) was confirmed by the majority of nurses. Studies about general care have elucidated the health promoting aspects cooperation and mutual help (Plante and Bouchard, 1995).

The availability of support services, such computerized order entry systems, or patient transportation, may reduce the work demands on nurses. However, studies have also reported that higher nursing workloads are associated with more adverse patient events (Aiken et al., 2002).

2.7 Management factors

In this domain many factors affected the workload such as, job description, supervision, training and work design.

Where actual performance fails to match the ideal this is largely a result of how staff perceive they are treated by management and the management function. Many problems in the people organization relationship arise not so much from what management does, but the manner in which it is done. Often, it is not so much the intent but the manner of implementation that is the root cause of staff unrest and dissatisfaction (Mullins, 2005).

Therefore, a heavy responsibility is placed on managers and the activity of management on the processes, systems and styles of management. Accordingly, how managers exercise the responsibility for, and duties of, management is important.

So, attention must be given to the work environment, and appropriate systems of motivation, job satisfaction and rewards. It is important to remember that improvement in organizational performance will only come about through people (Robinson, 1999).

Staff responsibilities needed to be clarified, many employees claimed to be unclear about their job descriptions. Role or job description is often more important than the individual and position power is the main source of power.

Regarding the supervision, it involves technical knowledge, human relations skills and coordination of work activities. Effective supervision is necessary for job satisfaction and high levels of work performance. Kindly and thoughtful leader behaviour is likely to generate high worker satisfaction. Supervisors who adopt a considerate manner towards workers tend to have the more highly satisfied work groups (Bassett, 1994). Lack of job satisfaction and unhappiness at work may also arise from problems connected with managers (Green, 1997). Careful attention should be given to job design, methods of work organization, the development of cohesive groups, and relationships between the nature and content of jobs and their task functions. The application of motivational theories and greater understanding of dimensions of job satisfaction and work performance, have led to increasing interest in job design. The nature of the work organization and the design of

jobs can have a significant effect on the job satisfaction of staff and on the level of organizational performance (Mullins, 2005).

Related to training, the production of the health workforce must involve systematic training of staff in preparation for work in the health sector. It must be involve all aspects related to basic and post-basic education and training of the health labour force which may include all training institutions managed by public, private and nongovernmental organization authorities (WHO, 2002). As well as, training opportunities are vital for personal development and career success. The under representation of women in one study was blamed on the male bias in professional development. They urged a rethink of the content of senior management courses and a move towards more mentoring (McLay and Brown, 2000).

2.8 Nurses characteristics correlates to workload

The work overload appears to be linked directly with nurses' characteristics, like span of experience years, degree of qualification and gender which may translate their perceptions according to these individual characteristics (Gaudine, 2010).

The educational level of nurses and their experience is also connected to quality of nursing (Blegen et al., 2008). However, experienced nursing managers may also have developed unique skills to help nurses cope with the highly stressful and emotionally exhausting aspects of their work. The nurse administrator who is aware of the meaning of workload or work overload for a nurse will be better able to respond when this nurse talks about his or her workload or work overload. Rather than looking at workload measurement values when a nurse talks about work overload, to attempt to verify if the unit was busy or not, the administrator should listen to the nurse's accounts of his or her experience (Gaudine, 2010).

Also, Blegen et al., (2008) show that more experienced nursing managers may be more effective at creating work environments that support the unique needs of nurses. These managers are more likely to have developed effective techniques for clearly defining nurses' job expectations, managing their workloads, and recognizing and rewarding nurses for their accomplishments. Therefore, less task orientated nursing is known as patient orientated nursing or integrated nursing. Task-orientated nursing means a task allocation system in contrast to patient orientated nursing which means the allocation of patients between one or more nurses.

Direct care nursing staff should be involved in selecting, modifying and evaluating staffing methods to increase the accuracy of workload estimates (Institute of Medicine, 2004).

In the literature there are many positions that linked staffing with client safety as Tourangeau (2006) found that by increasing the percentage of nurses by 10%, there were six fewer deaths for every 1000 discharged patients. In New Zealand an increase in the percentage of registered nurses together with a decreased number of nursing hours per patient per day increased negative client outcomes (O'Brien et al., 2005).

2.9 Organizational correlates to workload

The way a nursing unit is organized can be seen not only as a condition for effectiveness and efficiency, but also for nurses' job quality (Wibbelink, 1995). Organizational aspects, such as complexity or flexibility, could influence workload and autonomy and, in line with this, job satisfaction and health complaints too. The organizational structure of a unit depends on the patient flows, nursing system and the existing quality norms (Vries, 1984) and for designing a good control system, these factors seem to be important. Organizational aspects may be divided into ward characteristics (the occupancy rate),

nursing system (the way in which the work is organized in a nursing unit) and the production situation. The production situation can be characterized by complexity, uncertainty and flexibility of resources. Ward characteristics are for instance: formal qualifications, staff occupancy rate and availability of sufficient technical resources (Wibbelink, 1995).

While, Greenglass and Burke (2003) showed that hospital restructuring may lead to excess workload, which is the most important and consistent predictor of distress in nurses, as manifested in lower job satisfaction, professional efficacy and job security. Greater workload also contributed to depression, cynicism and anxiety.

One study found that having a nurse-patient ratio of less than 1:2 during evening shifts was associated with a 20 percent increase in length of stay in patients (Rosenstein, 2002). The nursing system can be divided into more or less task orientated (functional) nursing (Bertrand, et al., 1990).

However, deployment, equitable distribution and utilization of appropriate staff to match the organization's strategies remain important aspects of human resources management. These aspects are important because they guide the effective distribution, deployment and utilization of appropriate staff by placing them in the right jobs and retaining them where they are most needed (WHO, 2005).

Finally, the production situation is an important element in the organization of a unit, derived from Bertrand, Wortmann and Wijngaard, (1990) characteristics of the production situation in a nursing unit are 'predictability of care', 'co-operation', 'complexity of care', 'flexibility of care planning' and 'dynamic nursing activities'.

2.10 Recent workload studies in Gaza

In recent studies about workload carried out in Gaza in some fields such as laboratory, pharmacy and nursing in MOH, we can see a negative perceptions and dissatisfaction of the majority of the laboratory employees about laboratory workload domains, revealed in the study carried out by Shomar, (2007). The study showed that the PHC Laboratories do not have workload standard and staff distribution is not based according to work needs, and she recommended involvement of staff in decision making and improving the work environment and the management system also utilizing workload time unit value (Shomar, 2007).

Another study about workload status in PHC Pharmacies in Gaza Governorates carried out by El-Afifi, (2008), also showed that the overall perceptions about workload domain were dissatisfying and the suggested providing essential resources and equipment, encouraging effective supervision, conducting training and promoting motivation (El-Afifi, 2008).

Negative perceptions were also reported among nurses in the study of workload in nursing stations at PHC Governmental centers in Gaza carried out by Al-Hour (2010). Nurses reported low satisfaction about their working environment, suitability of working area and half of participants have unhygienic working environment in relation to work climate (Al-Hour, 2010).

Chapter 3

Methodology

Methodology

This chapter presents the study methodology. The chapter includes study design, type of study sample, study population, and ethical considerations. Also it presents the instruments which used in this study, piloting, data collection process, data prescribing, and data analysis. Finally, it presents selection criteria and limitation of the study.

3.1 Study design

The design of this study is analytical observational, cross sectional design to assess and measure the workload status at nursing stations in UNRWA health centers in Gaza governorates. It assesses the investigated phenomenon in its natural setting; as it occurs in reality; thus it gives almost a real picture of the nature of the investigated phenomenon.

3.2 Study population

Study population consisted of all nurses working at UNRWA health centers in Gaza governorates; including all the different categories; senior staff nurses, staff nurses, senior practical nurses, practical nurses and midwives. The total number of nurses working in Gaza UNRWA health centers is 292 nurses and midwives distributed over 20 health center (UNRWA, 2009-a). The study population also included studying the time units values consumed at service delivery points during implementing certain nursing procedures (common activities).

3.3 Sample size and Sampling process

For the selection of the health centers, the researcher used a multi-stage sampling approach. The GS was divided into five strata as follow; North, Gaza, Mid-zone, Khanyounis and Rafah. Using another stratification layer, the health centers were divided

and listed into 2 categories large and small health centers according to the number of services provided and catchment area (as classified by UNRWA).

The study was conducted on 10 health centers, five large and five small ones using the simple random selection. Annex 3 shows the list of the selected clinics and their location.

All the nurses working in these selected health centres were included (163) and invited to complete a questionnaire to assess their perceptions about their workload. Additionally, the measurements of consumed time for implementing nursing procedures were conducted at 8 stations in each health center namely Family Planning (FP), Immunization, Antenatal Care (ANC), Post Natal Care (PNC), Health Screening, Non-Communicable Diseases (NCDs), Dressing Room and Injection Room. At each facility, three observations were implemented for each activity.

3.4 Study setting

The study was conducted at the UNRWA health centers in Gaza which are distributed among the five governorates in the Gaza Strip. The total number of UNRWA health centers was 20 at the time of the study.

3.5 Period of the study

The study was conducted at the beginning of year 2010. After obtaining the approval of the proposal by the School of Public Health Al-Quds University, an administrative letter was sent to the UNRWA Chief Field Health Programme, Gaza Field Office in July 2010 (Annex 4). The pilot study was conducted in July 2010. Actual data was collected in August 2010 and October 2010. Data analysis and discussion was completed in November 2010. The study took almost one year from its beginning.

3.6 Selection criteria

3. 6.1 Inclusion criteria

All officially employed nurses from all categories who were working in the selected UNRWA health centers were included.

3. 6. 2 Exclusion criteria

- Any nurse who works outside the UNRWA health centers.
- Nurses who were working in UNRWA health centers through the job creation scheme.
- Nurses who were in long vacation (maternity, annual) at the time of the study.

3.7 Ethical and administrative considerations and procedures

The researcher was keen and committed to comply with all the ethical considerations needed in research. First, ethical approval was obtained from Helsinki Committee to carry out the study (Annex 5). Second, an approval letter was obtained from the UNRWA Chief Field Health Programme-Gaza field (Annex 6). Informed consent was also obtained from participants.

3.8 Construction of the Instruments

1- Self-administered structured questionnaire was constructed. The questionnaire designed to be clear with no complex terms (Annex 7). Leading, duplication and double parallel questions were avoided. The questionnaire was translated into the Arabic Language with reverse translation (Annex 8). The questionnaire includes four parts;

- Identifier such as age, marital status, place of residency, number of house hold members, qualification and job title.
- Organization related factors.
- Questions about workload.
- Four point Likert scale to assess workload domains were developed.

2- An extraction sheet to record the observed time for each nursing activity performed in UNRWA health centers in Gaza governorates (using stop watch). Three observations for each nursing activity in the eight service delivery points mentioned before were administered.

3.8.1 Reliability

Three steps were used to ensure the reliability of the study:

- Standardization of the implementation of the questionnaire. The same questionnaire was used to all nurses who were included in the study.
- Rechecking and data cleaning
- The statistical test used for the internal consistency is Cronbachs Alpha coefficient that assesses the internal consistency of the questionnaire. The total reliability test for all the domains combined was very high 0.903 (table 3.1).

Table (3.1) Reliability of categorized questions

Domains	No of items	Reliability (Cronbachs Alpha)
Working hours	**8**	**0.670**
Staffing	**10**	**0.813**
Facilities	**9**	**0.622**
System role	**10**	**0.757**
Overall	**37**	**0.903**

3.8.2 Validity

Face validity

The questionnaire was organized in a way that encourages the respondent to fill it. The layout and the organization of the questionnaire were highly professional and appealing.

Content validity:

The questionnaire as well as the extraction sheet was discussed with an experts committee to assess the relevance, clarity and comprehensiveness of the used instruments (Annex 9). In order to validate the questionnaire and the extraction sheet used in this study, the researcher sent them to 12 different experts including, researchers, PHC managers (Nurses and Physicians) and statisticians.

All of the comments of the experts were taken into consideration and as a result some modifications for some items were introduced. List of expert names are provided in Annex 10. Other general measures of validity were considered such as standardization of implementation and being scrupulous.

3.9 Pilot study

Pilot study on ten questionnaires and four observations for nursing procedures measurement was done before the start of data collection, in order to point out weaknesses in wording, predict response rate, determine the real time needed to fill the questionnaire and identify areas for ambiguity and to test the validity and suitability of questionnaire. Some minor changes and modifications were introduced but they didn't affect the core content of the questionnaire.

3.10 Response rate

Of the 163 nurses included in this study, 128 positively responded with a response rate of 78.5%.

3.11 Data collection method

Data were collected by using the following instruments:

- Self-administered structured questionnaire that was prepared and designed by the researcher to get information about employees' perceptions of the existing workload, staffing decision, role of management, staffing conditions and working hours were used. Participants were asked to fill the questionnaire forms which were distributed to them during their working hours. The average time for filling a questionnaire was 15 minutes.
- An extraction sheet to record the observed time for each nursing activity performed at the ten health centers were obtained by the researcher. By using stop watch the observation of procedures in the different stations were recorded, as three times for each procedure in each station. The researcher himself conducted the observations.

3.12 Data management and statistical analysis

The researcher used the Statistical Package for the Social Sciences (SPSS) program, version 18.0. The stages of data analysis included: coding the questionnaire, data entry, data cleaning, constructing frequency tables for all of the study variables, testing frequency and distribution of variables and conducting cross tabulation as needed. Recoding was done as needed for continuous variables and also for amalgamating certain categories. Scale related questions pertaining to the perceptions about workload were computed and transformed into scores.

An independent t-test and one way ANOVA statistical test were used to investigate the relationship between independent (categorical) and dependent variables (scores/measurements). Variations in scores/numbers (dependent variables) among independent variables with two categories were tested by t-test. Similarly, ANOVA was used to test variations in scores/numbers among independent variables with three or more categories.

3.13 Limitations of the study

1. Unstable political situation.
2. Limited scientific resources like books and journals.
3. Continuous electrical current cutting.
4. The study was cross sectional design, while the organization situation differs by time and the employees' perceptions may differ by time.
5. The study focused only at UNRWA which differs from other health organizations.

Chapter 4

Results &Discussion

Results and Discussion

4.1 Descriptive Analysis

4.1.1 Results from the questionnaire

4.1.1.1 Characteristics and organizational related findings

Table (4.1) Distribution of participants by socio-demographic characteristics

Variable	Frequency	Percentage (%)
Place of Residency		
North Gaza	20	17.2
Gaza City	31	26.7
Mid-zone	35	30.2
Khanyounis	11	9.5
Rafah	19	16.4
Total	116	100
Gender		
Male	34	26.6
Female	94	73.4
Total	128	100
Age		
Up to 30	29	24.4
31-40 years	28	23.5
Over 40 years	62	52.1
Total	119	100
(Mean = 39.84)	SD = 9.59	
Marital status		
Married	112	88.2
Not married	15	11.8
Total	127	100
Family members		
Less than 6 members	38	33.3
6-8 members	50	43.9
Over 8 members	26	22.8
Total	114	100
(Mean = 6.6)	SD = 2.73	

Table 4.1, shows that 17% of subjects were living in the North, 27% in Gaza, 30% in mid zone, 10% in Khanyounis and 16% in Rafah. That variation was controlled by having two health centers from each governorate but however the number of human resources within these facilities is widely different.

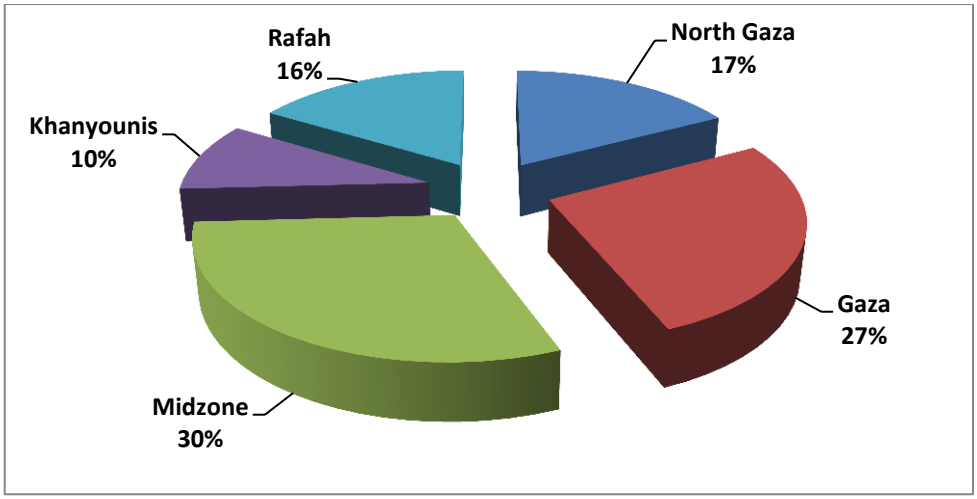


Figure (4.1) Distribution of study population by Governorates

Also in the same table; 73% of subjects were females and 27% were males. This indicates that employment of females in health centers is given a priority over their males' counterparts. This is also in line with the international trend of hiring female nurses. UNRWA policy utilizes female nurses to provide ANC, FP, PNC, and Immunization. Also nursing is still largely a female oriented profession (Health Resources and Services Administration, 2006). As in most cultures, females usually have more family responsibilities which might also affect their work attitudes and perceptions. This calls for paying more attention to workload at UNRWA settings as it is more important due to the gender factor.

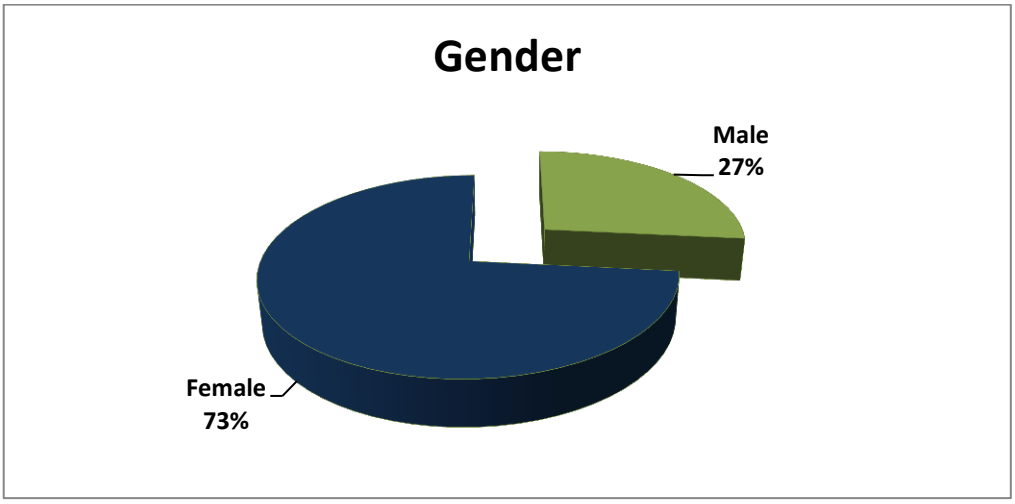


Figure (4.2) Gender distribution

Regarding age distribution of participants; the mean age of these subjects was 39.84. Participants aged up to 30 years constituted 24.4%, from 31 to 40 years constituted 23.5% and group aged more than 40 years constituted 52.1% , while the percentage of GS population 40 years and above is 21.2% (UNRWA, 2009-b). That implies that UNRWA nurses are senior ones (with long years of experience) most of them stay at their work as nurses for long time this also has its consequences on workload.

Also in the same table (4.1), married subjects constituted 88.2% and not-married ones represented 11.8% including singles, divorced and widows. Around one third of subjects were having less than 6 household members, 43.9% were having 6 to 8 members and 22.8% were having more than 8 members (mean was 6.6). This number is nearly consistent with the result of PCBS, (2008) which indicates that the mean of family members in Gaza is 6.5.

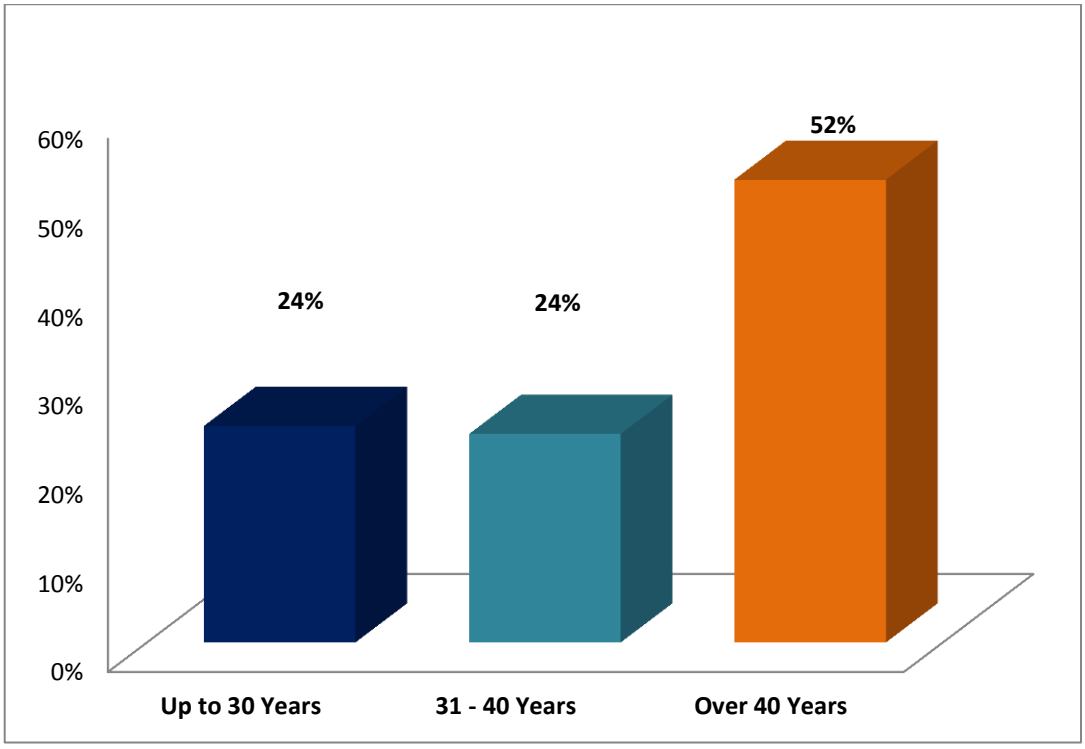


Figure (4.3) Age distribution

Table (4.2) Distribution of participants by professional and training related variables

Variable	Frequency	Percentage (%)
Qualification		
2 year diploma	70	54.7
3 year diploma	18	14.1
Bachelor and above	40	31.3
Total	128	100
Job title		
Midwife	39	31.2
Practical nurse	63	50.4
Staff nurse	23	18.4
Total	125	100
General experience in nursing		
Up to 10 years	36	28.3
11-20 years	47	37
Over 20 years	44	34.6
Total	127	100
(Mean = 16.46)		
Experience at present work place		
5 years and less	41	32.3
From 6 to 10 years	24	18.9
Over 10 years	62	48.8
Total	127	100
(Mean = 11.96)		
Receiving training courses (ever)		
Yes	93	75.6
No	30	24.4
Total	123	100
Type of training courses		
In nursing field	62	68.1
In management field	5	5.5
In managerial and nursing fields	24	26.4
Total	91	100
Initiative for the training		
Self	47	51.6
Organization	14	15.4
Both	30	33
Total	91	100
No. of training courses		
Less than 3 courses	33	36.7
From 3 to 5 courses	36	40
Over 5 courses	21	23.3
Total	91	100
(Mean = 4.38)		

Table 4.2 presents respondents by qualifications as follows, 54.7% of them hold two year diploma, 14.1% hold three year diploma, Bachelor and above represented about one third of the participants. This high percentage of bachelor and above may reflect the attitudes of nurses toward education and development.

Regarding job title, the distribution of midwifes was 31.2%, practical nurses represented about half of the participants and staff nurses represented 18.4%. The high percentage of practical nurses may be rationalized by the distribution of them in more than one station such as immunization, NCDs, health screening and dressing and injection rooms. Also, most UNRWA nurses are hired long years ago where the majority of nurses were practical nurses and also UNRWA deliberately hired practical nurses for budgetary concerns (UNRWA 2009-a).

Regarding the general experience in nursing, 28.3% have less than 11 years of experience, 40.9% have from 11 to 20 years and 30.7% have more than 20 years of experience (the mean was 16.46 years). Concerning the experience in present workplace (UNRWA), 32.3% have had 5 years and less at present work experience, 18.9% have had 6 to 10 years and 48.8% have had more than 10 years (mean was 11.9 years). Among respondents, 75.6% had attended training courses, 68.1% had attended nursing courses while 5.5% had attended managerial related courses and 26.4% had attended both nursing and managerial courses. Of the provided courses; 51.6% were self-organized courses (self-initiative) while 15.4% were organized by organization and one third attended courses either as a self–initiative or as initiated by the organization. Regarding the number of courses attended, 36.7% of the participants attended less than 3 courses, 40% attended 3 to 5 courses and 23.3% attended more than 5 courses. In this regard, UNRWA health system needs to increase the training courses related to management for most employees and not to strict that to those working in managerial positions.

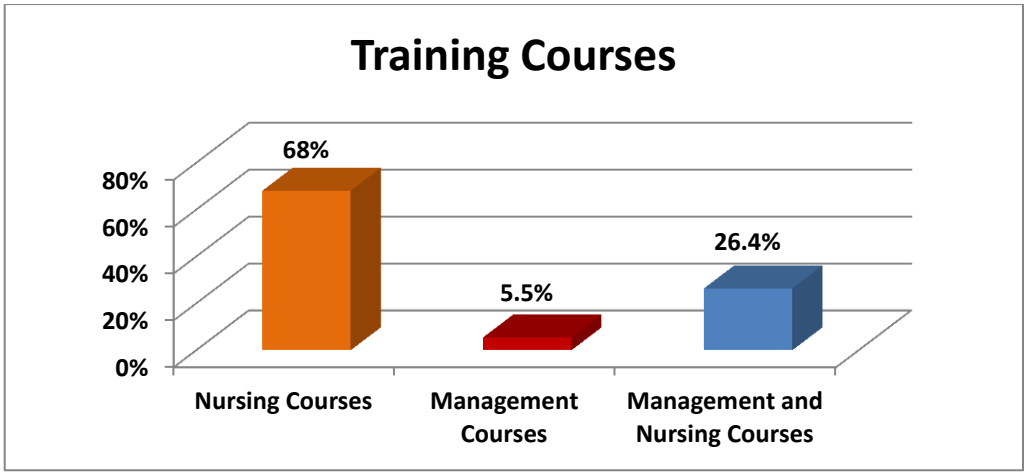


Figure (4.4) Distribution of training courses

Table (4.3) Distribution of the study participants by managerial related factors

Variable	Frequency	Percentage (%)
Having a written job description		
Yes	88	71.5
No	19	15.4
Do not Know (DK)	16	13
Total	123	100
Perceptions about the need for a job description		
There is a need	99	81.1
There is no need	14	11.5
DK	9	7.4
Total	122	100
Having breaks at work		
Yes	25	20.2
No	99	79.8
Total	124	100
Head nurse is qualified to manage the work (perception)		
Yes	109	89.3
No	13	10.7
Total	122	100
Work design		
Rotation	62	50
Fixed	48	38.7
Randomly	14	11.3
Total	124	100

As shown in table 4.3; over 70% of the participants reported that they have job descriptions. This indicates that the systems in UNRWA tends to organize work, but needs further attention and follow up. When asked about the need for job description most of them reported that there is a need for it (81.1%), also the table shows that 79.8% of

participants reported that their work system didn't allow having breaks during working hours and the remaining participants said that the system allows breaks. This gives a discrepancy as the UNRWA systems is unified but still interpreted differently. Regular rest breaks are effective in controlling the accumulation of risks associated with prolonged task performance after 2 hours of continuous work (Tucker, 2003). Therefore, the management system in UNRWA health centers needs to take this in concern permitting for having organized breaks during working hours.

Also the table shows that nearly 90% of participants perceived the head nurse as qualified enough to manage the work. Blegen et al. (2008) reported that the more experienced nursing managers may be more effective for creating work environments that support the unique needs of nurses. These managers are more likely to develop effective techniques for clearly defining nurses' job expectations, managing their workloads, and recognizing and rewarding nurses for their accomplishments. Experienced nursing managers may also develop unique skills to help nurses cope with the highly stressful and emotionally exhausting aspects of their work (Blegen et al., 2008).

Regarding work design inside the clinics, half of participants reported that there is a rotation in tasks, 38.7% reported that there is a fixed activities assigned to everyone and 11.3% of them reported that work is done in a random fashion. These results agree with USA characteristics of work shifts introduced in 18th International Symposium on work Shifts and Working Time in Australia which showed that fixed work with 38%, rotation 32% and random 10% (Hobbs, 2007). However, it seems that the UNRWA health system tends to adopt the rotation design which makes employees experience less boredom, greater task variety, and decreased feelings of needless repetition (McDonough, 2010). The shift should be expanded from job rotation to job enrichment with giving more challenging tasks (Herzberg, 1966).

4.1.1.2 Workload related findings

Table (4.4) Distribution of respondents by their knowledge about workload

Variables	Frequency	Percentage (%)
Hearing about the term workload		
Yes	122	96.8
No	4	3.2
Total	126	100
Workload measurement benefits the work		
Yes	76	61.3
No	45	36.3
DK	3	2.4
Total	124	100
Having a workload measurement of nursing activities		
Yes	45	36.6
No	59	48
DK	19	15.4
Total	123	100
Feeling overloaded		
Yes	116	91.3
No	11	8.7
Total	127	100

Participants were asked about their knowledge of the workload term and measurement (Table 4.4); 96.8% have heard about the "Workload" term, 61.3% agreed that workload measurement can bring benefits to their work, 36.6% answered that there is a workload measurement of nursing activities in their health centers and 91.3% feel that they are overloaded in their work (Figure 4.5). The nurse administrator who is aware about the meaning of workload is in a better position to understand and to respond to his/her nurse's needs (Gaudine, 2010).

Professional values help nurses make sense of their work environment, form meanings, and decide whether they are willing to stay or to leave their jobs. The nurse manager, as an advocate for staff, has to acknowledge and understand similarities and relative differences across nurses' values. The manager then needs to translate this understanding into managing nurses effectively and creating a work climate that supports retention (Hu, Herrick and Hodgin, 2004).

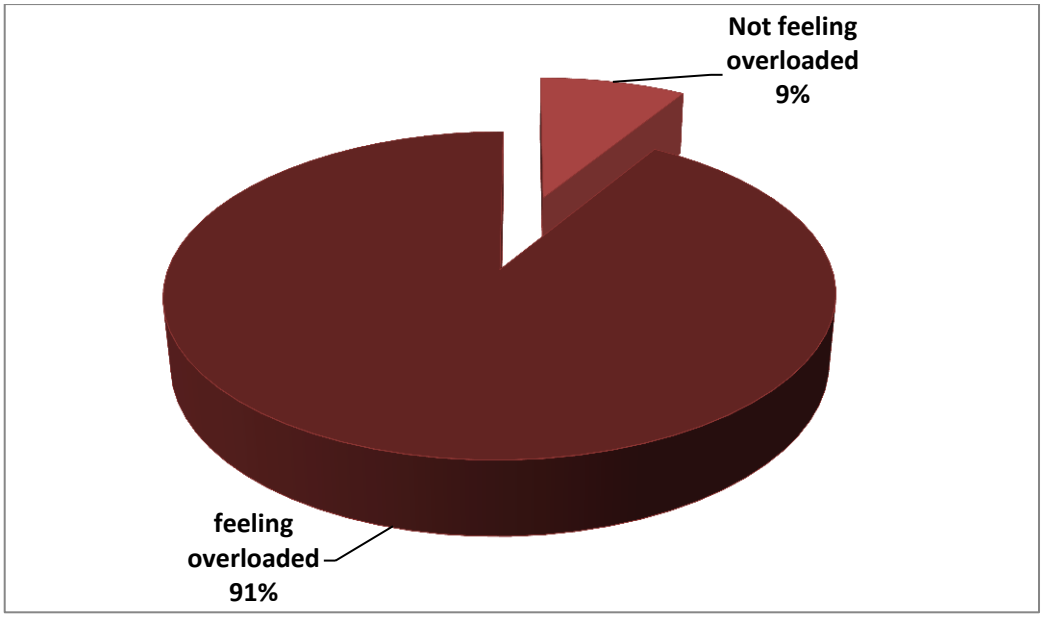


Figure (4.5) Nurses perceptions about their work load

When nurses were asked about the factors contributing to their workload, their answers indicate that the major attributing factors were; increasing paperwork, inadequate staff, increasing intensity of work, additional non-nursing job duties, and external interruption/ noise. Figure 4.6 presents the percentage of employees who believed that the mentioned factor attributed to his/her feeling of being overloaded.

Statistics from one group of hospitals in UK indicated that senior sisters and charge nurses, who oversee all the patients and staff on a ward, spend as little as 44% of their time with patients (Telegraph, 2010). This indicates that nurses have a lot of duties in addition of caring after patients especially in UNRWA the staff responsible for clerks and cleaners inside the health center and new duties related to home visits which newly added places extra burden on nurses in UNRWA. So, it's important to report that there are special needs to separate the duties that are not related to patient care to administrative people and/or to consider this additional load on deploying human resources. Redding and Robinson (2009) reported that number of interruptions ranged from 4 interruptions per hour to 6 per hour. Nurses were interrupted by patients, family members, physicians, nursing technicians,

other nurses, students, and staff from other departments. Also, nurses were interrupted with telephone calls, pagers, and face-to-face interruptions. Some of the interruptions originated with problems from the system such as redundant pages and messages (Redding and Robinson, 2009). After years of health care restructuring, nurses in most Canadian centers often find themselves experiencing work overload (Gaudine, 2010). So it's important to organize services provided and work system to provide suitable work environment for nurses to attain quality of work at stations and decrease irrational work strain. Considering factors contributing to workload revealed in this study and responding to them is essential.

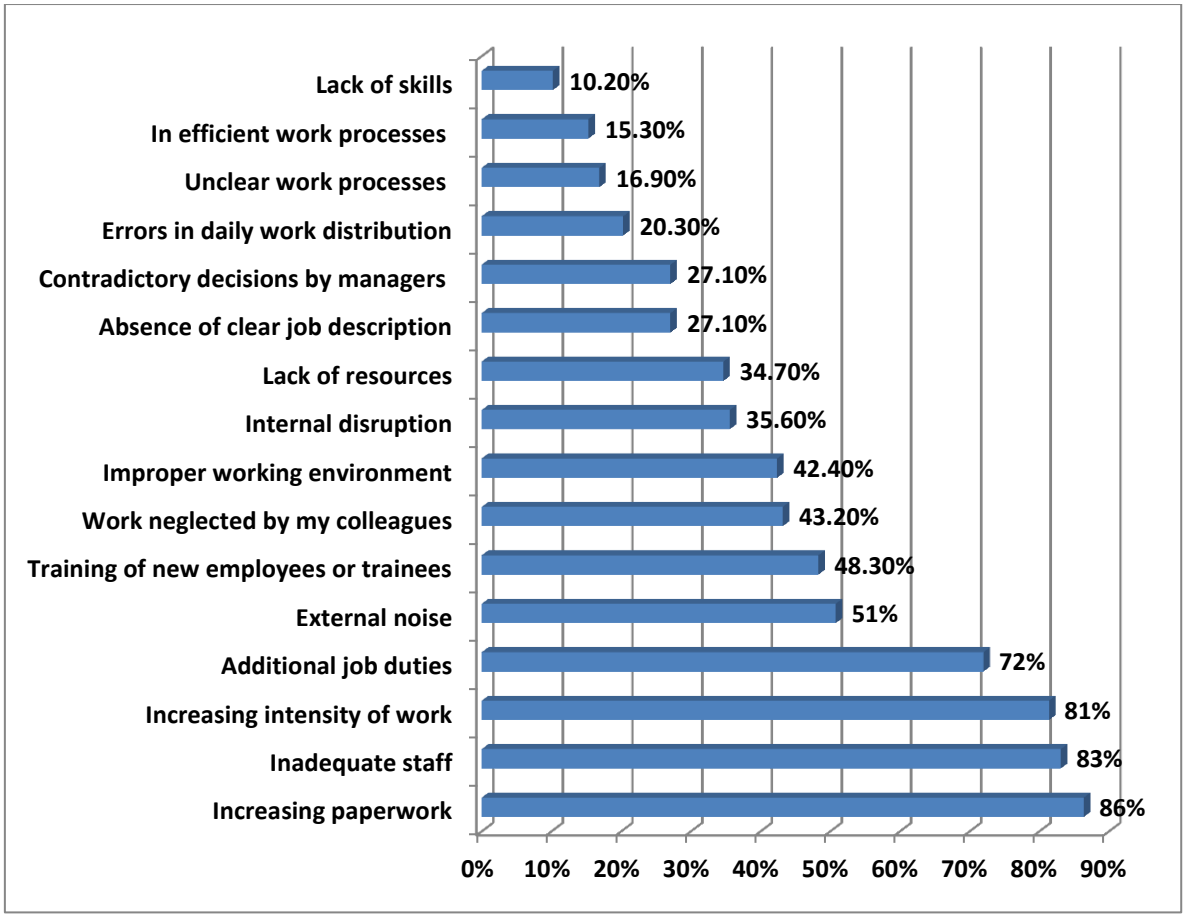


Figure (4.6) Reported factors contributing to nurses' overload

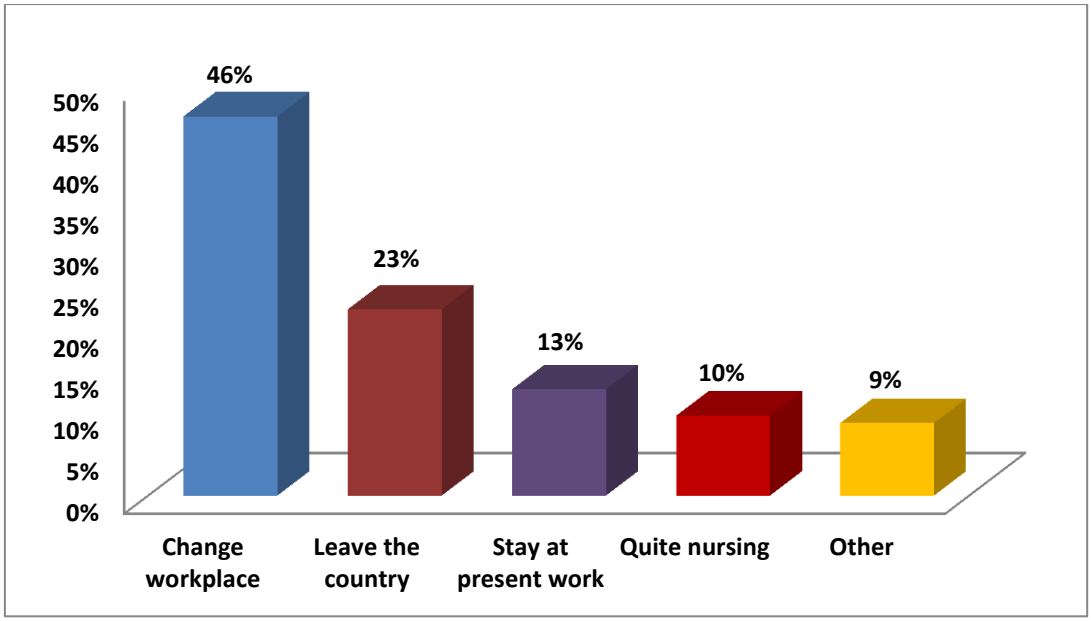


Figure (4.7) Distribution of responses in case of having other choices

Participants were asked in case they were having choices what they will do (Figure 4.7), the answers showed that 46% of them preferred to work in another organization with better conditions, 22.6% preferred to leave country searching for better work conditions, 12.9% preferred to stay at their present work as it is, 9.7% preferred to leave the field of nursing and work in another domain. These findings are consistent with the Quebec, Canada, which revealed that 61.5% intended to quit their present job for another job while 25.6% will remain in their profession and 12.9%, reported considering leaving the profession (Lavoie-Tremblay et. al, 2008). The reported choice of leaving the country is a dangerous indicator among Palestinians in Gaza. This could be also contributed to other life stressors such as the unstable political situation, siege, blockade and un-safe life related to bombardment especially in the last war at the end of year 2008.

These results reflect the nature of stress that nurses in UNRWA were experiencing at the current time and calls for investigating the root causes behind this dangerous feeling.

4.1.1.3 Workload domains

Table (4.5) Distribution of workload domains by central tendency measures

Domain	No. of Questions	Mean	%	SD
Working hours	8	2.81	70.25	0.389
Staffing	10	2.64	66.0	0.428
Facilities	9	2.61	65.25	0.299
System	10	2.62	65. 5	0.477
Overall perception	**37**	**2.67**	**66.75**	**0.294**

Table 4.5 presents the mean of employees' perceptions with respect to the workload domains namely; working hours, staffing, facilities and system. These are the domains of the workload against which the employees had judged their perceptions towards their workload. See Figure 4.8, and Annex 11.

The overall elicited workload score reflecting respondents perceptions was 2.67 out of four (66.75%); indicating a relatively moderate level. Working hours domain is related to time that nurses consume in job duty, adequacy of working hours for performing activities, staying after official hours to complete work, taking work at home, getting enough breaks, and difficulties in managing time. The working hour's domain elicited the highest mean score (2.81/4) among all domains, which may reflect the reasonable daily working hours at UNRWA. However, it is important that regular rest breaks are provided. Staffing domain is related to the kind and number of nurses recruited, it demonstrates perceptions on the efficacy of work design, fairness in dividing work, appropriate staff numbers, attitude toward manager and relationships with colleagues and manager; its score was 2.64/4. Deployment of resources, equitable distribution and utilization of appropriate staff to match the organization’s strategies remain important aspects of human resources management. These aspects are important because they guide the effective distribution, deployment and utilization of appropriate staff by placing them in the right jobs and

training as needed (WHO, 2002). The later actions may improve the attitudes about this domain.

Facilities domain is related to supplies availability to attain work needed by nurses at work and easing the work activities. In this study, it illustrates the perceptions about the use of computer as a facilitator, having adequate illumination and experiencing interruptions and disruptions. This domain elicited the lowest scores among all the domains (2.61/4). According to Kanter (1979), it is the mandate of management to create conditions for work effectiveness by ensuring that employees have access to empowerment structures of information, support and resources to achieve organizational goals and opportunity for development. Kanter claims that employees who have access to these structures are more productive, experience less burnout and have higher levels of organizational commitment. The working conditions such as the low ventilation, lack of appropriate lighting and inappropriate temperature levels are among the potential work-related stressors (European Organization for Safety and Health at Work- EOSHW, 2002)

System domain is related to organization regulations of nurses' work, it reflects perceptions about manager role, work system process and getting enough motivations; its score was 2.62/4; indicating unfavourable conditions in this regard. Nurse employees at UNRWA health centers are requesting more conducive work system along with opportunities for continued professional growth. This issue needs to be taken into consideration to improve the delivery of quality client care and the provision of quality services.

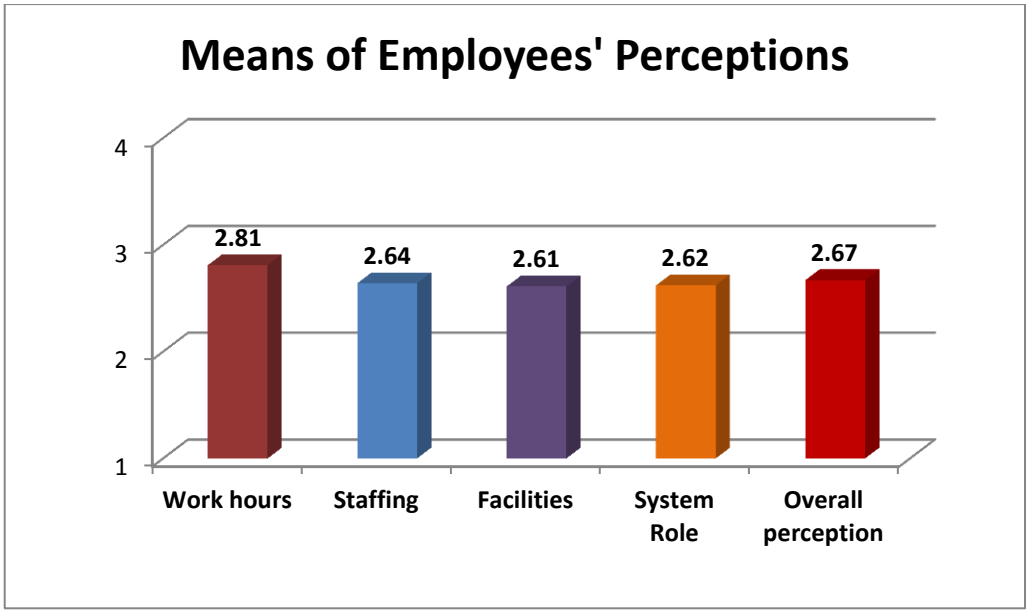


Figure (4.8) Means of work load domains by as reported by participants

4.1.2 Findings from observation

4.1.2.1 Workload Time Unit Value per Client

By observation and measurements of the timing consumed for conducting nursing procedures, 258 measurements were recorded, distributed by gender, speciality, shift, station and procedures (Annex 12).

Table (4.6) Central tendency measurements per case/client at each station in minutes (mm:ss) as time unit value

Station	Mean	Median	SD	Minimum	Maximum
PNC	13:40	13:48	1:09	11:56	15:41
ANC	8:58	9:07	1:23	6:30	11:00
FP	6:04	6:10	0:32	5:15	7:09
Dressing Room	4:37	4:37	1:14	2:44	6:05
Immunization	3:31	3:41	0:46	2:10	4:55
NCDs	3:08	2:44	0:58	2:09	5:10
Health screening	2:49	2:33	0:36	2:15	4:04
Injection room	1:15	1:15	0:11	0:56	1:34

Table 4.6 presents the time results obtained for each client in each station at UNRWA health centers. For example, the time unit value in minutes per client in NCDs station

ranged from 2:09 to 5:10 minutes with an average of 3:08 minutes and standard deviation (SD) of 0:58 and a median of 2:44 minutes. For PNC station, the average time consumed to provide services for each client in minutes was ‘13:40’ while it was ‘8:58’ at the ANC station; at FP station it was ‘6:04’; in injection room it was ‘1:15’; in health screening it was ‘2:49’; in immunization station it was ‘3:31’ and for providing dressing it was ‘4:37’. The highest variation between minimum and maximum unit value were observed for ANC clinic which may be explained by the variation among whether it is the first visit and/or the subsequent visit. New cases take longer time than cases that came for follow up. Clients came to receive PNC and ANC consumed more time from the staff than other type of clients.

The provided time measurement frame constitutes an important managerial tool for decision makers at UNRWA concerned with staffing level. It is advised that managers at UNRWA review these figures and match them with the number of clients visiting the health centres in reference to the number of available nurses at these centres. Decisions could be taken after to more appropriately deploy resources if needed.

4.1.2.2 Time consumed per nursing procedures

Table (4.7) Central tendency measurement by time consumed for conducting nursing procedures in minutes (mm:ss) as unit value

Activities	Mean	Median	SD	Minimum	Maximum
Minor dressing	4:37	4:37	1:14	2:44	6:05
Doppler	3:58	4:19	1:00	1:15	4:57
Documentation and counselling	3:49	2:56	2:47	0:46	12:04
Abdominal examination	2:03	2:10	0:29	0:52	2:34
Injection room (one injection)	1:15	1:15	0:11	0:56	1:34
Immunization (two injection)	1:06	1:03	0:17	0:41	1:43
BP measurement	0:55	0:54	0:06	0:30	1:12
Umbilical care	0:49	0:52	0:16	0:24	1:18
Weighting baby	0:19	0:20	0:05	0:10	0:31
Weighting adult	0:18	0:18	0:03	0:12	0:27

Table 4.7 presents the time consumed for each activity (assessed) performed at UNRWA health centers. For example, the time unit value in minutes for documentation and counselling ranged from 46 seconds to 12:04 minutes with average of 3:49 minutes; SD of 2:47 and median of 2:56 minutes. For documentation and counselling the average was ‘3:49’ and for BP measurement the average was ‘0:55’. The procedure of weighting the baby consumed ‘0:19’ in average; for weighting adult it was ‘0:18; for performing minor dressing it was ‘4:37’; for providing umbilical care it was ‘0:49; for doing doppler it was ‘3:58’; for carrying out abdominal examination it was ‘2:03’; while for immunizing a child with two injections it was ‘1:06’ and for one injection in the injection room it was ‘1:15’. The highest variations between minimum and maximum unit value were observed for documentation and counselling which may explained by presence of differences in number of papers to be filled and duties to be documented as a result in the variation in the documentation requirements.

The measurement of work time units is valuable not only to program evaluation but also for the development of a system for work assignment. Only by measuring a nursing program in nurse-time, we can correlate efforts with the various programs and be able to fully assess needs, aims, and accomplishments (Byrne, 1997). However, for any organization it is possible to develop a flexible, affordable template for measuring workload. The determined workload unit by this research could be the cornerstone of a comprehensive workload measurement system for nurses in UNRWA health centers. On the other hand, it's recommended to revise those units regularly to maintain the validity of the time unit values. These certainly should be done when there is consensus among the staff that the time does not reflect current practice. It was difficult to compare the findings in this study with other research as there is dearth of information in this regard.

4.2 Inferential analysis

In this section the researcher presents the differences in workload domains and time measurement in reference to other independent variables. Based on his best judgment, the researcher presented the results of inferential statistics based on their perceived importance and then statistical significance. Some relationships were presented as annexes.

4.2.1 Workload domains and characteristics variables

Table (4.8) Differences in perceptions of workload domains by residency

Dependent variables *(Domains)*	In-dependent variable *(Residency)*	N	Mean	SD	F	Sig.
Working hours	North Gaza	12	2.781	0.426	0.55	**0.699**
	Gaza	19	2.848	0.354		
	Midzone	24	2.895	0.394		
	Khan younis	7	3.000	0.367		
	Rafah	10	2.950	0.146		
Staffing	North Gaza	13	2.523	0.438	2.52	**0.049**
	Gaza	23	2.634	0.311		
	Midzone	23	2.887	0.561		
	Khan younis	5	2.340	0.207		
	Rafah	9	2.644	0.436		
Facilities	North Gaza	18	2.475	0.231	1.62	**0.177**
	Gaza	25	2.635	0.211		
	Midzone	24	2.699	0.401		
	Khan younis	6	2.518	0.269		
	Rafah	14	2.627	0.324		
System	North Gaza	18	2.638	0.484	0.40	**0.806**
	Gaza	23	2.569	0.592		
	Midzone	29	2.672	0.427		
	Khan younis	6	2.633	0.524		
	Rafah	13	2.784	0.479		
Overall	North Gaza	20	2.585	0.315	1.27	**0.286**
	Gaza	31	2.677	0.292		
	Midzone	33	2.778	0.331		
	Khan younis	9	2.701	0.381		
	Rafah	17	2.750	0.319		

One-way ANOVA was used to examine the differences in perceptions about workload domains in reference to place of residency of the study participants. Using the Post Hoc

test (Scheffe), higher mean scores were found in Midzone governorate followed by Rafah and Khanyounis. No statistically significant differences were noticed among the subjects who were living in different governorates towards the overall perception except in the staffing domain which shows statistically significant difference (P value 0.049) in this regard as shown in table 4.8. These results are inconsistent with the study of Al-Hour, (2010) in governmental PHC which showed statistical significant differences by governorates. This may be related to the better standardized and systematized system at UNRWA than the MOH.

This implies that measures should be taken cross board to more effectively manage workload in all UNRWA health centres.

Table (4.9) Differences in perceptions of workload domains by gender

Dependent variables ***(Domains)***	**In-dependent variable** ***(Gender)***	**N**	**Mean**	**SD**	**t**	**Sig.**
Working hours	Male	25	2.855	0.377	-0.415-	**0.679**
	Female	55	2.890	0.349		
Staffing	Male	27	2.596	0.392	-0.993-	**0.285**
	Female	55	2.705	0.500		
Facilities	Male	29	2.570	0.244	-0.660-	**0.511**
	Female	67	2.615	0.323		
System	Male	27	2.714	0.361	0.765	**0.446**
	Female	70	2.627	0.550		
Overall	Male	33	2.658	0.232	-0.917-	**0.361**
	Female	89	2.718	0.347		

The results presented in Table 4.9 showed that females had elicited higher overall mean scores than males but these variations were not statistically significant (P value 0.361). . This indicates that females and males suffer almost the same perceptions toward their workload.

Table (4.10) Differences in perceptions of workload domains by shift period

Dependent variables *(Domains)*	In-dependent variable *(Shift)*	N	Mean	SD	t	Sig.
Working hours	Morning	71	2.897	0.369	1.288	**0.044**
	Evening	9	2.736	0.181		
Staffing	Morning	76	2.686	0.468	1.197	**0.235**
	Evening	6	2.450	0.432		
Facilities	Morning	87	2.606	0.303	0.482	**0.631**
	Evening	9	2.555	0.288		
System Roles	Morning	91	2.653	0.505	0.174	**0.862**
	Evening	6	2.616	0.545		
Overall	Morning	111	2.709	0.323	0.800	**0.425**
	Evening	11	2.628	0.300		

By using t-test, as shown in table 4.10, no statistical significant differences in all domains of workload regarding shift period were found; although nurses who were working in morning shifts had more positive perceptions.

This may be related to the fact that all participants working in the morning shift or evening have the same perceptions. Also, according to UNRWA system, nurses are rotating between these shifts. However, there were statistically significant differences (P value 0.044) in perceptions with regard to working hours' domain. Those who were working in morning shifts had higher scores than evening shifts. It is worth noting that the number of human resources varies by the shift and usually less staff is assigned to evening shift.

Table (4.11) Differences in perceptions of workload domains by nursing speciality

Dependent variables *(Domains)*	In-dependent variable *(Nursing specialty)*	N	Mean	SD	F	Sig.
Working hours	Midwife	20	2.8250	0.345	0.370	**0.692**
	Practical nurse	42	2.8780	0.386		
	Staff nurse	17	2.9265	0.296		
Staffing	Midwife	23	2.5696	0.500	1.122	**0.331**
	Practical nurse	39	2.6487	0.451		
	Staff nurse	17	2.7941	0.476		
Facilities	Midwife	26	2.5940	0.328	4.433	**0.014**
	Practical nurse	48	2.5347	0.246		
	Staff nurse	22	2.7576	0.333		
System	Midwife	32	2.5094	0.626	1.851	**0.163**
	Practical nurse	45	2.7289	0.406		
	Staff nurse	19	2.6684	0.444		
Overall	Midwife	38	2.6585	0.398	1.215	**0.300**
	Practical nurse	59	2.6793	0.265		
	Staff nurse	22	2.7856	0.285		

Table 4.11 shows no statistically significant differences in participants' perceptions regarding the nursing specialty (P value 0.300) except the facilities domain which shows statistically significant differences regarding this issue. These results are in agreement with the study carried out by Al Hour (2010), as all nurses' categories and midwives have similar perceptions about workload. Nursing as a career is considered to be inherently stressful (Decker, 1997).

No statistically significant differences were noticed in perceptions about workload among subjects with different academic background, years of experience, receiving training; as shown in Annexes 13, 14 and 15. These results were consistent with the study carried out by Al Hour (2010) in the MOH PHC centres in which no significant differences were found among participants in reference to academic qualifications, years of experience and receiving training.

Table (4.12) Differences in perceptions of workload domains by having job description

Dependent variables *(Domains)*	In-dependent variable *(Have Job Description)*	N	Mean	SD	F	Sig.
Working hours	Yes	56	2.881	0.353	1.14	**0.325**
	No	11	2.852	0.339		
	DK	9	3.055	0.198		
Staffing	Yes	55	2.710	0.435	0.80	**0.450**
	No	14	2.535	0.556		
	DK	10	2.660	0.464		
Facilities	Yes	63	2.649	0.283	1.96	**0.147**
	No	19	2.497	0.282		
	DK	9	2.642	0.399		
System	Yes	68	2.752	0.415	6.58	**0.002**
	No	16	2.275	0.697		
	DK	8	2.575	0.465		
Overall	Yes	83	2.742	0.292	5.89	**0.004**
	No	19	2.498	0.328		
	DK	15	2.808	0.328		

In Table 4.12 above, by using Post Hoc test (Scheffe), high mean scores were elicited among persons who reported having job descriptions than those who don't have with statistically significant differences (P value 0.004). This result is inconsistent with the study carried out by El-Afifi, (2008) who found no significant differences regarding job description. Having job description plays an important role in decreasing work stress and subsequently work overload. Through providing job description, nurses gain a good understanding of how they can excel at their jobs. This helps nurses to manage the stress of overload by helping them to decide which jobs they should drop (Trainer Focus, 2008).

Table (4.13) Differences in perceptions of workload domains by having breaks

Dependent variables *(Domains)*	In-dependent variable *(Breaks)*	N	Mean	SD	t	Sig.
Working hours	Yes	20	2.950	0.356	1.035	**0.304**
	No	57	2.857	0.339		
Staffing	Yes	16	2.700	0.527	0.173	**0.863**
	No	62	2.677	0.449		
Facilities	Yes	20	2.683	0.332	1.317	**0.191**
	No	73	2.583	0.293		
System Roles	Yes	21	2.595	0.414	-0.625-	**0.533**
	No	72	2.673	0.528		
Overall	Yes	25	2.756	0.285	0.942	**0.348**
	No	93	2.689	0.322		

In Table 4.13, the overall perception of workload domains has been affected by whether employees were having breaks or not during work. Those who reported having breaks were elicited higher scores than those who don't but variations didn't reach statistically significances level (P value 0.348).

The important issue here is that the literature illustrates that the frequency and timing of breaks may be more important than the actual duration of break periods during a work shift (Boucsein and Thum, 1997). It is important that the UNRWA system to take into consideration providing break during work as it has positive effect on work process and the quality of care.

Table (4.14) Differences in perceptions of workload domains by work design

Dependent variables *(Domains)*	In-dependent variable *(Work design)*	N	Mean	SD	F	Sig.
Working hours	Rotation	39	2.8942	0.333	0.935	**0.397**
	Fixed	28	2.9554	0.291		
	Randomly	10	2.7875	0.460		
Staff and relations	Rotation	40	2.8150	0.406	5.492	**0.006**
	Fixed	29	2.5897	0.435		
	Randomly	9	2.355	0.403		
Facilities	Rotation	47	2.671	0.308	3.598	**0.031**
	Fixed	38	2.529	0.252		
	Randomly	8	2.458	0.299		
System roles	Rotation	50	2.760	0.389	2.279	**0.108**
	Fixed	35	2.545	0.578		
	Randomly	8	2.550	0.537		
Overall	Rotation	58	2.777	0.265	3.412	**0.036**
	Fixed	47	2.650	0.344		
	Randomly	13	2.585	0.318		

Post Hoc test (Scheffe), shows higher mean scores of participants who were working according to rotation system with statistically significant differences (P value 0.036). When employees rotate across different positions regularly, they experience less boredom, greater task variety, less burn out and decreased feelings of needless repetition (McDonough, 2010). Burnout is detrimental to work because it tends to decreased productivity, increased absenteeism, and increased likelihood of depersonalization, which all lead to organizational dysfunction (Table 4.14).

4.2.2 Time Observation results

Table (4.15) Differences in the time consumed for conducting nursing procedures in minutes according to service delivery points

Dependent variables *(Procedures)*	In-dependent variable *(Station)*	N	Mean	SD	F	Sig.
Documentation and counselling	NCDs	11	01:58	00:58	128.12	**0.000**
	PNC	10	09:32	01:21		
	ANC	13	03:48	00:51		
	FP	10	04:51	00:29		
	Health screening	10	01:26	00:40		
	Immunization	13	02:04	00:34		
	Total	67	03:49	02:47		
BP	NCDs	11	00:56	00:05	1.517	**0.212**
	PNC	10	00:53	00:04		
	ANC	13	00:52	00:04		
	FP	10	00:54	00:05		
	Health screening	10	00:58	00:11		
	Total	54	00:55	00:06		
Weighting adult	NCDs	11	00:16	00:02	4.944	**0.005**
	ANC	13	00:19	00:02		
	FP	10	00:19	00:02		
	Health screening	10	00:20	00:04		
	Total	44	00:18	00:03		
Weighting baby	PNC	10	00:15	00:04	16.933	**0.000**
	Immunization	13	00:22	00:03		
	Total	23	00:19	00:05		

Table 4.15 illustrates the differences in the time measurements of nursing procedures at different nursing service delivery points. Statistical significant differences were found in the time needed to conduct nursing procedures in relation to the service delivery points (Except in BP measurements). The revealed variations reflect the nature of the procedure at the different service delivery point. For instance, the mean time for documentation and counselling was much higher in PNC and FP than at other services with statistically

significant variations (P value 0.000). Similarly, the time needed for weighting adults and doing health screening showed statistically significant differences a cross the different work stations with statistically significant variations. The revealed variations are important to consider upon deciding human resources deployment.

Table (4.16) Differences in nursing activity procedures time per unit according to nursing title

Dependent variables ***(Procedures)***	**In-dependent variable** ***(nursing title)***	**N**	**Mean**	**SD**	**F**	**Sig.**
Documentation and counselling	Staff nurse	3	08:57	01:25	44.493	**0.000**
	Practical	34	01:50	00:46		
	Midwife	30	05:33	02:34		
BP	Staff nurse	3	00:54	00:02	2.706	**0.076**
	Practical	21	00:57	00:08		
	Midwife	30	00:53	00:04		
Weighting baby	Staff nurse	3	00:15	00:02	8.063	**0.003**
	Practical	13	00:22	00:03		
	Midwife	7	00:15	00:05		
Weighting adult	Practical	21	00:18	00:04	0.991	**0.325**
	Midwife	23	00:19	00:02		
Umbilical care	Staff nurse	3	00:56	00:22	0.745	**0.413**
	Midwife	7	00:46	00:14		
Abdomen exam.	Staff nurse	3	02:13	00:20	0.539	**0.484**
	Midwife	7	01:58	00:32		

Table 4.16, shows the relationships between nurses' job titles and the time consumed during performing nursing activities. There were statistically significant differences between nurses' job titles and documentation and counselling (P value 0.000) and weighting baby (P value 0.003). Post Hoc (Scheffe) test indicated that staff nurses spent more time in documentation and counselling than other categories. This could be explained by the assumption that staff nurses may perform deeper counselling to certain category of cases. The number of staff nurses was limited (only three) and this call for studying this phenomenon in more depth. Also the time consumed by practical nurses (00:22 min) in

relation to weighting the baby procedures was higher than midwives and staff nurses and the variations in the time consumed were statistically significant (P value 0.003) The researcher wasn't able to provide a convincing explanation of the revealed variations in this regard. Other results in the same table showed no statistically significant differences between BP, weighting baby, umbilical care and abdominal examination measurements and job title. Again higher mean scores of staff nurses appears in umbilical care and abdominal examination, while the high mean for practical nurses appears in measurements of Weighting baby and measuring BP. These findings require more in-depth investigating, but generally it could be related to the level of care that can be provided in reference to job title. For example, risky cases could be managed by staff nurses rather than practical nurses.

Table (4.17) Differences in nursing activity procedures time according to gender

Dependent variables *(procedures)*	**In-dependent variable *(Gender)***	**N**	**Mean**	**SD**	**t**	**Sig.**
Documentation and counselling	Male	19	02:01	02:05	-3.622	**0.001**
	Female	48	09:32	01:21		
BP	Male	19	00:56	00:07	1.254	**0.215**
	Female	35	00:54	00:05		
Weighting adult	Male	19	00:18	00:04	-1.012	**0.359**
	Female	25	00:19	00:02		

Results show that there are statistically significant differences in the time consumed in documentation and counselling (P value 0.001) as females consumed more time than males (Table 4.17). This could be attributed to the nature of documentation and counselling as service delivery points vary in their documentation requirement (PNC consumes a lot of time while dressing and NDC require less). No statistically significant differences were found in relation to the time consumed by males versus females in BP measurement and

weighting adult. This may be related to standardized requirement procedures of measuring BP and weight.

Table (4.18) Differences in time consumed during nursing procedures according to shift

Dependent variables *(procedures)*	In-dependent variable *(Shift)*	N	Mean	SD	t	Sig.
Weighting adult	Morning	40	00:18	00:03	-1.289	**0.205**
	Evening	4	00:20	00:02		
Weighting baby	Morning	20	00:19	00:05	-0.578	**0.569**
	Evening	3	00:21	00:02		
BP	Morning	50	00:55	00:06	0.048	**0.962**
	Evening	4	00:54	00:06		
Documentation and counselling	Morning	60	03:52	02:56	0.507	**0.303**
	Evening	7	03:18	01:01		
Immunization	Morning	10	01:09	00:19	1.219	**0.248**
	Evening	3	00:56	00:06		
Doppler	Morning	10	03:46	01:04	-1.334	**0.209**
	Evening	3	04:38	00:19		

As clearly seen in table 4.18, there were some variations in the time consumed during conducting nursing procedures. Some procedures consumed more time at the evening shift such as Doppler and measuring weight. Others, such as documentation and counselling more time were consumed in the morning shift. Shifts related variations were not statistically significant.

Table (4.19) Differences in station client time per unit in minutes according to gender

Dependent variables *(Stations)*	In-dependent variable *(Gender)*	N	Mean	SD	t	Sig.
NCDs	Male	31	01:01	00:53	-0.975	**0.337**
	Female	2	01:33	01:03		
Dressing Room	Male	9	04:26	01:16	-1.081	**0.308**
	Female	2	05:29	00:49		
Health screening	Male	24	00:48	00:23	-2.160	**0.256**
	Female	6	01:21	01:03		

In table 4.19 no statistically significant differences were found in relation to the time consumed by males versus females regarding to stations they work in. Some variations in the time consumed in stations were found. All stations that shared by both gender consumed more time by females than males.

Chapter 5

Conclusion and Recommendations

Conclusion and Recommendations

This chapter provides the main conclusions of this study as well as some recommendations for decision makers that may help in adopting better nursing staffing system in UNRWA health centers.

5.1 Conclusion

Nursing in primary health centers play a vital role in providing high quality services to meet needs of clients, community, and health cadres, and to ensure quality services it should be managed well. A realistic and accurate assessment of workload status in nursing stations is necessary for effective distribution of resources between stations and for effective management. The primary objective of this study is to understand the workload status in nursing stations at UNRWA health centers in Gaza governorates. The study focused on two fronts; assessing perceptions of nurses about their workload and measuring the time units consumed in implementing the common nursing procedures at service delivery points.

The literature supports the notion that it is possible to develop a flexible, affordable template for measuring workload. It also reflects the importance of managing nursing station environment, and facilities.

Several factors affect and are affected by the workload such as working hours, facilities, system, staffing, environmental condition, nurses characteristics such as age, gender, and experience. Also, management related factors such as supervision, job description, training and job design are important in this regard.

The study results show that almost all participants heard about the term workload; most of them thought that the system don’t permit for breaks during working hours. Also, most of

them reported having written job description. Most participants feel that they experience workload and near half of them wish to work in another work place with better conditions. The most reported factors contributing to workload were facilities and system domains.

The study revealed that most of the nurses believed that over-workload exists in UNRWA health centers and they attributed their feeling of being overloaded to factors such as increasing paperwork, inadequacy of staff, increasing work intensity, additional non-nursing job duties, and external interruptions/noise. Participants' perceptions reflected in relatively moderate scores about their workload. Generally, working hour's domain was scored the highest among all domains, followed by system domain and the staffing and facilities domains elicited lowest scores. The revealed domains constitute a frame of interventions that requires considerations by decision makers.

There were no statistically significant differences in perceptions about workload in relation to gender, age, experience, qualification, residency, training, shift period and having breaks during work. In contrary, statistical significant differences were noting in relation to job description and work design.

The study provided time unit measurements for the commonly implemented procedures namely; documentation and counselling, BP measurement, giving 2 injections immune, giving one injection in injection room, making dressing, using doppler, abdominal examination, umbilical care, weighting baby and weighting adult.

The most time consuming procedures were performing minor dressing and doppler and the least timing consuming procedures were weighting adult and weighting baby.

There were statistically significant differences between the time unit value consumed in conducting nursing procedures and service delivery points due to the variations in the nature of work done at these units.

5.2 Recommendations

1. The study revealed the UNRWA nurses are generally overloaded as reported by them based on their perceptions. The revealed workload domains need to be considered by UNRWA management in order to maintain appropriate staffing level.
2. Considering factors contributing to workload revealed in this study and responding to them particularly facilities and system domains.
3. To improve nurses' perceptions about their workload, UNRWA needs to pay more attention to provide nurses with facilities needed for work and to promote work systems in a way that decreases workload.
4. Utilizing the time unit values revealed by the study in the clinical settings. On the light of the study findings, UNRWA management needs to revise the current staffing level and deploy resources more effectively as relevant.
5. Promoting awareness about workload among UNRWA nurses and nurse managers. This includes providing training, workshops and dialogue about workload.
6. Establishing a system for workload assessment at health centres is essential.
7. Reducing paper work and repetitive documentations through the use of computerized health information systems.
8. Considering providing breaks during working hours to allow nurses relax and have rest periods which are important for the delivery of safe quality services.
9. As much as possible, utilizing job redesign strategies such as job rotation and job enrichment as such strategies reduce burn out and the feeling of being overloaded.

10. Establishing a system for monitoring and evaluating workload at health centres.
11. Decreasing interruptions at workplace through appropriate distribution of human resources and clarifying roles and responsibilities.
12. Considering separation of the duties that are not related to clients' care to administrative people and/or to consider this additional load on deploying human resources.

5.2.1 Recommendation for further research

Researchers are advised to take further studies about

- Studying workload in reference to patients' numbers and services statistics.
- Workload measurement in other health organizations and different settings.
- Workload measurement among other health professions.

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Annexes

Annex (1): Map of Gaza

PASSIA, 2009

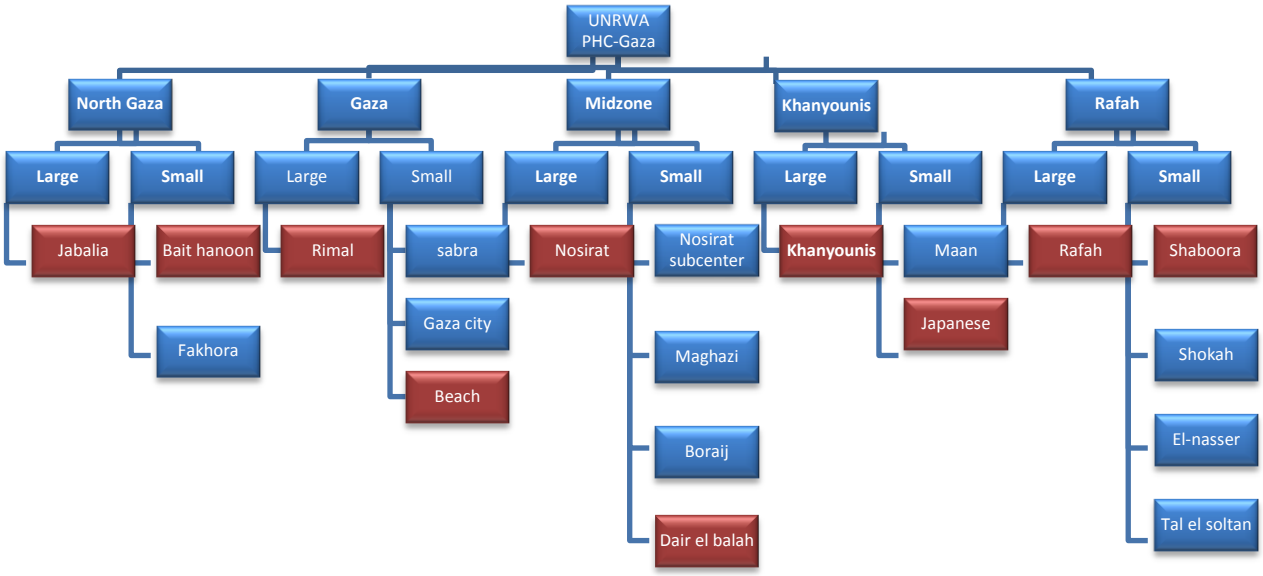
Annex (2): UNRWA health staff in Gaza

Number of permanent medical services employees working at UNRWA health clinics in Gaza Governorates at end of 2008

Medical care services	Numbers
Doctors	147
Pharmacists	2
Dental surgeons	35
Nurses	292
Paramedical	130
Admin/support staff	119
Labour category	122
Total	850

Annex (3): Sample process – multi stage sample

Distribution of UNRWA health centers in GS according to size and location



UNRWA health centers included in the study

Governorate	Large health centers	Small health centers
North	Jabalia	Bait hanon
Gaza	Rimal	Beach
Mid zone	Nusirat	Dair el balah
Khanyounis	Khanyounis	Japanese
Rafah	Rafah	Shaboora

Annex (4): An official letter of request

Al-Quds University
Jerusalem
School of Public Health

جـامـعـة الـقـدس
القدس
كلية الصحة العامة

2010/7/11

الأخ/د. محمد المقادمة المحترم
مدير برنامج الصحة–وكالة الغوث
تحية طيبة وبعد،،،

الموضوع: مساعدة الطالب/ رياض عوض دياب

يرغب الطالب المذكور أعلاه بإجراء بحث بعنوان:

"Workload Status at Nursing Stations in UNRWA Health Centers – Gaza Governorates"

كمتطلب للحصول على درجة الماجستير في الصحة العامة–مسار إدارة صحية و عليه نرجو التكرم للإيعاز لمن ترونه مناسب لتسهيل مهمة الطالب في جمع البيانات اللازمة من عيادات الرعاية الأولية التابعة لوكالة الغوث.
علماً بأن المعلومات ستكون متوفرة لدى الباحث و الجامعة فقط و سيقوم بأطلاعكم على النتائج حينها.

و اقبلوا فائق التحية و الاحترام،،،

د. بسام أبو حميد
منسق عام برامج الصحة العامة

نسخة:
– الملف

Jerusalem Branch/Telefax 02-24799234
Gaza Branch/telefax 08-2884422-2884411
Sphealth@admin.alquds.edu
فرع القدس/تلفاكس 02-2799234
فرع غزة/تلفاكس 08-2884422-2884411
ص.ب/51000-القدس

Annex (5): Helsinki committee approval

12

Palestinian National Authority
Ministry of Health
Helsinki Committee

السلطة الوطنية الفلسطينية
وزارة الصحة
لجنة هلسنكي

التاريخ7/6/2010

Name:

الاسم: رياض عوض دياب

I would like to inform you that the committee has discussed your application about:

Workload status at nursing stations in UNRWA health centers-Gaza Governorates.

نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:-

In its meeting on June 2010
and decided the Following:-
To approve the above mention research study.

و ذلك في جلستها المنعقدة لشهر 6 2010
و قد قررت ما يلي:-
الموافقة على البحث المذكور عاليه.

Signature
توقيع

Member
عضو

Member
عضو

Chairperson

Conditions:-

- Valid for 2 years from the date of approval to start.
- It is necessary to notify the committee in any change in the admitted study protocol.
- The committee appreciate receiving one copy of your final research when it is completed.

Annex (6): Agreement letter from UNRWA chief field health programme, Gaza field office

Jul 2010 8:42 UNRWA-HEALTH 7934 p.1

File

HMG/M/204 July 14, 2010

الدكتور / بسام أبو حمد
منسق عام برامج الصحة العامة
جامعة القدس

الموضوع : **مساعدة الطالب / رياض عوض دياب**

بالإشارة إلى رسالتكم الموجه للسيد مدير برنامج الصحة بوكالة الغوث الدولية بتاريخ ٢٠١٠/٧/١١ نحيط سيادتكم علماً أنه لا مانع لدينا من مساعدة الطالب / **رياض عوض دياب** في جمع البيانات اللازمة من عيادات الرعاية الأولية بوكالة الغوث الدولية.

وتفضلوا بقبول فائق الاحترام ،

د. محمد المقادمة
مدير برنامج الصحة بوكالة الغوث الدولية

Cc: FMD

nb/Research

ed nations relief and
egency for palestine
jees in the near east

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www.unrwa.org

Annex (7): Employee's questionnaire and extraction sheet questionnaire

Workload status at nursing stations in UNRWA health centers-Gaza Governorates

Dear participant:

I am Riyad Diab, student in the master program of public health at Al Quds university-Palestine. I am conducting a research as a part of my study at the university. The purpose of this study is to assess and develop a measurement of the workload at nursing stations in UNRWA health centers in Gaza in order to provide a set of recommendations that possibly improve the nursing workload status. There is no "right" or "wrong" answers. Please reflect carefully and answer all questions as honestly as possible based upon your knowledge of UNRWA.

Your response will be kept confidential and will be aggregated with other responses so individual respondents cannot be identified. Some questions in this survey might sound similar to others. Please answer ALL of the questions as much as possible.

The questionnaire takes 20 minutes. Your participation is voluntary and you have the right to withdraw at any time.

Thank you for taking the time to fill out this questionnaire.

Thank you for your participant and patience.

The researcher

Riyad Diab

Questionnaire No		**Date**	
Name of health center		**Health center location**	
Shift			

Socio-demographic section

1- Gender	a- Male	b- Female			
2- Age in year	_____				
3- Marital status	a- Single	b- Married	c- Other, specify _____		
4- No. of household members _____					
5- Place of residency _____					
6- Qualification	a- 2 years diploma	b- 3 years diploma	c- Bachelor	d- High education	
7- Category of nursing specialty	a- Senior staff nurse	b- Staff nurse	c- Senior practical nurse	d- Practical nurse	e- Midwife
8- Experience years in nursing _____					
9- Experience in your present health center _____					
10- Did you work in other organizations before?	a- Yes	b- No			
11- Have you ever received training courses after graduation?	a- Yes	b- No skip to Q13			

12- If yes, specify

No.	Type of training	Number of courses	Organizer 1-Self 2-organization 3- others
1			
2			
3			
4			

Organizational factors

13- Size of population served by your health center _____ Don't Know _____			
14- Total number of nurses(midwives, practical and staffs) in your shift _____ Don't Know _____			
15- Number of clients you see each day (in average) _____ Don't Know _____			
16- Do you have a written job description in this organization?	a- Yes	b- No	c- Don't Know
17- Is there a need for job description	a- Yes	b- No	c- Don't Know
18- Does the system of the health center permit having breaks during working hours?	a- Yes	b- No	c- Don't Know
19- Is there a responsible nurse in the health center?	a- Yes	b- No	c- Don't Know
20- The responsible nurse is qualified enough to manage the work?	a- Yes	b- No	c- Don't Know
21- The work inside your clinic is designed as			

a- Rotation mostly in all activities	b- Fixed activities assigned to everyone all the time mostly	c- Randomly

Questions about workload

22- Have you ever heard about the term workload		a- Yes	b- No
23- Is workload measurement can bring benefits to your work?			
a- Yes	b- No	c- Don't Know	
24- Is there a workload measurement of nursing activities in your health center?			
a- Yes	b- No	c- Don't Know	
25- Do you feel that you are overloaded?	a- Yes	b- No skip to Q27	

26- If yes , please indicate to the factors that attributed to your overload (you can point more than one factor)

Inadequate staff	a- Yes	b- No
Additional job duties	a- Yes	b- No
Training of new employees or trainees	a- Yes	b- No
Lack of resources	a- Yes	b- No
Increasing paperwork	a- Yes	b- No
Increased intensity of work	a- Yes	b- No
Improper working environment	a- Yes	b- No
Work neglected by my colleagues	a- Yes	b- No
Absence of clear job description	a- Yes	b- No
Lack of skills	a- Yes	b- No
Errors in daily work distribution	a- Yes	b- No
External noise	a- Yes	b- No
Internal disruption	a- Yes	b- No
In efficient work processes	a- Yes	b- No
Contradictory decisions by managers	a- Yes	b- No
Unclear work processes	a- Yes	b- No

Domains of workload

Please put suitable number or letters that represents :
(1) strongly not agree (2) not agree (3) agree (4) strongly agree (NA) not applicable (DK) do not know

Working hours		
27-	Your daily working hours are adequate enough for doing your activities	
28-	You get enough breaks in your work	
29-	In your workplace time is wasted because of inefficiencies	
30-	You forced to get up early every day to go to your work?	
31-	You stay after the official working hrs to finish your tasks	
32-	You take work home	
33-	You feel that your time is not utilized	
34-	You seek the help of others to finish your tasks	
Staffing		
35-	Your health center has adequate number of nurses	
36-	The way the work designed inside the clinic is transparent	
37-	The work is divided fairly between the colleagues	
38-	There is cooperation between the colleagues inside the health center	

39-	Staffing level in your health center is fair	
40-	Staffing level in your health center is transparent	
41-	Before staffing decision, your manager informs you about his/her plans	
42-	You are able to discuss staffing related issues with your manager	
43-	You have good relationship with your manager	
44-	Clashes at work consume your time	
Facilities		
45-	The use of computer in your work is a work facilitator	
46-	You have enough space in your working area	
47-	Your work environment as a whole is comfortable	
48-	You are working at a temperature controlled work place	
49-	There are frequent interruptions and distractions when performing your duties	
50-	Internal interruptions and destructions are mostly more than external one	
51-	Interruptions and destructions could not affect accomplishment of your activities	
52-	Workload has a negative impact on your personal life	
53-	You perceive your performance within such workload as good	
System		
54-	your manager provides you regulatory ongoing guidance (act as counselor)	
55-	Your manager performs on-the- job training for you	
56-	Your manager provides ongoing feedback about yours' performance	
57-	Your manager provides support for your offload and manage the intensive nature of the work	
58-	Your manager ensures that you have adequate facilities	
59-	Your manager often represents your requests to management	
60-	The work system offers you enough motivations	
61-	The work processes are not efficient	
62-	The work system is duplicative in nature	
63-	Documentation practices are duplicative	

64- If you have the choice, you prefer:	
a-	To work in another organization with better conditions
b-	To leave your field and work in other domains
c-	To leave your country
d-	Others, specify _____

Extraction sheet

Observed time for each nursing activity:

Name of clinic: _____ Location: _____ Type/Level: _____

Date	Sub Clinic	Activity	Observed time (Min.)	Nurse' position	Gender

Annex (8): Arabic employee's questionnaire and extraction sheet

استبيان

حالة عبء العمل في محطات التمريض في المراكز الصحية التابعة لوكالة غوث وتشغيل اللاجئين في محافظات غزة

عزيزي المشارك:

أنا الباحث رياض دياب, طالب في برنامج الماجستير في كلية الصحة العامة جامعة القدس – فلسطين.

أقوم بهذا البحث كجزء من دراستي في الجامعة وهدف هذه الدراسة هو معاينة و قياس عبء العمل في محطات التمريض في المراكز الصحية التابعة لوكالة غوث وتشغيل اللاجئين في محافظات غزة لكي أضع مقترحات ممكن أن تساهم في تحسين حالة حجم العمل التمريضي.

لا يوجد اجابات خاطئة أو صائبة لذا أرجو أن تجب على جميع الأسئلة بمصداقية قدر الإمكان حسب خبرتك العملية في وكالة غوث وتشغيل اللاجئين.

اجاباتك ستكون سرية وستجمع مع الاجابات الاخرى لذلك أرجو إجابة جميع الأسئلة.

الاستبيان يستغرق أقل من 20 دقيقة.

مشاركتك طوعية و لك الحق في الإنسحاب وقتما تشاء.

شكرا لوقتك الثمين في اجابة هذا الاستبيان

وشكرا لمشاركتك

الباحث

رياض دياب

رقم الاستبيان		**التاريخ**	
اسم المركز الصحي		**مكان المركز الصحي**	
فترة الدوام			

المعلومات الشخصية

(1) الجنس	ذكر			أنثى	
(2) العمر	_____ سنة				
(3) الحالة الإجتماعية	أعزب	متزوج	أخرى/ حدد _____		
(4) عدد أفراد الأسرة					
(5) مكان الاقامة					
(6) المؤهل العلمي	دبلوم سنتان	دبلوم 3 سنوات	بكالوريوس	دراسات عليا	
(7) المسمى الوظيفي	مشرف تمريض	ممرض مؤهل	مشرف تمريض عملي	ممرض عملي	قابلة قانونية
(8) عدد سنوات الخبرة في التمريض					
(9) عدد سنوات الخبرة في مكان عملك الحالي					

(10)	هل عملت في مؤسسات أخرى سابقا ؟	نعم	لا
(11)	هل تلقيت دورات تدريبية بعد تخرجك؟	نعم	لا (إذهب للسؤال رقم 13)

(12) إذا كانت الإجابة نعم حدد

م	نوع التدريب	عدد الدورات	منظم الدورات 1- المؤسسة 2- شخصي 3- كلاهما
1			
2			
3			

عوامل تنظيمية

(13)	عدد المستفيدين من الخدمة الصحية في مركزك الصحي _____ لا أعرف _____			
(14)	عدد التمريض الإجمالي في فترة دوامك في مركزك الصحي _____ لا أعرف _____			
(15)	عدد المستفيدين الذين تقدم لهم الخدمة يوميا (بالمتوسط) _____ لا أعرف _____ لا ينطبق _____			
(16)	هل يوجد وصف وظيفي مكتوب في مركزك الصحي	نعم	لا	لا أعرف
(17)	هل هناك حاجة للوصف الوظيفي	نعم	لا	لا أعرف
(18)	هل نظام مؤسستك يسمح لك بفترات استراحة أثناء الدوام	نعم	لا	لا أعرف
(19)	هل يوجد مسئول تمريض في مركزك الصحي	نعم	لا	لا ينطبق
(20)	الممرض المسئول مؤهل كفاية لإدارة العمل	نعم	لا	لا ينطبق
(21)	العمل داخل عيادتك مصمم بالطريقة التالية			

تبديل (تدوير) غالبا في كل النشاطات	نشاطات ثابتة مصممة لكل شخص في كل الأوقات	عشوائي

أسئلة خاصة بعبء العمل

(22) هل سمعت بالمصطلح (عبء العمل)		نعم	لا
(23) هل قياس عبء العمل ممكن أن يجلب المنفعة للعمل	نعم	لا	لا أعرف
(24) هل يوجد مقياس لعبء العمل لنشاطات التمريض في عيادتك	نعم	لا	لا أعرف
(25) هل تشعر بأن حجم عملك كبير	نعم	لا (اذهب الي السؤال 27)	

(26) اذا كانت الاجابة نعم أشر من فضلك على العوامل التالية التي تؤثر على حجم عملك (بإمكانك الاشارة على أكثر من عامل)

نقص في اعداد التمريض	
مهام عمل إضافية	
تدريب موظفين جدد أم متدربين	
نقص في الموارد	
ضخامة الأعمال الكتابية والتسجيل	
كثافة العمل كبيرة	
بيئة العمل غير مناسبة	
تجاهل العمل من قبل بعض الزملاء	
غياب وصف وظيفي واضح	
نقص في المهارات	
توزيع العمل اليومي خاطئ	
ضوضاء وفوضى خارجية	
تشتيت ومقاطعة داخلية	
عدم كفاءة عملية سير العمل	
تضارب في قرارات المدراء	
عملية سير العمل غير واضحة	

محاور حجم العمل

من فضلك ضع الرقم او الاحرف المناسبة امام الفقرات التالية والتي تتمثل على النحو التالي: **(1) لأ أوافق بشدة (2) لا أوافق (3) أوافق (4) أوافق بشدة (NA) لا ينطبق (DK) لا أعرف**		
ساعات العمل		
(27)	ساعات العمل اليومية كافية لإنجاز مهماتي	
(28)	أحصل على فترات استراحة كافية أثناء الدوام	
(29)	الوقت يضيع اثناء العمل لعدم النجاعة في العمل	
(30)	تكون مجبراً للاستيقاظ مبكراً كل يوم للذهاب لعملك	
(31)	تبقى بعد انتهاء الدوام الرسمي لإنجاز العمل	
(32)	تأخذ عملك للبيت	
(33)	تشعر بأن وقتك غير مستخدم	
(34)	تطلب مساعدة الآخرين لإنجاز عملك	
التوظيف		
(35)	عدد التمريض كافي في المركز الصحي الذي تعمل به	
(36)	هناك شفافية عالية في تصميم العمل داخل مركزك الصحي	

	(37)	توزيع العمل بين الزملاء يتم بشكل عادل	
	(38)	هناك تعاون بين الزملاء في المركز الصحي	
	(39)	مستوى توزيع التوظيف في المركز الصحي عادل	
	(40)	هناك شفافية في توزيع التوظيف	
	(41)	قبل قرار التوظيف يخبرك مديرك بخططه	
	(42)	تكون قادرا على مناقشة مسائل التمريض مع مديرك	
	(43)	علاقتك بمديرك في العيادة جيدة	
	(44)	النزاعات في العمل تستنفذ معظم وقتك	
التسهيلات			
	(45)	الحاسوب ضروري لتسهيل مهام عملك	
	(46)	لديك مساحة كافية للعمل في مكان عملك	
	(47)	بيئة العمل بشكل عام مريحة	
	(48)	تعمل ضمن مكان عمل ذات حرارة مناسبة	
	(49)	يوجد مقاطعة وتشتيت أثناء انجاز عملك	
	(50)	التشتيت والمقاطعة الداخلية اكبر من الخارجية في الغالب	
	(51)	الشتيت والمقاطعة لا تؤثر على حجم العمل	
	(52)	حجم العمل الزائد له ائر سلبي على حياتك الشخصية	
	(53)	يمكن ان تصف آداء العمل ضمن حجم العمل الزائد بأنه جيد	
النظام			
	(54)	مديرك يزودك بارشادات بشكل مستمر ومنتظم	
	(55)	مديرك يقوم بتدريبك داخل مكان عملك	
	(56)	مديرك يزودك بتغذية راجعة عن ادائك	
	(57)	مديرك يزودك بالدعم والمساندة لإزالة الضغط في العمل ويدير طبيعة العمل المثقلة	
	(58)	مديرك يضمن لك التسهيلات اللازمة للعمل	
	(59)	مديرك يوصل متطلباتك للادارة غالباً	
	(60)	نظام العمل يعطيك حافز كافي	
	(61)	يسير العمل بطريقة غير كفؤة	
	(62)	نظام العمل بطبيعته به ازدواجية	
	(63)	يوجد ازدواجية في عملية التوثيق	

اختر اجابة واحدة للسؤال التالي :-

	(64) **إذا كان الخيار بيدك فإنك تفضل**
أ	العمل في مكان آخر بظروف أحسن
ب	تترك مجال عملك و تعمل في مجال أخر
ج	تترك البلد
د	أخرى, اذكرها

Extraction sheet

الوقت الملاحظ لكل نشاط تمريضي:

اسم المركز الصحي _____ المكان _____ الفترة _____

التاريخ	العيادة	النشاط التمريضي	الوقت الملاحظ (بالدقيقة)	المسمى الوظيفي	الجنس

Annex (9): Request for evaluation and controlling questionnaire

استمارة تحكيم

الدكتور/ _____ حفظه الله

السلام عليكم و رحمة الله ،،،،

يقوم الباحث **رياض عوض دياب** بإجراء دراسة بعنوان:

Workload Status at Nursing Stations in UNRWA Health Centers – Gaza Governorates

و ذلك استكمالا لمتطلبات الحصول على درجة الماجستير في الصحة العامة - مسار إدارة صحية .

نظرا لثقة الباحث الشديدة بكم فإنه يضع بين أيديكم أداة الدراسة الموجهة ببحث حالة عبء العمل في محطات التمريض في عيادات الرعاية الاولية في وكالة غوث وتشغيل اللاجئين في محافظات غزة. فأرجو منكم إبداء الرأي في الفقرات والأبعاد للوقوف على صحة و صدق فقراتها، و كذلك مدى ملاءمتها لأهداف الدراسة, حيث أنظر إلى ملاحظاتكم و أراءكم النيرة بدرجة بالغة لإثراء الاستبانة لتكون أكثر منهجية و تحقق الأهداف المرجوة منها.

ملاحظة: مرفق أهداف الدراسة والأسئلة المراد الإجابة عليها من هذه الدراسة الاستبانة.

شاكرين لكم مساهمتكم ودعمكم للبحث العلمي بصفة عامة ولهذه الدراسة بصفة خاصة.

الباحث

رياض دياب

للتواصل:

جوال: 0599761674

بريد الكتروني: rad781@yahoo.com

Annex (10): Names of expert

1.	Dr. Yehia Abed	Al-Quds University
2.	Dr. Majed El-Farra	Islamic University
3.	Dr. Wael Thabet	Al-Azhar University
4.	Mr. Jehad Mattar	MOH, PHC nursing director
5.	Mr. Ibrahim Al-Hour	MOH, PHC
6.	Mr. Sadi Abu Awwad	Al-Quds University
7.	Mrs. Fayza Al-Sharif	UNRWA nursing Officer, Gaza
8.	Mrs. Reem Abu-Shomar	UNDP, Gaza
9.	Mrs. Kifah El Najjar	UNRWA, Medical officer Beach

Annex (11-a): Perception of employees toward workload domains questions

Category	Mean	SD
Working hours	**2.81**	**0.389**
Your daily working hours are adequate enough for doing your activities	2.86	0.775
You get enough breaks in your work	1.69	0.787
In your workplace time is wasted because of inefficiencies	3.47	0.612
You forced to get up early every day to go to your work	2.31	1.208
You stay after the official working hours to finish your tasks	2.98	0.761
You take work home	3.10	0.964
You feel that your time is not utilized	3.33	0.931
You seek the help of others to finish your tasks	2.75	0.956
Staffing	**2.64**	**0.428**
Your health center has adequate number of nurses	2.04	0.916
The way the work designed inside the clinic is transparent	2.59	0.853
The work is divided fairly between the colleagues	2.45	0.832
There is cooperation between the colleagues inside the health center	2.88	0.739
Staffing level in your health center is fair	2.39	0.777
Staffing level in your health center is transparent	2.45	0.673
Before staffing decision, your manager informs you about his/her plans	2.31	0.905
You are able to discuss staffing related issues with your manager	3.08	0.717
You have good relationship with your manager	3.20	0.693
Clashes at work consume your time	3.06	0.925
Facilities	**2.61**	**0.299**
The use of computer in your work is a work facilitator	3.43	0.671
You have enough space in your working area	2.69	0.761
Your work environment as a whole is comfortable	2.45	0.856
You are working at a temperature controlled work place	2.39	0.827
There are frequent interruptions and distractions when performing your duties	2.29	0.756
Internal interruptions and destructions are mostly more than external one	2.67	0.766
Interruptions could not affect accomplishment of your activities	3.18	0.793
Workload has a negative impact on your personal life	1.78	0.832
You perceive your performance within such workload as good	2.65	0.770

Annex (11-b): Perception of employees toward workload domains questions

System Role	**2.62**	**0.478**
your manager provides you regulatory ongoing guidance (act as counselor)	2.88	0.791
Your manager performs on-the- job training for you	2.41	0.669
Your manager provides ongoing feedback about yours' performance	2.55	0.702
Your manager provides support for your offload and manage the intensive nature of the work	2.67	0.766
Your manager ensures that you have adequate facilities	2.65	0.688
Your manager often represents your requests to management	2.61	0.666
The work system offers you enough motivations	2.18	0.740
The work processes are not efficient	2.90	0.640
The work system is duplicative in nature	2.71	0.701
Documentation practices are duplicative	2.65	0.744

Annex (12): Distribution of nursing activity procedures according to some characteristics

Variable	Frequency	Percentage (%)
Gender		
Male	64	24.8
Female	194	75.2
Total	258	100
Speciality		
Staff nurse	15	5.8
Practical nurse	126	48.8
Midwife	117	45.3
Total	258	100
Shift		
Morning	230	89.1
Evening	28	10.9
Total	258	100
Stations		
NCDs	33	12.8
PNC	50	19.4
ANC	52	20.2
FP	30	11.6
Injection Room	13	5
Health Screening	30	11.6
Immunization	39	15.1
Dressing Room	11	4.3
Total	258	100
Nursing activity procedures		
One injection	13	5
Two injection	13	5
Documentation & counselling	67	26
BP measurement	54	20.9
Weighting baby	23	8.9
Weighting adult	44	17.1
Minor dressing	11	4.3
Umbilical care	10	3.9
Doppler	13	5
Abdomen exam.	10	3.9
Total	258	100

Annex (13): Differences in response of domains according to qualification

Dependent Variables *(Domains)*	In-dependent Variable *(Qualification)*	N	Mean	SD	F	Sig.
Working hours	Diploma 2 years	40	2.865	0.391	0.134	**0.875**
	Diploma 3 years	12	2.927	0.308		
	Bachelor and above	28	2.879	0.332		
Staffing	Diploma 2 years	42	2.642	0.494	0.274	**0.761**
	Diploma 3 years	13	2.753	0.328		
	Bachelor and above	27	2.670	0.492		
Facilities	Diploma 2 years	49	2.571	0.281	0.915	**0.404**
	Diploma 3 years	17	2.686	0.278		
	Bachelor and above	30	2.603	0.343		
System	Diploma 2 years	52	2.646	0.466	0.395	**0.675**
	Diploma 3 years	14	2.757	0.525		
	Bachelor and above	31	2.612	0.564		
Overall	Diploma 2 years	67	2.688	0.330	0.191	**0.826**
	Diploma 3 years	18	2.740	0.301		
	Bachelor and above	37	2.708	0.319		
	Total	122	2.702	0.320		

Annex (14): Differences in response of domains according to experience

Dependent Variables *(Domains)*	In-dependent Variable *(Experience)*	N	Mean	SD	F	Sig.
Working hours	Up to 10 Years	29	2.870	.388	0.61	**0.541**
	11-20 Years	23	2.945	.323		
	Over 20 Years	28	2.834	.352		
Staffing	Up to 10 Years	24	2.458	.499	3.57	**0.033**
	11-20 Years	26	2.707	.460		
	Over 20 Years	31	2.771	.383		
Facilities	Up to 10 Years	24	2.532	.247	0.68	**0.505**
	11-20 Years	37	2.603	.289		
	Over 20 Years	34	2.614	.285		
System	Up to 10 Years	25	2.660	.537	1.14	**0.322**
	11-20 Years	33	2.554	.602		
	Over 20 Years	38	2.736	.377		
Overall	Up to 10 Years	33	2.688	.328	0.65	**0.520**
	11-20 Years	45	2.663	.334		
	Over 20 Years	43	2.740	.294		
	Total	121	2.697	.318		

Annex (15): Differences in response of domains according to training

Dependent Variables *(Domains)*	In-dependent Variable *(Training type)*	N	Mean	SD	F	Sig.
Working hours	Nursing courses	42	2.940	.311	0.76	**0.468**
	managerial courses	3	2.833	.190		
	Both	18	2.826	.415		
Staffing	Nursing courses	41	2.651	.433	0.22	**0.797**
	managerial courses	4	2.725	.464		
	Both	17	2.582	.468		
Facilities	Nursing courses	46	2.623	.296	0.20	**0.815**
	managerial courses	5	2.533	.287		
	Both	19	2.619	.308		
System	Nursing courses	48	2.606	.529	0.02	**0.979**
	managerial courses	4	2.550	1.001		
	Both	16	2.593	.469		
Total	Nursing courses	61	2.710	.320	0.25	**0.775**
	managerial courses	5	2.644	.418		
	Both	21	2.660	.313		
	Total	87	2.69	.321		

حالة عبء العمل في محطات التمريض في المراكز الصحية التابعة لوكالة غوث وتشغيل اللاجئين في محافظات غزة

إعداد: رياض عوض أحمد دياب.

إشراف: د. بسام أبو حمد.

ملخص:

غني عن القول أن مهنة التمريض هي الركيزة الأساسية في أي نظام رعاية صحية . حيث يعتبر الممرض و الممرضة في موقع مهني ذو طبيعة حرجة و حاسمة في المؤسسات الصحية . فالهدف من هذه الدراسة هو فهم حالة عبء العمل في مراكز التمريض في المراكز الصحية التابعة للأونروا في محافظات غزة .

حيث أجريت هذة الدراسة الكمية المقطعية من أجل تطوير قياس لعبء العمل ، التي يمكن أن تستخدم كأداة للإدارة لاتخاذ القرارات المتعلقة بمستوى التوظيف . تم جمع المعلومات باستخدام إستبانة يعبئها الموظف وإستمارة إستخلاص نتائج الوقت المستغرق لإجراء العمليات التمريضية . شملت الدراسة جميع الممرضين و الممرضات (163) الذين يعملون في المراكز الصحية المختارة في 10 مراكز صحية ، مع معدل إستجابة 78, 5 ٪ . أيضاً تم إجراء 258 قياس لإجراءات نشاط التمريض في نقاط تقديم الخدمات في محطات التمريض في المراكز الصحية المختارة . جمع البيانات كان من قبل الباحث . و للتأكد من مدى ثبات العناصر المستخدمة في الدراسة تم إجراء إختبار الثبات فكانت نتيجة اختبار كرونباخ ألفا 0, 903 .

تبين نتائج الدراسة أنه لا توجد معايير خاصة بقياس عبء العمل للممرضين والممرضات في المراكز الصحية . أيضا 91 ٪ أقروا بوجود عبء عمل في المراكز الصحية وينسبونه إلى عوامل مثل زيادة العمل المكتبي ، عدم كفاية الموظفين ، زيادة كثافة العمل ، مستلزمات الوظيفة الإضافية الغير متعلقة بمهام التمريض ، و الضوضاء و المقاطعة الخارجية .

أظهرت النتائج أن 66.75 ٪ من أفراد العينة لديهم تصور بشكل متوسط بشأن مجالات عبء العمل كافة ، مع أعلى نسبة لساعات العمل (70،25 ٪) ، يليه مجال التوظيف (66 ٪) ، دور النظام (65.5 ٪) ومجال التسهيلات (65.25 ٪) .

وأخيراً ، قُدمت نتائج قياس إجراءات نشاط التمريض من خلال دراسة الوقت المستغرق في كل إجراء . فكانت النتائج بالدقائق كالتالي : قيمة وحدة التوثيق وتقديم المشورة 3:49 ، قياس ضغط الدم 0:55، قياس وزن الطفل 0:19 ، قياس وزن البالغ 0:18، إجراء غيار 4:37 ، العناية بالسرة 0:49 , سماع نبض الجنين بجهاز دوبلر 3:58، فحص البطن 2:03، تطعيم بحقنتين 1:06، وإعطاء حقنة واحدة في غرفة الحقن 1:15 دقيقة . أيضا تم قياس الوقت المستغرق في الحالة الواحدة في كل محطة فظهرت كالتالي : في الأمراض المزمنة 3:08، رعاية المواليد 13:40، رعاية الحوامل 8:58، تنظيم الأسرة 6:04، غرفة للحقن 1:15، المسح الصحي 2:49 ، التطعيمات 3:31 و غرفة الغيار 4:37 دقيقة .

يوصي الباحث أن القيم التي حُددت بإستخدام وحدة قياس عبء العمل من خلال دراسة الوقت أن توظف لتطوير نظام قياس لعبء العمل للتمريض في المراكز الصحية التابعة للأونروا . أيضاً الأخذ بعين الإعتبار العوامل التي تؤثر على حجم العمل التي نتجت عن هذه الدراسة خصوصاً مجالي التسهيلات و النظام. و أيضاً الإيعاز إلى أهمية تقليل الأعمال الكتابية وضمان مستوى توظيف ملائم و تطبيق نظام تدوير العمل لضمان عدالة حجم العمل.