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Workload Status in Primary Health Care Pharmacies -Gaza Governorates

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Workload Status in Primary Health Care Pharmacies –Gaza Governorates

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Dedication

The thesis is dedicated to my father, who taught me that the best kind of knowledge to have is that which is learned for it's sake.

It is also dedicated to my beloved mother, who taught me that even the largest task can be accomplished if it is done one step at a time.

I dedicated it to my brothers and sisters: Nidal and his sweet family. Khouloud and her sweet family, sweet Rola and Dina, wonderful Mohammed, beautiful Ayah for their unconditional love and support throughout the course of study.

I dedicated it for the soul of my grandfather and grandmother and dedicated it to my aunts in Lebanon and Sweden and for their children.

I dedicated it to Al-Afifi family and for those who have been a great source of motivation and inspiration.

Finally, it is dedicated to all those who believe in the richness of learning.

Declaration

I certify that this thesis submitted for the degree of Master is the result of my own research, except where otherwise acknowledged, and that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signature: .....

May Ahmed El-Afifi

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Abstract

Studying workload in pharmacy career is highly valued because of its many consequences not only on pharmacists and pharmacists' technicians themselves but also on the quality of the delivered pharmaceutical services. This study has subjectively and objectively assessed the status of workload among pharmacists and pharmacists' technicians in primary health care centers which belong to the Ministry of Health and the United Nations Relief and Works Agency in Gaza governorates. A descriptive analytical cross sectional design was utilized and 216 subjects had participated with high response rate (98.6%). An interviewed questionnaire was used to collect data coincided with records check.

The study provided four workload related domains. The overall perception about the workload was 3.3 out of 5 (66%). Perceptions about work hours domain elicited the highest scores (3.8/5) followed by facilities and work conditions (3.6/5). However, perceptions about staffing and relations domain elicited lower scores (3.2/5) and the management system domain elicited the lowest scores (2.9/5). No statistically significant differences in the overall workload perception were revealed in reference to gender, years of experience, age, education "technicians versus pharmacists". However, there were statistically significant differences in the work hours domain as females, more experienced subjects, subjects with high income and pharmacists' technicians elicited lower perception scores. In contrary, statistically significant differences in the overall perceptions were revealed in relation to certain variables. Subjects with low income, working in Gaza and Khan Younis governorates, working for the governmental sector, receiving training and performing specified fixed activities are all associated with having higher overall perception scores. Interestingly, the study illustrates that 86% of the respondents perceived their work environment to be stressful and 50.9% of them reported their intention to leave their work if they had better choices.

The study illustrates that 78.2% of the respondents reported not having job descriptions and those who do not have job descriptions were working in the governmental sector. Around half of the subjects surveyed reported receiving training, 69% reported having in charge pharmacist and almost none reported the availability of official breaks. United Nations Relief and Works Agency health facilities were more resourced than the Ministry of Health facilities although both sectors experienced shortage of essential items. Around quarter of the subjects reported experiencing medication errors in their practice and 37% reported rarely (seldom and/or never) providing counseling services to clients. Although, the governmental health centers showed lower prescriptions volume, they are much better

staffed than their counterparts from the United Nations Relief and Works Agency. Regardless of the subjects perceptions about their workload, the objective assessment of the workload in terms of prescribing revealed that the governmental clinics are overstaffed and the United Nations Relief and Works Agency clinics suffer from understaffing in reference to the British Prescribing Standards.

Therefore, paying attention to employees' perceptions about their workload, providing essential resources and equipment, encouraging effective supervision, conducting training, working on improving motivation and redeployment of pharmacists and technicians and important issues to consider in order to ensure the availability of appropriate, reasonable and fair workload .

ملخص الدراسة

يعتبر عبء العمل من المواضيع الهامة التي تستوجب الدراسة العميقة في القطاع الصحي، لما له من أثر قوي و كبير على تقديم الخدمات الصحية و مدى جودتها و بالتالي يؤثر على النظرة الاجماليه للمنتفعين تجاه النظام الصحي. اضافة، إلى تأثيره المؤكد على العاملين في القطاع الصحي أنفسهم.

إن الهدف من دراسة عبء العمل هو تحديد حالته و وضعه بين الصيادلة و مساعدي الصيادلة الذين يعملون في مراكز الرعاية الصحية الأولية في قطاع غزة، من أجل التعرف أكثر على طبيعة عبء العمل هناك و العوامل المؤثرة فيه. هذه الدراسة هي دراسة مقطعية على الصيادلة و مساعدي الصيادلة في المراكز الصحية الأولية التي تتبع لوزارة الصحة الفلسطينية و لوكالة الغوث الدولية لتشغيل اللاجئين الفلسطينيين (الأنروا) في محافظات قطاع غزة الخمس. و قد كان عدد المشاركين في الدراسة 216 و جمعت البيانات من خلال تعبئة الاستبيانات و التي تم جمعها من خلال المقابلات المباشرة مع الصيادلة و المساعدين.

إضافة الى ذلك، تم مراجعة بعض السجلات المتعلقة بعدد الوصفات المصروفة شهرياً في كل من المراكز التابعة لوزارة الصحة و الاخرى التابعة للأنروا. نسبة الاستجابه كانت % 98.6 و قد أظهرت الدراسة أن وجهات النظر الاجمالية للصيادلة و المساعدين تجاه عبء العمل بأبعاده المختلفة كانت ايجابية نسبياً، ما عدا وجهة نظرهم تجاه نظام الادارة. وجد أيضاً أن العوامل الشخصية كالعمر، الجنس، الحالة الزوجية، الدخل، و المسمى الوظيفي لم يكن لها تأثير سلبي في المحصلة على وجهات النظر الاجمالية تجاه عبء العمل حيث كانت كلها تميل الى الايجابية. لم تظهر أيضاً فروقات ذات دلالة احصائية بين المجموعات المختلفة لتلك العوامل في رؤيتها لابعاد العمل عموماً ما عدا في حالة الدخل حيث أظهر أصحاب الدخل الأعلى نظرة أقل ايجابية من سواهم. المساعدين(66.7%) كانوا أقل ايجابية من الصيادلة في نظرتهم للبعد المتعلق بساعات العمل.

أيضاً اظهرت الدراسة انه يوجد اختلافات بين العاملين بالمحافظات الخمس في نظرتهم الاجمالية لأبعاد عبء العمل و لكنها كانت بالمحصلة ايجابية، من يعملون في المنطقة الوسطى عانوا أكثر من سواهم فيما يتعلق بساعات العمل. أيضاً من يعملون في الأنروا (19.9%) كانت لديهم نظرة اجمالية أقل ايجابية من زملائهم في وزارة الصحة و خصوصاً فيما يتعلق بساعات العمل.

كما بينت الدراسة أن من يتلقون دورات تدريبية (56%) كانت نظرتهم الاجمالية لأبعاد عبء العمل المختلفة أكثر ايجابية من نظيرتها عند من لا يتلقون دورات تدريبية. بالنسبة للعوامل ذات العلاقة بالمؤسسة ذكر 78.2% من الصيادلة و المساعدين عدم وجود وصف وظيفي لهم في مراكزهم و يجدر بالذكر أن هؤلاء يعملون في القطاع التابع لوزارة الصحة. و بالرغم أن وجوده أو عدمه لم يؤثر في النهاية على وجهة النظر الاجمالية لأسباب تتعلق بعوامل أخرى كحجم الصرف في القطاعين الا أن وجوده ضروري جداً.

بالنسبة للطريقة التي ينظم بها العمل، وجد أن كل الطرق كان لها تأثيراً ايجابياً نسبياً على وجهة النظر العامة تجاه أبعاد العمل المختلفة مع ملاحظة أن من يقومون باداء أعمالهم لوحدهم كان لديهم النظرة الأقل ايجابية. وجد أيضاً بشكل ملفت أن أولئك الذين يعملون في الانروا يعانون بشكل كبير من حجم الصرف العالي أكثر من زملائهم في وزارة الصحة اضافة الى قلة عددهم. هذه مشكلة كبيرة ينبغي النظر بها و اتخاذ الاجراءات المناسبة بخصوصها.

عموماً، وجد أن هناك توافق و انسجام بين وجهات النظر المتعلقة بأبعاد عبء العمل المختلفة و بين النظرة العامة لمستوى عبء العمل، حيث وجد أن وجهات النظر تزداد ايجابية عند أولئك الذين يعانون من مستوى عبء عمل أقل.

اضافة الى ذلك، وجد أن الاداء العام لم يكن مرض و فعال بعكس وجهات النظر التي أقرها الموظفون حيث أنهم لا يقومون بعمل ارشاد و توجيه كاف للمرضى و لا يقومون بكتابة المعلومات الوافية عن العلاج للمريض.

من الجدير ذكره أن الموظفين في كلا القطاعين يعانون من نقص في الموارد و الأدوات اللازمة التي تمكنهم من القيام بعملهم على أكمل وجه و خصوصاً النقص في الادوية في القطاع التابع لوزارة الصحة. في النهاية، وجد أن 86% من الصيادلة و المساعدين يرون بيئة عملهم موترة و 50.9 % ينوون المغادرة اذا ما توفرت لهم الفرصة المناسبة لذلك.

من الممكن التوصل الى تحسين وجهات النظر تجاه عبء العمل من خلال: تزويد المراكز بالادوات و المستلزمات الضرورية، تفعيل دور الاشراف، عمل دورات تدريبية بعد تحديد الاحتياجات لذلك، تقديم حوافز كافية، اعادة تقييم للتوزيع الحالي للموظفين في المراكز المختلفة و تزويد تلك التي تحتاج الى كادر اضافي بالطاقم الكافي و خصوصاً في المراكز الصحية التابعة للانروا.

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List of Abbreviations

BLC	Bureau of Labor Statistics
EDL	Essential Drug List
ERS	Employment Relationships Scale
HER	Healthy Employment Relationship
HSAA	Health Sciences Association of Alberta
ISMP	Institution for Safe Medication Practices
JQS	Job Quality Scale
MOH	Ministry Of Health
NCCMERP	National Coordinating Council for Medication Error Reporting and Prevention
NGOs	Non Governmental Organizations
PCBS	Palestinian Central Bureau of Statistics
PEIPB	Prince Edward Island Pharmacy Board
PHC	Primary Health Care
PMP	Pharmacy Manpower Project
PNA	Palestinian National Authority
PNF	Palestinian National Formulary
PTCB	Pharmacy Technicians Certification Board
RPSGB	Royal Pharmaceutical Society of Great Britain
SSWES	Safe Supportive Work Environment Scale
UN	United Nations
UNRWA	United Nations Relief and Works Agency Palestine Refugees in the Near East
USA	United States of America
WB	World Bank
WEPS	Work Environment Processes Scale
WFP	World Food Program
WHO	World Health Organization

Definitions of terms

Job satisfaction: A pleasurable emotional state resulting from the appraisals of one's job; an affective reaction to one's job: and an attitude towards one's job (Wikipedia, 200).

Motivation: The creation of stimuli, incentives, and working environments which enable people to perform to the best of their ability in pursuit of organizational success (BNET, 2008a).

Pharmacist**:** Pharmacist is licensed/ trained health professional who practices the art and science of pharmacy (Wikipedia, 2007).

Pharmacy technician: An individual working in a pharmacy who, under the supervision of a licensed pharmacist, assists in pharmacy activities that do not require the professional judgment of a pharmacist (American Society of Health-System Pharmacists, 2003).

Supervision: A working alliance between the supervisor and supervisee that enables supervisees individually and collectively to achieve their role and ensure standards of practice (The Connexions Service National Unit, 2008).

Training: Activities assigned to facilitate the learning and development of new and existing skills, and to improve the performance of specific tasks or roles (BNET, 2008b).

Workload: All activities required and performed related to the provision of pharmaceutical services and the perceptions about these activities.

Chapter 1: Introduction

1.1 Research background

Access to health services is a basic human right, and everyone should have an adequate access to health care as Alma-Ata Declaration stated in 1978. Alma-Ata Declaration focused on primary health care (PHC) as a suitable method for such access and it stressed on the responsibility of the governments to assure that right for their people. The World Health Organization (WHO) defined PHC as the principal method of delivering healthcare at the most local level of the system. It is the health care provided to a patient at first contact with that system. For primary care to be both successful and accepted, the full involvement of both health care providers and their patients/clients is essential (Canadian Pharmacists Association, 2004).

WHO and World Bank (WB) in 2003 reported that the effectiveness of the workforce, depends mostly on the productivity, quality and deployment of an adequate number of health workers. Additionally, the previous report indicated that the inappropriate health worker behaviors resulting from low motivation, too much work and inadequate training can cause significant service inefficiencies. For example, absenteeism rates in public facilities are reported at 29% in Peru, 35% in Bangladesh and 43% in India. Studies from Tanzania and Chad indicate that staff in public facilities spends only 55 to 60% of their time on tasks they are trained to perform (WHO and WB, 2003).

Also, the interpersonal skills covering effective communication, effective working with others and managing your work problems play an important role in determining the

performance (WHO and WB, 2003). Supervision and accountability can enhance the health workers motivation and performance (WHO and WB, 2003). Health workers in India value knowing what they are expected to do and to achieve. In Bolivia and Vietnam, community monitoring of health services has been shown to help ensuring that health workers meet the needs of the community, thus improving the availability and quality of services (WHO and WB, 2003).

In the primary care setting, pharmacists are the drug therapy experts. Because of their knowledge, skills and accessibility, they are positioned to ensure that patients, other health care providers and the health care system safely achieve optimal drug therapy outcomes. So, pharmacists' role is not just dispensing medications as most people associate, the fact is that they have a more important role as the medication management experts (Canadian Pharmacists Association, 2004).

The pharmacist's related performance issues have been widely studied outside Palestine. The Royal Pharmaceutical Society of Great Britain (RPSGB) in 2007 reported that performance which falls below an acceptable level and move to, or has already resulted in an adverse impact on patient care or the reputation of pharmacists is known as poor performance (RPSGB, 2007).

This study focuses on the workload issue among pharmacists in Gaza Governorates. The workload they face at work, reflects how well they perform their duties. Such issue has not been studied before in Palestine and this has motivated the researcher to explore it.

1.2 Research problem

Workload is an important issue that needs to be highlighted and studied in a serious way especially in PHC centers. Excess workload has many negative consequences on pharmacists, clients and the system. Having high prescription volume, the fact that pharmacists are responsible for doing more different things, lack of time and little or no breaks, not having the adequate number of staffing, having frequent interruptions and distractions, disorganized workflow, fatigued staff, stress, improper technician training and others may result in real impact on workload and may affect performance.

Therefore, the concern in this study is to illustrate workload among pharmacists and pharmacists' technicians in PHC centers, to know its nature, and which factors affecting it. This study could help in providing credible information about the real status of the workload in order to provide recommendations that could help in having a suitable workload.

1.3 Justification of the study

According to the international protocols in the primary care settings, pharmacists usually provide direct patient care, face-to-face counseling and education for their patients, prescribing advice for other providers, advice on cost-effective drug therapy and options for treatments, and chronic diseases therapy management. Pharmacists are essential to optimal PHC (Canadian Pharmacist Association, 2004).

This is why there should be a focus on how they perceive their workload and how much their workload affects their performance. It is recognized that different pharmacists have different abilities and may perform different quantities of work more effectively than others, but there is a suitable workload that pharmacist may perform after which the potential for increasing errors rises. So studying the workload could be important for many reasons including: resource allocation, set staffing requirements, equitable distribution of work between workers and workforce planning (Human Capital Alliance, 2006).

In Palestine, Ministry of Health (MOH) and other health providers such as the United Nations Relief and Works Agency (UNRWA) have paid attention to the pharmaceutical sector. And since it costs too much and high proportion of health expenditures goes for procuring drugs, it is important to ensure that all pharmaceutical services and medications are safely provided to people. Thus, it is reasonable to study the workload because it will help the decision makers to take proper decisions in the field of planning and effectively managing the pharmaceutical sector. It will help them to decide on the allocation and distribution of pharmacists and technicians among the different health organizations, planning for their training, development and deciding on the best interventions to improve their work environment.

Although, workload has been studied in other professions such as lab services, it has never been scientifically studied in the pharmacy sector in Gaza Strip. Therefore, the study will try to highlight on the pharmacists workload in order to know their problems and their needs, to recommend to the decision makers and so they can set the proper solutions for the sake of the health system.

1.4 Purpose of the study

To study the workload among pharmacists and pharmacists' technicians at the PHC centers which belong to the MOH and UNRWA in Gaza Governorates. The study identifies workload status, its main dimensions, factors affecting it and how the perceptions about workload can be improved.

1.5 Objectives of the study

1 To assess the status of the workload that pharmacists and technicians experience at their current work.
2 To recognize the main workload domains as perceived by pharmacists and technicians.
3 To recognize the personal factors affecting the pharmacists and technicians workload.
4 To identify the organizational factors affecting the pharmacists and technicians workload.
5 To provide a set of recommendations that possibly improve pharmacists and technicians perceptions about work load and it's subsequent effects on performance.

1.6 Research questions

1 How do pharmacists and technicians perceive their workload?
2 Do pharmacists and technicians have high, medium, or low workload?
3 Do variables such as age, gender, marital status and other personal factors affect the pharmacists and technicians perceptions of their workload?

4 What are the organizational related factors that affect the pharmacists and technicians workload?

5 Do the pharmacy related variables such as facilities, equipment and physical conditions affect workload?

6 Are there differences in the workload perceptions between those who work in governmental PHC centers' pharmacies and those that follow UNRWA?

7 What are the factors that positively affect pharmacists and pharmacists' technicians perceptions about workload?

8 What are the factors that negatively affect pharmacists and pharmacists' technicians perceptions about workload?

9 Is there a relationship between prescriptions volume and workload?

10 How the perception of workload can be improved?

1.7 Feasibility and cost

The study was conducted as a part of the researcher's Master of Public Health study at the School of Public Health, Al-Quds University. After the approval of Al-Quds University, School of Public Health, an approval from the General Director of PHC in MOH in Gaza Strip and the Acting Director of Health Programs in UNRWA was obtained (Annex 3&4). This made the implementation of the study more feasible. Regarding the study costs, this study is self-funded and the researcher was responsible about covering all the needed costs.

1.8 Context of the study

It is known that the health care system is an open one; this means that it is affected by the external environment surrounding it. The demographic, social, economic, and political situations have its impact on the quality and the utilization of the health services and because the pharmaceutical sector is a part of this system, it will be affected by factors influencing it as mentioned in the coming paragraphs.

1.8.1 Demographic context

The Gaza Strip is a narrow piece of land lying on the cost of the Mediterranean Sea. 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 the Israel occupation who occupied the Gaza Strip in 1967 (MOH, 2006).

The Palestinian Central Bureau of Statistics (PCBS) in 2006 reported that Gaza Strip is a very crowded place with an area of 365 sq. Km^2 and constitutes 6.1% of total area of Palestinian Territory Land. In the Gaza Strip the population density is 3,808 inhabitants/ Km^2 that comprises the main five governorates: North of Gaza, Gaza governorate, Mid Zone, Khan Younis, Rafah (PCBS, 2006). The total population in the Gaza Strip is 1.416,539 divided into 718,708 males and 697,831 females with a ratio of 103 males per 100 females. The population is distributed in the five governorates as follow: 270,245 in North Gaza, 496,410 in Gaza governorate, 205,534 in the Mid Zone, 270,979 in Khan Younis and 173,371 in Rafah (PCBS, 2008).

Life expectancy in Palestine among males is 71.7 and 73 among females (PCBS, 2006). Proportion of population aged up to 5 years old is 19.2 and those who are under 15 years old constitute most of the population (49.1%) (PCBS, 2006). The population growth rate in Palestine is considered one of the highest in the world and the fertility rate according to the 'demographic & health survey 2004' which was conducted by PCBS was 5.8 in the Gaza Strip, which is high compared with other countries although it is declining year after year (PCBS, 2006).

1.8.2 Political and economical context

The political system is considered a democratic system; it is based upon a multi-party system which has an elected legislative council. The Palestinian National Authority (PNA) is still not a state, it assumes its responsibilities under conditions seems to be complex and of particular diversity (Hamdan and Defever, 2002). The political situation is not stable in Palestine because of the Israeli Occupation and people suffer in the Gaza Strip & the West Bank especially after the uprising of the second "Intifada" before seven years.

Since the start of the Intifada in 2000, the social and economic turmoil has translated into poverty among PNA territories population. Then, after the winning of Hammas in the election of 2006 the political environment has deteriorated even further, resulting in a significant hardening of Israeli and wider international policy in relation to the PNA and in a general withdrawal of the limited international support (UNRWA, 2006).

The economic situation is so bad and continues to deteriorate because of the closure policies and the restrictions on the movement of people and goods within the Palestinian

localities in the West Bank, between the West Bank /Gaza Strip and Israel. Heavy dependence of the Palestinian economy on Israel in the areas of trade and labor has led to the destruction of the economy, thus Palestine is facing a rise in the unemployment rate. The World Bank reported that the unemployment rate in Palestine was 32% and the poverty rate was 44% in 2005 (MOH, 2006).

1.8.3 The health system and health status of the population

The health care system in Palestine is a mixture of several health care providers; government, UNRWA, Non Governmental Organizations (NGOs) and private sector, in addition, to significant contributions of external resources. Most people depend on the public sector for meeting their health needs, particularly in the Gaza Strip. MOH has achieved many successes mainly in the field of immunization programs which is one of the major priorities of primary health care as stated by Alma Atta. The PHC centers are fairly distributed among the different regions in Gaza and West Bank. There are 416 PHC centers, 56 are in Gaza Strip and 360 in the West Bank (MOH, 2006).

UNRWA provides comprehensive health services to the registered Palestinian refugees in Jordan, Lebanon, Syria, Gaza Strip, and the West Bank through a network of 127 primary health care facilities and one hospital, as well as outsourced secondary care at governmental and nongovernmental hospitals. Environmental health services are also provided in camps. Expenditure for all of these services in the year 2006 was USD 73 million (UNRWA, 2006). The number of PHC centers that contain pharmacies and are operated by UNRWA in Gaza Strip are 16 distributed among five governorates.

The overall health status of the Palestinian population is better than those in other countries of the same level of socio-economic development (MOH, 2005). The successful immunization programs with high coverage have significantly contributed to the improvements in the mortality rates and the life expectancy of the population. The disease patterns of the Palestinians are mixture of the developing and developed countries (MOH, 2005).

The fiscal consequences of 2006 political developments in PNA have had an impact on the MOH budget, and consequently on the delivery of health services and programs. Access to health services in the PNA territories is increasingly affected by restrictions on the movement of people and goods. Few residents are permitted to exit Gaza, even in the cases of medical emergencies and treatment abroad. Only limited commercial and humanitarian supplies can enter. Dependency on UNWRA, World Food Program (WFP) and other United Nations (UN) agencies now stands at 80% and will increase as border restrictions are intensified (MOH, 2008).

Border closures, strikes and deteriorating economic conditions are impeding the MOH effectiveness to respond to health needs. All hospitals have reduced their services due to a lack of medical supplies (MOH, 2008). Because of the Palestinian Authority's financial crisis, the healthcare quality continues to deteriorate and mental health symptoms are on the rise (MOH, 2008). According to UNRWA, iron deficiency anemia affects 57.5% of children under three in Gaza Strip and 37.1% in West Bank, and 44.9% of pregnant women in the Gaza Strip and 31.1% in the West Bank (MOH, 2008). Border closures and restrictions impede the referral of patients in need of secondary and tertiary health services that are unavailable in the Gaza Strip. Close to 6000 people were referred for treatment in

Egypt and Jordan as well as in the West Bank, East Jerusalem and Israel between January and September 2007 (MOH, 2008).

1.8.4 Pharmaceutical services

The pharmaceutical sector is a very important one because it forms a very high proportion of the MOH expenditure. This could be due to the strong demand of patients on the PHC facilities. Also, the other important perceived causes included, the irrational prescribing practices, over-prescribing and the tendency of the physicians to prescribe very expensive brand name drugs (Fatouh, 2005). The Pharmacy Directorate of the MOH paid attention for such problem as demonstrated in the national strategic health plan. Thus, the mission of the Pharmacy Directorate was to provide well-organized pharmaceutical services and safe medications to all the Palestinian population at affordable cost (Fatouh, 2005).

In order to implement that mission, one of the Pharmacy Directorate national objectives was to approve and implement the Essential Drug List (EDL). Thus, MOH had developed and published it's EDL in March 2000 and in 2002 the Pharmacy Directorate had published and disseminated the EDL and the Palestinian National Formulary (PNF) to maximize the optimal use of limited financial resources (Fatouh, 2005).

Regarding the pharmaceutical services, the total number of prescriptions dispensed in 2007 in the UNRWA PHC centers was 3,701,318 (The Director of Pharmacy at UNRWA, February 2008, personal contact). While in the MOH PHC centers, the total number was 1,600,000 in 2005 (The Director of Palestinian Health Information Center in MOH,

February 2008, personal contact). Additionally, the average number of drugs per prescription was 1.92 in 2005 (Fatouh, 2005), while in 2007 it was 2.56 in the UNRWA centers (The Director of Pharmacy at UNRWA, February 2008, personal contact). The number of pharmacists who are registered in the pharmacy syndicate is 1700 and it is worth to mention that those represent about 90% of the total pharmacists (The Chairman of Pharmacy in Gaza Strip, February 2008, personal contact). The number of pharmacists working there are 174 with a ratio of 0.5 per 10000 persons, 92 of them are working in Gaza Strip (MOH, 2006).

Lately, and because of the bad economic situation and political deterioration, the MOH capacity in maintaining a stock of pharmaceuticals, consumables and paying salaries to it's staff has been affected. The shortages of essential drugs and other medical supplies are recurrent, mainly in the Gaza Strip and the procurement and funding of drugs for 2008 are not secured (MOH, 2008).

Because health systems are labor intensive and driven by people, it is so important to ensure the health personal effectiveness and the quality of care they provide, especially if we know that most of the expenditures of the MOH goes as salaries for the employees. Hence, there is an essential need for monitoring their performance and here we shouldn't ignore how the external environment can affect the health personnel in the Gaza Strip and that the political, economic and social conditions impact the workers themselves and their performance and finally the health sector as a whole. Next chapter, discusses the workload concepts, its main domains and factors affecting it. Additionally, the chapter explores workload among pharmacists and technicians in other contexts.

Chapter 2: Literature review

In this chapter the researcher presents the literature reviewed regarding the workload among pharmacists and pharmacists' technicians in their settings. But before going in details let us talk on the role of pharmacists and pharmacists' technicians in the field.

2.1 Role of pharmacists

Pharmacists are licensed/ trained health professionals who practice the art and science of pharmacy (Wikipedia, 2007a). Pharmacists distribute prescription drugs to individuals, they also advise their patients, as well as physicians and other health practitioners on the selection, dosages, interactions and side effects of medications (Canadian Pharmacist Association, 2004). Additionally, pharmacists monitor the health and progress of patients to ensure the safe and effective use of medications. Pharmacists in community pharmacies dispense medications, counsel patients on the use of prescriptions and over-the-counter medications and advise physicians about patients' medication therapy. Also they advise patients about general health topics such as diet, exercise, stress management and provide information on products such as durable medical equipment or home health care supplies (Canadian Pharmacist Association, 2004). Those who own or manage community pharmacies may sell non health-related merchandise, hire and supervise personnel, and oversee the general operation of the pharmacy. Some community pharmacists provide specialized services to help patients with conditions such as diabetes, asthma, smoking cessation, or high blood pressure; others also are trained to administer vaccinations in certain countries (Canadian Pharmacist Association, 2004).

Pharmacists in health care facilities dispense medications and advise the medical staff on the selection and effects of drugs. They may prepare sterile solutions to be administered intravenously. They also plan, monitor and evaluate drug programs or regimens. They may counsel hospitalized patients on the use of drugs before the patients are discharged. Pharmacists who work in home health care monitor drug therapy and prepare infusions solutions that are injected into patients and other medications for use in the home (Canadian Pharmacist Association (2004). Some pharmacists are specialized in specific drug therapy areas such as intravenous nutrition support, oncology and psychiatric pharmacy.

Prince Edward Island Pharmacy Board (PEIPB) in 2004 reported that counseling patients is an activity that provides the pharmacist with an opportunity to develop and maintain a professional relationship with the patient while discussing the patient's therapy, providing information and answering questions. It is also the last opportunity the pharmacist has to identify a potential or actual medication error by reviewing the medication, it's use and directions, identification of the physical product itself, identifying changes in therapy the physician and patient have implemented that may be different from the current pharmacy record (PEIPB, 2004).

While providing counseling, the pharmacists should make sure of the following: ensure patient receives counseling regarding the safe and effective use of each prescribed medication and include both oral and written information, assess the patient’s level of understanding of medication information provided. In addition, to encourage patients to ask questions and provide information regarding purpose of medication, dosage, side effects, use of other medications, duration of treatment, storage of supply, effects and

actions with missed doses, effects of food and compliance issues. This interaction should occur at each patient encounter, whether for a new prescription or a refill. Although, it would be ideal for the pharmacist to see the patient for refill prescriptions, the opportunity for a patient to receive counseling on refills may be served by having the technician enquire if the patient wishes to speak to the pharmacist about any medication related concerns (PEIPB, 2004).

2.2 Role of pharmacists' technicians

A pharmacy technician is "an individual working in a pharmacy that, under the supervision of a licensed pharmacist, who assists in pharmacy activities that do not require the professional judgment of a pharmacist" (American Society of Health-System Pharmacists, 2003). The technician is part of a larger category of “supportive personnel,” a term used to describe all non-pharmacist pharmacy personnel. Based on Pharmacy Technician Certification Board (PTCB) and Bureau of Labor Statistics (BLS) estimates, there are as many as 250,000 pharmacy technicians in the United States of America (USA). This is a significant increase over the 1996 estimate of 150,000. BLS predicts that pharmacy technician employment will grow by 36% or more between 2000 and 2010. This percentage of growth is “much faster than the average for all occupations,” but in line with a majority of other supportive personnel in the health care sector. Pharmacy technicians work in a wide variety of settings, including community pharmacies (approximately 70% of the total work force), hospitals and health systems (approximately 20%), long term care facilities, home health care agencies, clinic pharmacies, mail-order pharmacies, pharmaceutical wholesalers, managed care organizations, health insurance companies and medical computer software companies (American Society of Health-System Pharmacists,

2003). In the past, pharmacists have traditionally been reluctant to delegate even their more routine work to technicians. The 2001 Schering Report concluded that, in the past five years, pharmacists have become more receptive to pharmacy technicians. Indeed, much has changed in the scope of potential practice activities for pharmacy technicians and pharmacy's perception of the significant role technicians might play. Technicians should engage much more in the technical practices as dispensing the drugs to help the pharmacists to practice their role in counseling. Regarding pharmacist to technician ratios, at least 25 states since 1996 have liberalized their pharmacist to technician ratios from a norm of 1:1 to 1:2 or 1:3 (American Society of Health-System Pharmacists, 2003).

However, during the dispensing process the labeling of drugs is an important practice and to be adequate and effective it should include writing the drug name, dosage and the expired date (Chergali, and others, 2004).

2.3 Concept and definition of workload

Workload is defined simply by Cirrin, Biehl, Estomin and Schraeder in 2003 as "all activities required and performed related to the provision of client services". O'Brien-Pallas and Giovannetti in 1993 describes workload as "the daily amount and type of human resources required for caring for an individual patient" (Human Capital Alliance, 2006).

Grasha in 1999 reported that a variety of psychosocial factors such as those associated with cognitive functioning, perceptions of the task and physical environment of the pharmacy, personal qualities of people, organizational dynamics and extra organizational factors play a role in accuracy in the workplace. Objective workload which is known to be the number

of hours and days worked, the number of scripts filled, the pace of their work, how many breaks and how much help they receive, seems to be involved, but not in the way that most people assume (Grasha, 1999). Low levels of workload seem to be more problematic, as are dramatic shifts in workload particularly in high-volume pharmacies. All of the factors affecting errors had independent effects on performance (Grasha, 1999). Statistical analyses showed that the top six contributors to inaccuracy in order were: perceptions of inadequate supervision, low workload, perceptions that breaks were inadequate, low levels of task tension, perceptions that pharmacy lighting was inadequate, bad perceptions of motivation at work place regarding pay and promotion, and low level of job satisfaction (Grasha, 1999).

Thus, Grasha (2001) concluded that there is two sides for workload, the "objective side" which is known and the other side is the "subjective one" which is experienced as task tension or stress and is influenced by a number of factors, including specific task demands, broader job stress and tension of a variety of psychosocial variables (Grasha, 2001). In this study, although the researcher has focused on the subjective side, many objective side related variables were included in assessing workload status.

2.4 Values and importance of studying workload

Many studies have been conducted to study the nature of the workload and some of them were concerned with the objective side including the prescription volume, the hours worked and days worked, the adequate number of staff and how many breaks they have and so on, and how it will affect the performance. In contrary, others were interested in studying the subjective side. This is because they value employees perceptions and it's

importance especially in the fields of resource allocation, setting staffing requirements, and in workforce planning (Human Capital Alliance, 2006).

Globally, while the overall supply of pharmacists has increased in the past decade, there has been an unprecedented demand for pharmacists and for pharmaceutical services, which has not been met by the currently available supply (Health and Human Services, 1999). The current shortage in the United States of America may reflect an extension of a less serious shortage reported during the 1988 to 1994 period. The most striking evidence of a pharmacist shortage and the extent of the shortage, are the demonstrably increased vacancy rates, difficulties in hiring, and other phenomena commonly associated with shortages, and unprecedented increases in the volume and range of activities demanded of today's pharmacist (Health and Human Services, 1999). The increased volume is manifested most convincingly by the sharply increased number of prescriptions filled each year in retail settings. The increased range is manifested by the substantially expanded roles and responsibilities of pharmacists in both retail and institutional settings. Factors identified as contributing to the shortage include increased use of medications, expansions in pharmacy practice and pharmacists' roles and professional opportunities, increased access to health care and the increased number of health care providers authorized to prescribe medications. In addition, to changes in the pharmacist workforce, including greater number of women pharmacists and their shorter work patterns and the double impact of increased insurance coverage for prescription drugs, resulting in an increase in prescription volume (Health and Human Services, 1999).

Consequences of pharmacists shortage include a negative impact upon the profession and the public resulting in reduced time for pharmacists to provide patient counseling - a role

of increasing importance in light of the expanded use and complexity of medications, job stress, inadequate working conditions. In addition to reduced professional satisfaction due to longer working hours and lesser flexibility in scheduling and introducing fatigue-related factors that increase the potential for medication errors (Health and Human Services, 1999).

The Canadian Pharmacists Association reported in 2004 that there is a shortage of pharmacists in Canada which has an impact on patient care in both community and hospital settings. It is unlikely that the number of pharmacists in Canada or practice innovations have kept pace with the increased drug use in the past decade. The health care system, governments and pharmacy educators need to ensure an adequate supply of pharmacists, allowing for the availability of pharmacists to provide pharmaceutical care as an essential component of primary health care. Also, using pharmacy technicians better will ensure optimal use of pharmacists and their skills (Canadian Pharmacists Association, 2004).

Health and Safety Committee in the United States of America in 2005 reported that work overload can occur when a person is allocated a great deal of work, but insufficient resources (in terms of ability, staff, time or equipment) to cope with it. It stated that there are two different types of work overload. Quantitative overload is simply having too much work to do in the time available. Qualitative overload is work that is too difficult for the employee to do, possibly because they have not received appropriate training, or because they do not have the intellectual or physical capacity to do the work, or because they have been set an impossible task (regardless resource or ability) (Health and Safety Committee, 2005). When employees faced with work overload, they may try to cope by working excessive hours, which may lead to health problems and problems outside of work.

Working excessive hours can lead to fatigue, which in turn can impact upon performance (Health and Safety Committee, 2005).

Workload has it's impact also on the employees themselves. It is equated with job demand in the domain of occupational stress, which is simply one of a heterogeneous set of "psychosocial hazards" which may contribute to the development of stress, related illness or injury. In a recent empirical study, workload in the psychology sense was demonstrated to be a key determinant of stress and fatigue levels among employees performing repetitive, manufacturing work tasks (MacDonald, 2003).

Bowman reported in 2008 that the causes of burnout and organizational stress are numerous and reasonably well documented. Some people suffer from burn out because they are not adapt to handle stress, some people burn out because their job is stressful due to unclear job descriptions and others suffer from burn out because of poor working conditions or lack of communication (Bowman, 2008). There are many ways the work environment can cause burnout. However, quite often burnout is the result of the persons own ability to cope with stress. This explains why two people, working under the same conditions, will disagree about how stressful their jobs are (Bowman, 2008).

Gaither and others in 2007 reported that organizational factors such as inflexible and long working hours, low salary and few promotional opportunities, interpersonal relationship conflicts and inadequate staffing are related to turnover. Between 1983 and 1997, the number of pharmacists citing stress as an important reason for leaving a position increased, while those citing salary as a reason for leaving decreased. A study of community pharmacists found that participation in pharmaceutical care work activities indirectly lowered job turnover intention. Workload and work activities may also be important

determinants of turnover. A study describing work activities of community pharmacists found a discrepancy between what pharmacists were actually doing and what they desired to do. Pharmacists wanted to spend more time in consultation and drug-use management and less time in medication-dispensing activities. Based on cognitive dissonance theory, a discrepancy between what pharmacists are actually doing and what they want to be doing can increase the likelihood of turnover (Gaither, et al, 2007).

The relationships of workload to leaving or staying with an employer is less clear. Personal factors such as number of children, race, age, gender, position, practice setting, education and experiencing a major life event can also increase intention to leave and actual job turnover (Gaither, et al, 2007). Pharmacists more likely to leave a position include those who are younger, who are in staff positions, who have more education/training, work in practice settings other than independent community pharmacy, and are women. Salary has been a main reason for leaving given by men, while women rank relocation as important. The effects of children, race and marital status are not as clear (Gaither, et al, 2007).

Awases and others in 2004 conducted a study to assess the magnitude of migration of health professionals in six African countries. They reported that among the most frequently mentioned pull factors of countries abroad are: stable sociopolitical environments, professional work environments that are more conductive to training and skills development, proper equipment, tools and facilities that are more conducive to advanced practice and procedure, more attractive salaries, social and retirement benefits, and sensitive employment policies that recognize good performance. However, some skilled health personnel choose to stay and continue to work in the public health sector despite the push and pull factors that influence their colleagues to leave. Job security,

career advancement, and opportunities for further training are all good in the public health sector, and particularly for older workers, these factors motivate them to stay. There may also be social and cultural factors which are influential, but no specific research has been conducted in this area (Awases, Gbary, Nyoni and Chatora, 2004). The pharmacists like their colleagues in the health sector may be affected by the pull and push factors.

On the other hand, some employees including pharmacists preferred staying at their place and reflect high commitment degree towards it. Commitment is defined as the extent to which employees identifies with and is involved in an organization. There are three components of it: strong belief in an organization's value and goals, a willingness to expend considerable effort for it, and a strong intent or desire to remain employed by the organization (Curry, Wakefield, Price and Mueller, 1986).

2.5 Domains of workload

Workload as a perception is a construct that has many dimensions as Grasha (2001) concluded that workload has subjective and objective sides. Because this study is concerned with the perceptions of pharmacists and pharmacists' technicians towards their workload. The frequently discussed domains are outlined in the coming paragraphs.

2.5.1 Work hours

Having to work excessive hours, not having enough time to accomplish your activities and having little breaks could affect perception towards workload negatively. Kreling and others (2006) in their study that aimed to describe characteristics of community pharmacists' current practice environments and pharmacists perceptions' about aspects of

their work environments concluded that the opportunity to take adequate breaks were rated most negative and this has a negative impact on productivity, quality of care, and pharmacists' satisfaction (Kreling, Doucette, Mott, Gaither, Pederson and Schommer, 2006).

Regarding the hours of work and in order to limit the stress pharmacist's work under to a safe level, the following recommendations for hours of work are defined by PEIPB as follows. A pharmacist should work a maximum of 48 hours in a week. An 8 hour shift is considered appropriate and desirable. A pharmacist may work a ten (10) hour shift to cover short term contingencies. Twelve hour shifts should be avoided. In extenuating circumstances, adequate time for breaks is encouraged. A pharmacist may work longer than a scheduled shift if presented with a prescription or prescriptions which require immediate attention, in order to act in the best interest of the patient. Meal and rest breaks provide an opportunity for the pharmacist to regroup, refocus and sharpen their cognitive skills thereby minimizing occurrence of errors (PEIPB, 2004).

As a guideline, a shift of more than 6 hours should include a 30-minute meal break and a 15 minute break (PEIPB, 2004). A pharmacist should not, on average, be scheduled for more than a maximum of four consecutive 10-hour shifts. Pharmacists may make alternative shift arrangements in advance, considering limits on personal capabilities, patient safety and professional obligations (PEIPB, 2004). Regarding the breaks, The Institution for Safe Medication Practices (ISMP) in 2004 reported that pharmacists who perceived that breaks times were adequate and available made fewer errors and detected more errors during self –monitoring (ISMP, 2004).

2.5.2 Staff and relations

PEIPB in 2004 reported that when pharmacists are overburdened and understaffed, this presents a very real threat of harm not only to themselves, but also to the patients Adherence to the principles and guidelines will help reduce the number of medication errors that go undetected until they cause harm to the patient (PEIPB, 2004). Regarding the understaffed problem, it was suggested that in many poor countries the number of health workers is grossly insufficient for the implementation of priority interventions according to needs. Such insufficient number leads to increase workload (WHO and WB, 2003).

Knapp (2002) reported that the Pharmacy Manpower Project, Inc, (PMP) commissioned a conference to address the aspect of the significant shortage of pharmacists today. Two dozen of experts met to discuss drug-related health care problems in the population and system failures in the delivery of pharmaceutical care services. They concluded that the health care of the public would be improved, if the amount of high quality pharmaceutical health care services provided to patients was increased significantly, then the total amount of such services needed over the next twenty years will exceed the supply of pharmacists. They stressed in the conference on the bad need for pharmacists in terms of number and types to deliver high quality pharmaceutical care (Knapp, 2002).

Regarding the job design at work place, Kotila (2001) reports that job enrichment which makes jobs more satisfying by increasing the skill variety, task identity and significance of the task is an important motivating job design. Additionally, job rotation which means moving employees from jobs to another and, therefore, giving them opportunities to

perform a greater variety of tasks is one of the motivating job designs at work place (Kotila, 2001).

Jackson and Reines (2003) reported that the objective workload alone couldn't predict the outcome on a pharmacist performance; the quality of a pharmacist's performance was also determined by personal attributes, such as how the pharmacist perceived and responded to workload conditions. Thus, they reported that the pharmacist's interpersonal relationships, stress, could affect his/her workload and finally affect the occurrence of medication errors (Jackson and Reines, 2003).

Yardley (2004) discussed the term known as Healthy Employment Relationship (HER) which reflected in his point of view the work culture, climate, and practices. This term consists of the manner with which employees perceive their hospital, their management, their coworkers and the manner in which they perceive work is designed, managed, recognized and rewarded. Four different, but related constructs of HER were discussed and they are: Firstly, Employment Relationships Scale (ERS), which is composed of 7 items capturing the employees' perceptions of trust, respect, fairness, personal commitment, communication, and influence in work decisions. Secondly, Job Quality Scale (JQS), which is composed of 3 items capturing job clarity, workload, and job control. Thirdly, Work Environment Processes Scale (WEPS), which is composed of 7 items capturing the physical work environment, job training, career development, individual and team recognition and reward, supplies and resources, and quality improvement practices. Lastly, Safe Supportive Work Environment Scale (SSWES), which is composed of 5 items capturing the impact of work on personal life, protection from harassment, safety at work, co-worker cohesion and cooperation among work units. These four HER constructs had its

impact on the employees perceptions of their workload were related to a number of important hospital and employee outcomes (Yadley, 2004).

Regarding the relationships in the workplace, Erickson (2008) reported that it is frequently misunderstood and under evaluated. Most people possess basic interpersonal needs to fit in, to experience a sense of belonging, and to feel cared about. These needs can be effectively addressed in the workplace in two primary ways: through participation in a supportive team of associates and/or by working for a manager who cares about and invests in workers. Organizations can increase employee engagement by eliciting and supporting management behaviors that facilitate teamwork, develop mutually supportive relationships with peers, and build healthy, positive and influential relationships (Erickson, 2008).

Lowe (2006) reported as a result of his survey on the quality of the environment of Health Sciences Association of Alberta (HSAA) that the main causes of workload problems are inadequate staffing levels, increased job performance expectations, and increased complexity of work. Regarding the relationships with coworkers and supervisors, they were rated positively by 79% and 71%, respectively. Just over 60% provided a positive assessment of team communication. About half were positive about the level of interdisciplinary collaboration and opportunities to discuss professional practice issues in their work area. In contrast, considerably fewer respondents viewed the procedures, rules, and policies governing work in their area or team in positive terms. Less than half agreed that work is assigned fairly and equitably, hiring is fairly conducted, and rules and policies are fairly and consistently applied and make sense. Over 80% of survey respondents felt that their co-workers and patients or clients treat them with respect, and almost three-

quarters reported that their supervisors treat them with respect, and the majority of respondents lack the feedback they need to help them do a better job (Lowe, 2006).

2.5.3 Facilities and work conditions

Jackson and Reines reported (2003) reported that the pharmacist's performance was also determined by personal attributes, such as how the pharmacist perceived and responded to workload conditions. They reported that one's subjective impression of work place lighting, and distractions such as loud noises, all these could affect his workload and finally affect the occurrence of medication errors (Jackson and Reines, 2003). Peterson and others (1999) conducted a study on the pharmacist's attitudes towards dispensing errors in February 1999 and they reported that among the contributing factors towards dispensing are the interruptions to dispensing (Peterson, Wu and Bergin, 1999).

Kreling and others (2006) also reported that equipment used for facilitating the dispensing process was more common in pharmacies. More than one half of pharmacists reported that equipment and technology increased their level of productivity, quality of care, financial performance and job satisfaction in the pharmacy (Kreling, Doucette, Mott, Gaither, Pederson and Schommer, 2006). Flynn and others (1999) conducted a study on the impact of interruptions and distractions on dispensing errors in an ambulatory care pharmacy. An association was found between interruptions and distractions and increasing in dispensing errors, a majority of which involved incorrect label information (Flynn, Barker, Gibson, Pearson, Berger and Smith, 1999). Mott and others in 2005 reported that pharmacists and technicians were mostly interrupted by phone calls and difficult patients which caused high stress for them (Mott, Doucette, Gaither, Kreling and Schommer, 2005).

Sandon (2008) discussed the work related stress and reported that work carried out in poor conditions such as poor lighting, inadequate workspaces are some of the factors that can induce stress within the workplace. Computerization, which is supposed to enable routine tasks to be performed with more efficiency and in theory, allow job descriptions to be widened, has the complete opposite effect on employees, who find them expecting a greater increase load of mundane tasks. These employees who work with screens has to keep maintain a high level of concentration and often have little variety in their work and little say in decision making (Sandon, 2008). While Lowe (2006) reported as a result for his survey on the quality of the environment of HSAA that the majority of respondents have the necessary tools, equipment, and other resources they require to do their jobs well. However, 1 in 5 reported that they lacked these essential resources (Lowe, 2006).

2.5.4 Management system

This dimension includes many concepts such as supervision, training, job description, motivation and job satisfaction. Supervision as Grasha reported has its impact on the employees' perceptions towards their workload and thus affect their performance. McNamra (2008) reported that supervision is the activity carried out by supervisors to oversee the productivity and progress of employees who report directly to the supervisors. For example, first-level supervisors supervise entry-level employees. Depending on the size of the organization, middle-managers supervise first-level supervisors; chief executives supervise middle-managers, etc. Supervision is a management activity and supervisors have a management role in the organization (McNamra, 2008). Supervision is a working alliance between the supervisor and supervisee that enables supervisees individually and collectively to achieve their role and ensure standards of practice. The aim

is to enable the supervisees to maximize competence in service delivery. The process is facilitated through the creation of learning environment and regular arranged meetings where the supervisee is an active participant. Supervision can perform many functions including: ensuring quality assurance, maintaining the ethical and professional boundaries of the defined work. Additionally, the supervisors should enable the professional development of the employees and providing support for the employees overload and manage the often intense nature of the work and replenish the emotional resources needed to maintain professionalism. Also, they should communicate good practice within and across organizations and finally developing the nature and performance of an organization (The Connexions Service National Unit, 2008).

Regarding the supervision role in training and development of the employees, the supervisors ensure that new employees are oriented to the organization, its policies, facilities, etc (McNamra, 2008). They develop training plans with employees to ensure that employees have the necessary expertise to carry out their jobs. They provide ongoing guidance to employees, often in the forms of ongoing coaching and counseling. Supervisors often provide career counseling, as well, to help employees develop and advance in their careers (McNamra, 2008).

Also supervision has an important role in managing the performance of the employees. Supervisors ensure that job descriptions accurately record the primary responsibilities, qualifications and terms for each job role in their group (McNamra, 2008). They set performance standards for tasks, jobs and roles of their employees. Moreover, they ensure that employees have appropriate and realistic job goals. Additionally, provide ongoing feedback about the employee's performance and conduct performance appraisals on a

regular basis, including assessing employee's performance and what can be done to improve in their jobs (McNamra, 2008). They develop performance improvement plans, if an employee's performance is not adequate. In addition, supervisors provide rewards for employee accomplishments. The thing we shouldn't ignore is the role of the supervisor in ensuring that the employees has the adequate facilities, e.g., desk, computer, office supplies, etc (McNamra, 2008).

Pharmacists who made fewer errors had supervisors who fostered appropriate autonomy, and were perceived as being democratic, facilitative and helpful in setting goals (ISMP, 2004). Pharmacists who made errors had supervisors who were perceived as overly autocratic and punitive. Supportive supervisors will lower stress levels and will allow staff to better focus on tasks at hands (ISMP, 2004).

Managers are important counselors because they are the ones in the day-to-day interaction with employees, and if they close their eyes to the emotional problems of employees and refuse to discuss them it seems as they are saying to employees," I don't care about you, just your work" or when emotional upset arises say,' This is not part of my job. Go to see a counselor". All managers from the lowest to the highest levels need training to help them understand problems of employees and counsel them effectively. Since almost all problems brought to a manager have a combination of factual and emotional content, a manager should not spend all day looking for emotional content when a rational answer will solve the problem (Newstorm and Davis, 1993).

Another concept which is related to workload is the job satisfaction. It is defined as a pleasurable emotional state resulting from the appraisals of one's job; an affective reaction

to one's job and an attitude towards one's job (Wikipedia, 2007b). There are a variety of factors that can influence a person's level of job satisfaction. Some of these factors include level of pay and benefits, perceived fairness of the promotion system within a company, quality of working conditions, leadership and social relationship, the job itself (the variety of tasks involved), the interests and challenges the job generates and clarity of the job description and requirements. The happier people are within their job, the more satisfied they are said to be. Job design aims to enhance job satisfaction and performance; methods include job rotation, job enlargement and job enrichment. Other influences on satisfaction include the management style and culture, employee involvement, empowerment and autonomous work groups (Wikipedia, 2007b).

Motivation is defined as the creation of stimuli, incentives, and working environments which enable people to perform to the best of their ability in pursuit of organizational success. It is commonly viewed as the magic driver that enables managers to get others to achieve their targets (BNET, 2008a). Motivation has its impact on employees' perceptions towards their workload. Those work in systems and with managers that try to motivate them often perceive the world in different way and thus their perceptions should be considered. If the employee is motivated he/she would feel committed to the organization but if not he could prefer not being a member of it (Croft, 1996).

Also, Kreling and others (2006) reported in their study on the impact of the pharmacists' current workload that the motivation to work at the pharmacy and job satisfaction were rated most positive. This has a positive impact on reducing the workload and errors (Kreling, Doucette, Mott, Gaither, Pederson and Schommer, 2006).

2.6 Factors affecting workload domains

There are many factors that affect the workload which the researcher categorized into two broad categories, personal and organizational factors.

2.6.1 Personal factors

A study was done by Hassell and Shann in 2003 on the pharmacy workforce distribution in Great Britain showed that 52.6% of the workforce were females while 47,4% were males and it showed that those of ages between 30-39 years accounting for the biggest proportion of pharmacists and 42% of the respondents were under 40 years of age. Also it revealed that approximately 86% of those working in pharmacy have one job only, while 14% have two or more jobs (Hassell and Shann, 2003). Another study done by Mott and others (2005) in USA showed that 45% of pharmacists actively practicing in 2004 were female, a slight increase from 2000 (Mott, Doucette, Gaither, Kreling and Schommer, 2005).

The Croatian survey in 2007 reported that the Croatian males and females did not perceive significantly differential job stress (Vokic and Bogdanic, 2007). Regarding the marital status, it is found to be significantly related to the occupational stress level perceived. Married people, probably because of their work/home conflict, experience higher levels of stress. While the number of hours respondent works (less, equivalent, or more than he/she should according to the law), is not found to be significant variable that relates significantly to the level of occupational stress perceived, although common sense implies that employees working longer hours experience greater stress. The greatest level of stress

is perceived by employees who have three or more children, who are more than 50 year old, while the lowest levels of stress is perceived by employees younger than 30 years of age. Findings suggest that there is a connection between age, marital status, parenthood, number of children and the way stress is perceived, while gender, department and working hours are not connected to it (Vokic and Bogdanic, 2007).

Mott and others (2004) reported in 2004 that although 67.2% of pharmacists were satisfied with their job, more than 68% experienced job stress and role overload, and 48% experienced work-home conflict. The levels of role ambiguity, role conflict, and job stress were significantly higher in chain, mass merchandiser, and hospital settings relative to independent settings. Wanting to spend more time in consultation was most positively associated with role ambiguity, role overload, and role conflict and most negatively associated with job satisfaction. Gender, race, years of experience, marital status, and children also affected work attitudes, (Mott, Doucette, Gaither, Pederson and Schommer, 2004).

Hardigan and Carvajal (2007) reported that age, income, and practice site can predict perception about the job among practicing pharmacists. Their research demonstrated that a 10 percent rise in earnings increase men's job satisfaction by 3.0% and women's job satisfaction by 3.7%. They also reported that with the increase of age , the job satisfaction increases and those of lower ages and less years of experience in the field experience bad satisfaction and tend to turn over (Hardigan and Carvajal, 2007). Another study done by Wilkins about the work stress among health care providers revealed that about half of them whose income was 40.000$ or more reported high work stress compared with others with less income and thus the relation is positive (Wilkins, 2007).

2.6.2 Organizational factors

Job description and training have a great importance and therefore can impact on the workload perceptions as the literature reviews reveals. Job description is a description of the nature of a particular job, it's relation to other jobs, the working conditions, the duties and responsibilities, the degree of responsibility, and the skills and qualifications required for the job. To do an excellent job, you need to fully understand what is expected from you. By understanding the priorities in your job and what constitutes success within it, you can focus on these activities and minimize work on other tasks as much as possible. This helps you get the greatest return from the work you do and keep your workload under control. Job Analysis is a useful technique for getting a firm grip on what really is important in your job so that you are able to perform excellently. It helps you to cut through clutter and distraction to get to the heart of what you need to do (Mind Tools, 2007).

Training is defined as activities assigned to facilitate the learning and development of new and existing skills, and to improve the performance of specific tasks or roles (BNET, 2008b). Training may involve structured programs or more informal and interactive activities such as group discussion or role playing which promote experiential learning. A wide variety of activities including on-the-job training, and business or simulation games, are used for training. Audio-visual and multimedia aids such as videos may also be employed. Training may be provided by an internal training officer or department, or by external training organizations. The effectiveness of training can be maximized by conducting a training needs analysis beforehand and following up with evaluation of

training. Training should result in individual learning and enhanced organizational performance (BNET, 2008b).

Dwyer and Fox (2008) indicated in their report on the relationship between work stressors and key performance to the findings of a survey done in 2000 which revealed that 88% experienced stress because of their work and that one of the most frequent factors contributing to this stress lack of training, and management support. Thus, training would seem to have the potential to provide a direct means of coping with the stressful aspects of one's job much the same way control does (Dwyer and Fox, 2008).

Fairness at work place seems to have it's impact on how the employees perceive their work. Fairness provided by the system in terms of equal pay for equal work, fairness in rewards, in treating everyone the same way seems to be fair and in having equal opportunities in training. Otherwise, they will tend to be more negatively affected by their workload, have lower productivity, are more likely to quit , have higher levels of conflict and are more likely to resort to collective bargaining to solve their problems (National Business Research Institute, 2008).

The prescription volume in PHC centers seemed to have it's impact on the perceptions of workload. It depends on the size of population served by each center and thus it differs among the different areas. RPSGB in 2006 showed through the discussion held on workload issue that the workload for pharmacy is increasing steadily, and that the recently published figures for the volume of prescriptions dispensed in England shows an increase in the number of items dispensed from 686 million in 2004 to 720 million in 2005 (RPSGB, 2006). Over a ten year period, the number of items dispensed has increased by

over 50%. The workload for dispensing is likely to continue to increase at the same rate. At the same time, pharmacists are taking on new clinical roles that change the way in which they work (RPSGB, 2006). So, the challenge is how they will perform in good manner within such workload and what can be the proper interventions.

Practicing Pharmacists Association in 2006 has shown that in Hong Kong and because of the increasing percentage of patients relying on the public health service, the increasing proportion of ageing population, the increasing possibility to use medications to treat diseases and manage chronic illness, the dispensing workload has increased substantially over the years in the public sector (Practicing Pharmacists Association, 2006). Therefore, the pharmacist members working in the public hospitals and clinics are faced with mounting work pressures because they need to cope with the increasing dispensing workload and they have to maintain the same level of quality and accuracy in their dispensing process. Also they have to deal with increased expectations from the patients who have become more aware of their rights and very often would demand for more detail explanation on how to use their medications (Practicing Pharmacists Association, 2006).

Peterson and others (1999) reported in their study on the pharmacist's attitudes towards dispensing errors, that most pharmacists (82%) believed that the risk of dispensing errors is increasing and the principal contributing factors nominated were: high prescription volumes, pharmacist's fatigue and pharmacist's overwork. Most pharmacists (58%) stated that there should be a regulatory guideline for the safe dispensing load in Australia (Peterson, Wu and Bergen, 1999). Kreling and others in the same previous mentioned study aimed to describe characteristics of community pharmacists' current practice environments and pharmacists perceptions' about aspects of their work environments. The

study showed that the number of prescriptions personally dispensed daily (personal workload) increased for pharmacists in all practice settings from 2000 to 2004 (Kreling, Doucette, Mott, Gaither, Pederson and Schommer, 2006).

PEIPB in 2004 has identified that the current pharmacist shortage has put a premium on pharmacists' time and that prescription volume keeps increasing. It also reported that there is a maximum amount of work any individual can perform; work performed beyond a person's limitations is more likely to contain mistakes. The workplace standards dictate that systems, personnel (including trained pharmacy technicians), and procedures be in place for the pharmacist to be able to prevent workload burnout and, ultimately, potentially dangerous medication errors (PEIPB, 2004). Medication error is defined by the National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP), as "any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication use is in the control of the health care (Jackson and Reines, 2003). However, there is an optimum workload that pharmacists may perform, after which, the potential for increasing errors rises. With regard to prescription volumes, the guideline suggested that a pharmacist working with technician support (one or more), should reasonably be able to dispense an average of 15-20 prescriptions per hour. This assume work interruptions such as phone calls, clarification of prescription orders, questions from patients, counseling patients, etc. that are average and consistent in daily frequency (PEIPB, 2004). A study conducted by Mott and others on the demographic and practices characteristics of pharmacists in USA, concluded that over half of them reported personally dispensing 120 or more prescriptions daily (Mott, Kreling, Doucette, Gaither and Schommer, 2005).

A dispensary Services Quality Scheme has been developed in the United Kingdom. This scheme provides a guidance primary care trusts in determining the minimum levels of staff hours by considering reference to the number of dispensed prescriptions that are dispensed on the average each month as mentioned later in the discussion chapter. It is recommended that the level of staff hours relate to those hours that staff are engaged in dispensing activities and not to other activities they may undertake in the practice (British Medical Association, 2007). No studies have been done on workload issues in Palestine except one which was conducted by UNRWA and on the centers that are operated by it. This study reported that the activities to be done need 96.43min / hr. It was objectively register the time required for each activity (Gaser, 2007).

To sum up, workload is a construct that has many dimensions and it has subjective and objective sides. The literature review discussed the workload domains which are: work hours, staff and relations, facilities and work conditions and finally the management system. Also, it discusses the impact of prescription volume on workload in general. In addition to the impact of the personal and organizational factors on workload perceptions.

Chapter 3: Conceptual framework

Framework is the conceptual underpinning of a study and is used to guide and direct the research process and to make research findings more meaningful and generalizable. Additionally, frameworks are efficient mechanisms for drawing together and summarizing accumulating facts (Burns and Grove, 1997).

The literature search and the researcher conceptualization of the studied phenomena, directed her to postulate the following conceptual framework.

Operational definition of workload: All activities required and performed related to the provision of pharmaceutical services and the perceptions about these activities.

Thus, the researcher is concerned with the pharmacists and pharmacists' technicians perceptions towards the workload dimensions and domains as well as the objective side of the workload.

Workload domains

- Work hours: This includes perceptions about the availability of enough time to accomplish work and having adequate breaks.
- Staff and relations: This includes perceptions about having adequate number of staff, perceptions on the way the work is designed perceptions of the relationships among employees at work place and their relationships with their supervisors.
- Facilities and work conditions: This includes having needed resources at work place such as computer, appropriate illumination, and experiencing interruptions and distractions.

- Management system: This includes perceptions about the supervision provided by the management, motivations and the overall satisfaction.

All these domains together forms the workload construct in addition to the effect of prescription volume on the overall perceptions of workload.

There are many personal and organizational factors affect the perceptions on these domains.

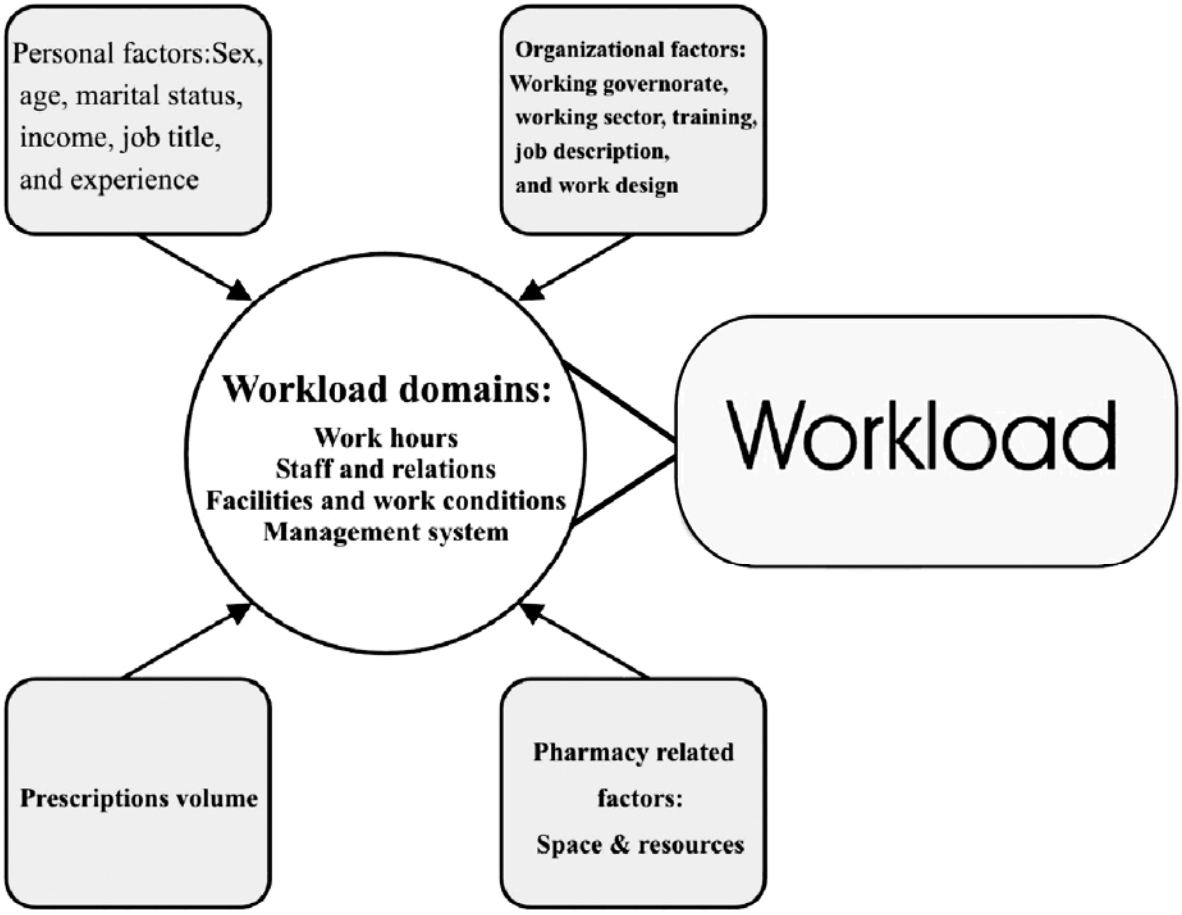
Personal factors include: gender, age, marital status, income, years of experience in the field, having another jobs and experience of working in other organizations before.

Organizational factors include: the different governorates of Gaza Strip, type of sector provide the services (MOH and UNRWA), having job description, receiving relevant training and the design of work.

Pharmacy related factors such as space, availability of equipment and resources have their impact on the workload perceptions.

Prescription volume which has its impact on the perceptions.

All these mentioned factors could influence the persons' experiences and affect their practices and feelings.



Conceptual framework for factors affecting workload status in PHC pharmacies

Chapter 4: Methodology

This chapter illustrates the study methodology. The chapter includes the study design, study population, method of the study and selection criteria. Also, it presents the instrument which was used in this study, it's validity, it's reliability, and data collection process, data processing, and data analysis. Finally, it presents limitations of the study.

4.1 Study design

The design of this study is descriptive analytical cross sectional one. Descriptive study as it describes the investigated phenomena. Analytical because it assesses the relationship between the investigated phenomena and other factors. Cross sectional study is convenient and it is quick and costs less (Burns and Grove, 1997).

4.2 Study population

The study population in this research included all pharmacists and pharmacists' technicians who were working at the PHC centers that belong to the MOH and UNRWA (219).

4.3 Study setting

The study was conducted at the MOH and the UNRWA PHC centers which are distributed among the five governorates in Gaza Strip. The total number of PHC centers that follow

both the MOH and UNRWA is 73 centers, 57 of them follow the MOH and 16 follow UNRWA.

4.4 Selection criteria

4.4.1 Inclusion criteria

All the formally employed pharmacists and pharmacists' technicians who were working in both the MOH and UNRWA PHC centers.

4.4.2 Exclusion criteria

Not formally employed pharmacists and pharmacists' technicians were excluded from the study.

Pharmacists and pharmacists' technicians who were abroad or in long holidays during the implementation period of the study.

Pharmacists and pharmacists' technicians who don't practice their work as usual because of the current political situation.

4.5 Ethical consideration and procedures

Commitments to the ethical considerations were maintained throughout the study. Approval was obtained from the School of Public Health at Al-Quds University to carry out the study. An approval letter was sent to the General Director of PHC in Gaza Strip (Annex 3), and another one was sent to the Acting Director of Health Programs in

UNRWA (Annex 4). An explanatory letter was attached to every questionnaire as an informed consent in order to maintain participants' rights (Annex 5).

4.6 Data collection methods and tools

The main instrument was a structured self developed questionnaire (Annex 6). It was administered by the researcher and eight trained assistants through face to face interviews. Each questionnaire took 20 to 25 minutes to be filled. Additionally, records review related to the number of prescriptions dispensed monthly in each center of the MOH and UNRWA centers was conducted. Records reviewing included recording the number of prescriptions in three months which were November 2007, December 2007, and January 2008.

The questionnaire consisted of five parts:

- The first part covered the socio-demographic factors such as, age, gender, and marital status.
- The second part covered the organizational factors, including pharmacy related factors and factors related to the organization itself.
- The third part covered the pharmacists and pharmacists' technician's perceptions of their workload regarding the domains of the workload.
- The fourth part included general questions to explore the employees' feelings towards their performance and towards the work climate of their organizations.
- The last part included open-ended questions, the employees were free to make comments about their workload and how it could be improved.

The collected questionnaires (216) were checked for completeness and logical filling prior to input onto the computer.

4.7 Pilot Study

Before starting the actual data collection process, a pilot study was conducted, as a pre-test for the questionnaire in order to assess the appropriateness of the instrument and to detect if there is a need for any modifications to be done. A sample of 10 pharmacists and technicians working in PHC centers in both the MOH and UNRWA ones were interviewed and filled the questionnaire. The questionnaire didn't require any modifications and therefore the pilot sample was included.

4.8 Validity

Content validity:

The questionnaire was discussed with expert committee to ensure that it was organized well, arranged in a logical sequence, and the questions covered all the points that need to to be covered. In order to validate the questionnaire used in this study, the researcher sent it to 10 different experts including, researchers, managers, pharmacists, and statisticians. All the comments of the experts were taken into consideration and as a result some modifications for some items were introduced.

4.9 Reliability

In order to ensure the reliability in this study, two steps were taken,

First, standardization of the implementation of the questionnaire. The same questionnaire was passed to all pharmacists and technicians who were included in the study and all of them were interviewed via face to face.

Second, all the data collectors were trained in the same manner on how to use the instrument.

4.10 Response rate

The study population consisted of 219 pharmacists and pharmacists' technicians within the five governorates of Gaza and the included 70 PHC centers. 216 (98.6%) responded.

4.11 Data entry and analysis

Data entry was done after over viewing of the filled questionnaires. The questionnaires which were filled were 216, from which, none of them were excluded because they were properly filled.

The second step was designing a data entry model using the computer Statistical Package for Social Sciences (SPSS) software.

The questionnaires were coded then were entered onto the computer.

The next step after data entry was data cleaning which was done to ensure that all data was entered correctly. This process was done through checking out a random number of the questionnaires and through conducting descriptive statistics and frequencies for all

variables. Data analysis was done on the light of the study objectives includes descriptive analysis, frequency tables were conducted for the study variables. Means and standard deviations were computed for the continuous numeric variables. Also recoding of certain variables took place and cross tabulation for specific study variables was formed.

Then, in order to explore the potential relationship between the studies variables, advanced statistical analysis were conducted, including: Independent T-test, One Way ANOVA test, Chi square test for categorical variables, P value was considered as a statistically significant if it equals or below 0.05.

4.12 Period of the study

The study was conducted in the year 2007. After the approval of the proposal by School of Public Health- Al Quds University, administrative letters were sent to the General Director of PHC Directorate in October 2007 and to the Acting Director of Health Programs in UNRWA. The pilot study was conducted in November 2007. Actual data was collected in December 2007 and January 2008. Data analysis and discussion was completed in March. The study took almost one year from its beginning.

4.13 Limitations of the study

- The general political situation which affects on the participation of some employees.
- Limited scientific resources like books and journals.
- The studied PHC centers were only the MOH clinics and UNRWA; the NGOs were not included.

- Three small clinics were difficult to be reached by the the researcher and her assistants and were in Rafah and Mid Zone.
- The study was cross sectional while organization situation differs by time and the employee's perceptions may differ by time.

Chapter 5: Results and Discussions

5.1 Descriptive analysis

5.1.1 Characteristics of study subjects:

A sample of 216 pharmacists and pharmacists' technicians was included in the study.

Table 5.1: Distribution of the study population by demographic characteristics

Variable	No.	%
Gender		
Male	106	49.1
Female	110	50.9
Total	**216**	**100.0**
***Age**		
30 Yrs and less	37	17.2
31 to 40 Yrs	110	50.9
More than 40 Yrs	69	31.9
Total	**216**	**100.0**
Marital Status		
Single	11	5.0
Married	201	93.1
Others	4	1.9
Total	**216**	**100.0**
No. of household members		
6 members and less	122	56.7
More than 6 members	93	43.3
Total	**215**	**100.0**
Income in NIS		
2000NIS and less	27	13.4
2001 to 3000 NIS	128	63.7
More than 3000 NIS	46	22.9
Total	**201**	**100.0**

*Mean=37.5, SD=6.28

As shown in table 5.1, 49.1% of the pharmacists and pharmacists' technicians were males and 50.9% were females. Although, it is not of a big difference but it reveals that females are engaging much more in the pharmacy workforce in Palestine. This result agrees with

the findings from the 2002 pharmacy workforce census in Britain where females exceeds males (52.6%, 47.4% respectively) (Hassell and Shann, 2003). The age of participants ranged from 23 to 58 years with an average of 37.3 and (S.D=6.82). Respondents from the age group of 30 and less ranked the least, while those from 31 to 40 represented half of the respondents. This goes with the 2002 Pharmacy Workforce Census in Great Britain which revealed that ages between from 30 to 39 accounts for the biggest proportion (Hassell and Shann, 2003). This may also be due to a current decrease in the employment and recruitment levels in the MOH.

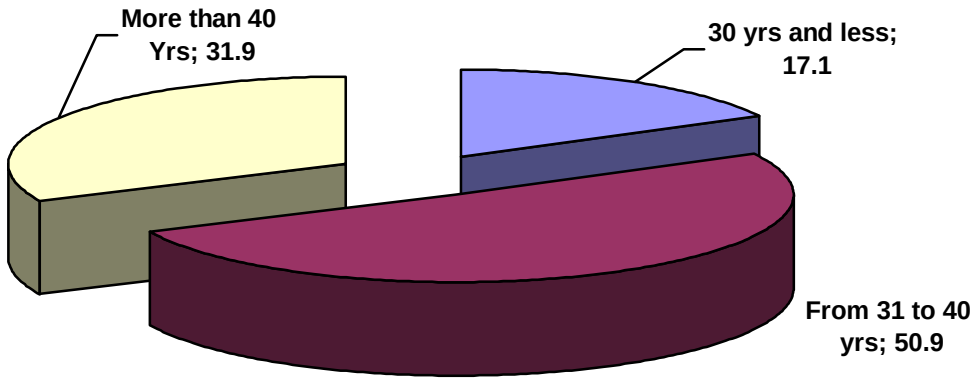


Figure 5.1: Distribution of the study population by age

The vast majority of the respondents were married with a percentage of 93.1%, the remaining were singles. This result differs from Croatian study which showed that the percentage of those who were married was 55.1% (Vokic and Bogdanic, 2007). This difference is due to social, religious, and cultural factors because in Palestine people are connected to the institution of marriage (family). The table shows that subjects with household members of 6 and less constitute 56.7% and those with more than 6 members constitute 43.3%. This result is different from the Croatian study which revealed that those respondents with household members of 4 and less constitute 96% (Vokic and Bogdanic, 2007). This difference is due to the fact that in Gaza, the fertility rate is high, and also possibly due to social factors as living together with their parents (expanded

families) and this could affect the perception of workload because of the family load and responsibilities. The table also shows that the income of 63.7% of the respondents ranged from 2001 to 3000 NIS while those with 2000 NIS and less represented 13.4%.

Table 5.2: Distribution of the study population by employment characteristics

Variable	No.	%
Governorate (work place)		
North Gaza	38	17.6
Gaza	73	33.8
Mid Zone	33	15.3
Khan Younis	42	19.4
Rafah	30	13.9
Total	**216**	**100.0**
Sector		
Government	173	80.1
UNRWA	43	19.9
Total	**216**	**100.0**
Working shift		
Morning	187	86.6
Evening	29	13.4
Total	**216**	**100.0**
***No. of employees in shift**		
Three Employees and less	114	52.8
More than 3 Employees	102	47.2
Total	**216**	**100.0**
****No. of formal daily working hours**		
6 hours (UNRWA)	38	17.6
More than 6 hours (MOH)	178	82.4
Total	**216**	**100.0**
Working extra hours in the same organization		
Yes	0	0.0
No	216	100.0
Total	**216**	**100.0**
Having other jobs in other organizations		
Yes	22	10.2
No	194	89.8
Total	**216**	**100.0**

*Mean = 3.5, MD = 3.0, SD= 1.81
**Mean =6.7, MD = 7.0, SD= 0.64

As illustrated in table 5.2, the respondents were distributed among the five governorates with 33.8% of them were working in Gaza governorate, 19.4 % of them were working in

Khan Younis, 17.6% were working in North Gaza and 15.3% in the Mid Zone and the rest with a percentage of 13.9 were working in Rafah. Thus, Gaza governorate represented the highest percentage of the respondents and Rafah represented the least one. This is on line with distribution of population in the different governorates as reported earlier (PCBS, 2008). The table also shows that vast majority of the respondents were working in the MOH centers with a percentage of 80.1%, and the rest in the UNRWA health centers. Regarding the shift, 86.6% of the respondents were working in the morning shift and just 13.4% worked in the evening one. This is due to the fact that few centers are working evening shifts. Also, it is shown that shifts with three employees and less represented 52.8% of the study population, and shifts with more than three represented 47.2% with an average of 3.5 (SD=1.81). In the table, it is shown that 82.4% of the respondents worked more than 6 hours daily, 17.6% worked 6 hours daily. It is clear that most of those represented the higher percentage were working in the MOH centers in which the formal hours are 7 hours and the official working hours per week is 35. While in the UNRWA, the formal hours are 6.15 and the official working hours in a week is 37.30. By the way, the formal working hours is acceptable and within the normal range, and this goes with guidelines set by PEIPB which reported that pharmacists should work a maximum of 48 hours in a week (PEIPB, 2004). The table illustrates that no one formally reported working extra hours in their centers because it is not permitted by the system of both the MOH and UNRWA centers. Regarding working in other organizations, few of the respondents with a percentage of 10.2 reported working extra hours outside their organizations as shown in the figure 5.2. The average of working hours for those working in other organizations is five hours per day which means that they work more than 52

hours per week and this should be avoided according to PEIPB (PEIPB, 2004).

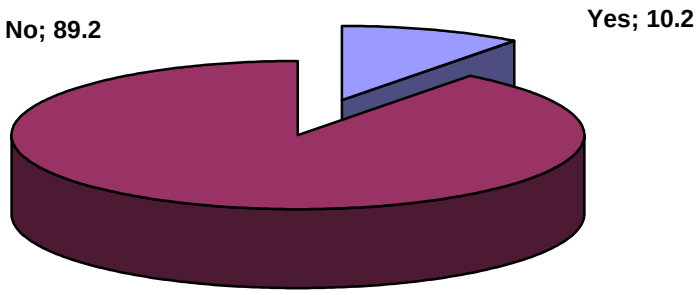


Figure 5.2: Distribution of the study population by having other jobs

Table 5.3: Distribution of the study population by managerial related factors

Variable	No.	%
Having job description		
Yes	27	12.5
No	169	78.2
DK	20	9.3
Total	**216**	**100.0**
Necessity of having job descriptions (for those answered no)		
Yes	154	91.1
No	13	7.7
DK	2	1.2
Total	**169**	**100.0**
Availability of official breaks		
No	213	98.6
DK	3	1.4
Total	**216**	**100.0**
Having in charge pharmacist		
Yes	149	69.0
No	67	31.0
Total	**216**	**100.0**
Having a supervisor		
Yes	216	100
No	0	0.0
Total	**216**	**100.0**
Work design		
Rotation	84	38.9
Fixed	15	6.9
Randomly	104	48.1
Doing every thing alone	13	6.1
Total	**216**	**100.0**

As shown in the table 5.3, the vast majority of respondents reported not having job descriptions with a percentage of 78.2% while those having job description represented 12.5% and those who don't know represented 9.3% as shown below in figure 5.3. This differences is due to the fact that most of the respondents worked in the MOH where there is no formal job description within the system neither for pharmacists nor for any other professions.

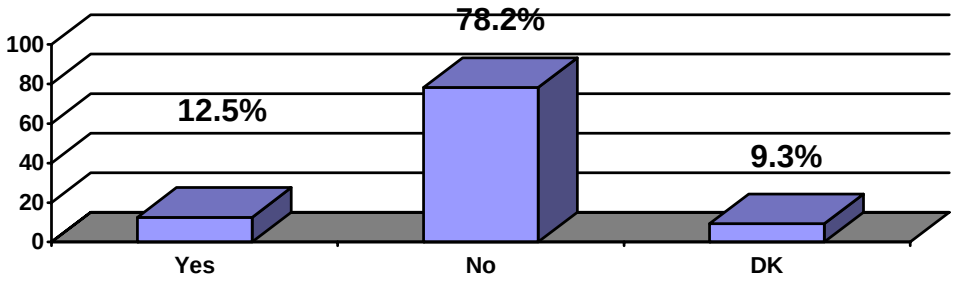


Figure 5.3: Distribution of the study population by having job description

When asking those with no job description about the necessity of having it, most of them with a percentage of 91.1% said yes it is important. Having job description is something critical in any organization because it reveals the duties and responsibilities for each job, working conditions, facilities and resources that should be available, skills and experience required for the job. With the availability of job descriptions, everyone will know the requirements of his/her job, the priorities of his/her job and what duties should be assigned to him/her according to his/her title, then he/she'll focus on his/her activities only and manage the stress of job overload (Mind Tools, 2007). The most important thing is that based on the responsibilities and duties assigned for each job as the job description model reveals, those decide on the recruitment and distribution of the employees in different centers will be able to determine the appropriate number of staff required for each center in order to perform the required duties.

The table (5.3) also illustrates that 98.6% of the respondents reported that their work system didn't allow having breaks during work hours and the rest didn't know if the system allows having breaks or not. Having breaks is something that shouldn't be ignored by any organization as PEIPB stated. PEIPB stated a shift of more than six hours should include a 30-minute meal break and a 15 minute break (PEIPB, 2004). Therefore, the management system in the MOH and UNRWA centers should permit having breaks during the work hours. The table also shows that 69% of the respondents reported having one responsible pharmacist and 31% of them report that they didn't have any. This result due to the fact that most of the respondents worked in the MOH as shown before in table 5.2 where there is one responsible pharmacist nearly in most of it's centers. The rest of the respondents worked in UNRWA centers and these currently run without a responsible pharmacist with the exception of two centers. This result didn't agree with the fact that pharmacies shouldn't be run without pharmacists who are the experts of drugs (American Society of Health-System Pharmacists, 2003). The technicians are supportive personnel and should work under the supervision of licensed pharmacists doing activities that don't require professional judgment (American Society of Health-System Pharmacists, 2003).

As shown in the table (5.3) 100% of the respondents reported having external supervisors. In the governmental sector, there are five supervisors, one for each governorate while in the UNRWA sector, there are two for all the governorates. Regarding work design in the pharmacies, 48.1% of the respondents reported that the work is done in a random fashion, while 38.9% of them reported that there is rotation in tasks and 6.9% reported that there is a fixed activities assigned to everyone. The least percentage which is 6% represented those who work alone in their pharmacies without colleagues and thus they do everything alone. Percentage of rotation is not high although, it gives employees opportunities to

perform a greater variety of tasks and is regarded as one of the motivating work designs as suggested by Hezberg in 1966 (Kotila, 2001).

Table 5.4: Distribution of the study population by education, training and experience related variables

Variable	No.	%
Job title		
Pharmacist	72	33.3
Pharmacist technician	144	66.7
Total	**216**	**100.0**
Place of graduation		
Gaza	151	69.9
West Bank	25	11.6
Other Places	40	18.5
Total	**216**	**100.0**
Qualification		
Diploma	142	65.7
BSc	74	34.3
Total	**216**	**100.0**
***Total years of experience in pharmacy field**		
10 Yrs and less	101	46.8
From 11 to 20 Yrs	80	37.0
More than 20 Yrs	35	16.2
Total	**216**	**100.0**
****Years of experience in current organization**		
5 Yrs and less	105	48.6
from 6 to 10 Yrs	72	33.3
More than 10 Yrs	39	18.1
Total	**216**	**100.0**
Working in other Organization before		
Yes	192	88.9
No	24	11.1
Total	**216**	**100.0**
Receiving relevant training course		
Yes	121	56.0
No	95	44.0
Total	**216**	**100.0**

*Mean = 12.9, MD = 12.0, SD= 6.5
**Mean =6.8, MD = 6.0, SD= 4.9

The table 5.4 shows that the pharmacists represented 33.3% of the total respondents, while the pharmacists' technicians represent 66.7% with a ratio of 1:2. This ratio is considered to

be acceptable and even if it is 1:3 as the American Society of Health-System Pharmacies (2003) which reported that there is a significant increase in the employment of technicians and expected to grow by 36% or more between 2000 and 2010 (American Society of Health-System Pharmacies, 2003). Pharmacists have important role in counseling and managing drug use while technicians are important in the technical aspects as dispensing (American Society of Health-System Pharmacists, 2003). Because UNRWA health centers don't have pharmacists except in two centers, UNRWA need to revise it's policies and recruit pharmacists.

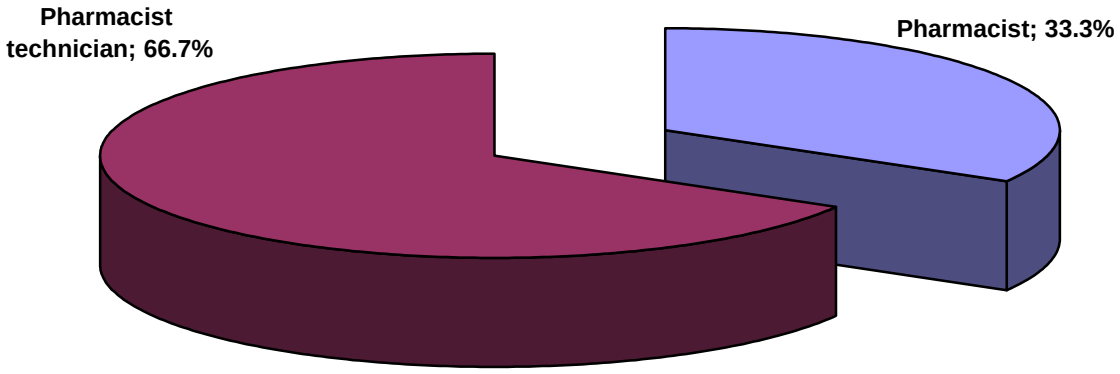


Figure 5.4: Distribution of the study population by job title

Regarding the place of graduation, most of the respondents with a percentage of 69.9% graduated from the Gaza Strip, while 11.6% graduated from West Bank and 18.5% graduated from outside Palestine. It means that most of them share the same educational experience regarding the pharmacy field and can work together in harmony. As illustrated in table 5.4, 65.7% of the respondents hold diploma (the actual percentage of technicians is 66.7) this is because two technicians had BSc in fields related to pharmacy, and thus the percentage of those with BSc is 34.3%. The table also shows that those with ten years and

less of experience in the field represented 46.8% while those with experience ranges from 11 to 20 years elicited a percentage of 37% (Mean=12.9, SD=6.5).

As illustrated in table 5.4, about half of the respondents (48.6%) had worked in their place for five years and less, while those worked from six to ten years represented 33.3%. This indicates that there is no or little job relocation for about 40% of the employees. This could be perceived good by some persons who prefer to stay where they are while, it could be perceived as bad by others because of routine. Also the table shows that 88.9% of respondents had experienced working in other organizations before.

Table 5.4 also illustrates that 56% of the respondents received relevant training while others did not. The majority of the respondents who received training are from the MOH and most of the training were held within the last 8 years. The training topics were about the drug storage which ranked at the top, the essential drug list, computer skills, drug-drug interaction and finally on the medical dictionary. Training is very important because it facilitates performing work by acquiring employees with the required skills and knowledge; it also refreshes and updates their information on pharmacy field (Croft, 1996). Training provides means of coping with stressful aspects of one's job (Dwyer and Fox, 2008). There should be training programs which focus on the importance of teaching employees methods of cope and adapt with stress at work especially in the area of work organization.

5.1.2 Availability of resources and essential items:

Regarding resources and equipment that are essential at work place, the table below shows how they are distributed among PHC sectors.

Table 5.5: Distribution of the study population responses regarding the availability of resources and essential items by working sector

Item	Gov				UNRWA			
	N	%	N	%	N	%	N	%
Chair	173	100.0	0	0.0	43	100.0	0	0.0
Disks	173	100.0	0	0.0	43	100.0	0	0.0
Shelves	173	100.0	0	0.0	43	100.0	0	0.0
Windows	168	97.1	5	2.9	38	88.4	5	11.6
Refrigerators	167	96.5	6	3.5	43	100.0	0	0.0
Air Con.	84	48.6	89	51.4	9	20.9	34	79.1
Fans	140	80.9	33	19.1	43	100.0	0	0.0
Warmer	65	37.6	108	62.4	29	67.4	4	32.6
Telephone	32	18.5	141	81.5	8	18.6	35	81.4
Computer	23	13.3	150	86.5	0	0.0	43	100.0
Register	133	76.9	40	23.1	41	95.3	2	4.7
Stationary	54	31.2	119	68.8	21	48.8	22	51.2
Medicine bags	128	74.0	45	26.0	40	93.0	3	7.0
Pharmaceutical books (PNF)	85	49.1	88	50.9	26	60.5	17	39.5
Enough Space	71	41.0	102	59.0	11	25.6	32	74.4
Shortage of drugs	164	94.8	9	5.2	3	7.0	40	93.0

Table 5.5 illustrates that in the governmental centers, the majority of the respondents (86%) did not have computers at their pharmacies, 81.5% didn't have telephones and 68.8% reported lack of stationary. Half of the respondents reported not having air conditions at their pharmacies which could have bad impact on drugs in summer season and half of them reported lack of information sources like PNF. Those reported problems with the availability of stationary and medicine bags were 68.8% and 26% respectively. It is important to indicate that 3.5% had no refrigerators, 2.9% have no windows for dispensing.

In UNRWA centers, 100% of the respondents reported not having computers and 81.4% of them reported not having telephones. Also, 79.1% of them have no air conditions, 39.5% had no information sources and 51.2% reported lack of stationary. They reported having enough medicine bags with a percentage of 93% and they didn't suffer from shortage of drugs.

Regarding the space, 59% of the respondents in the MOH centers and 74.4% of those working at UNRWA centers reported not having enough space in their pharmacies to move and for the drugs to be well arranged. Many had stressed on the bad need for having storage units. The table also shows that a percentage of 94.8% of those working in the MOH centers had experienced shortage of drugs during the year 2007 which is mainly due to the political and economic conditions in the Gaza Strip (MOH, 2008). All of them reported that they have chairs, disks, and shelves but some of them is not enough and not satisfied.

Generally, the UNRWA centers are better than the MOH centers regarding the availability of resources and essential items especially in the availability of drugs. Not having enough resources and essential items in both sectors affect the workload and makes it difficult for the employees to perform well and this doesn't agree with a survey done lately on health care workers in Alberta which revealed that majority of the respondents have the necessary tools, equipment and resources they require to do their jobs well (Lowe, 2006). Also the literature reveals that inadequate space seems to be a problem (Sandon, 2008). Thus, there is a bad need to ensure that all the centers are provided with the appropriate resources and their physical conditions are made appropriate and convenient according to the approved standards.

5.1.3 Employees' perceptions of their performance:

The table below describes how employees perceived their performance at work place given their perceived workload**.** It shows that 22.7% of the respondents reported that there is no occurrence of medication errors at all, while 54.2% reported that it happens seldom and 22.2% reported that it occurs sometimes. The table also shows that 70% of the respondents perceived their performance to be good or very good and 26.9% perceived it as normal and just 2.3% perceived it as bad. Finally the table shows that 81% of them were satisfied with their performance. In general, almost all had positive perceptions towards their performance. These perceptions are not logical since some employees reported having high workload, not having adequate number of employees and not having enough time for doing their activities. All these factors could affect their performance as the literature reveals (Health and Safety Committee, 2005).

Table 5.6: Distribution of the study population by their performance perceptions

Variable	No.	%
Experiencing medication errors		
Never	49	22.7
Seldom	117	54.2
Sometimes	48	22.2
Often	2	0.9
Total	**216**	**100.0**
Perception of performance		
Very good	50	23.1
Good	103	47.7
Normal	58	26.9
Bad	5	2.3
Total	**216**	**100.0**
Perceptions about performance		
Very satisfied	29	13.4
Satisfied	146	67.6
Uncertain	27	12.5
Dissatisfied	13	6.0
Very dissatisfied	1	0.5
Total	**216**	**100.0**

Table 5.7: Distribution of the study population by performing certain important activities

Item	No.	%
Labeling drugs dispensed		
Always	102	48.1
Often	66	31.1
Sometimes	38	17.9
Seldom	4	1.9
Never	2	1.0
Total	**212**	**100.0**
Writing the drug name		
Yes	107	50.5
No	105	49.5
Total	**212**	**100.0**
Writing the dosage		
Yes	209	98.6
No	3	1.4
Total	**212**	**100.0**
Writing the expiry date		
Yes	30	14.2
No	182	85.8
Total	**212**	**100.0**
Providing counseling		
Always	20	9.4
Often	40	18.9
Sometimes	73	34.4
Seldom	36	17.0
Never	43	20.3
Total	**212**	**100.0**

The table 5.7 shows that about half of the respondents (48.1%) always label the prescriptions and 1% never did it at all (Figure 5.4). When they were asked about what they used to write, only half of subjects reported writing the drug name and the others didn't, while 98.6% reported writing the dosage (frequency). Regarding the expiry date, only 14.2% reported writing it. Adequacy of labeling as the literature reports means writing drug name, dosage, and expiry date (Chergali, et al, 2004). Thus, in general they didn't do adequate labeling.

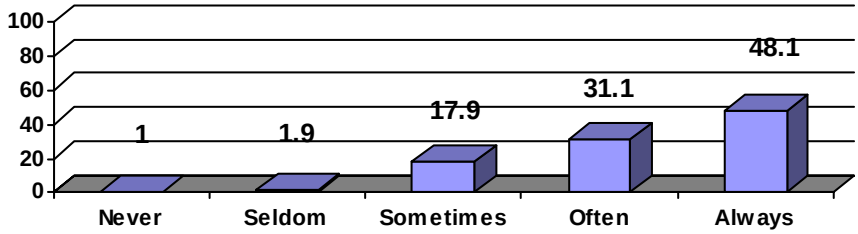


Figure 5.5: Distribution of the study population by labeling drug dispensed

Regarding practicing patient counseling, 20.3% of subjects reported not doing it at all, 34.4% reported doing it sometimes, and only 9.4% reported doing it always (Figure 5.5). The mean time spent in counseling is 1.5 minutes (SD=1.4), this time is not considered adequate for doing effective counseling as PEIPB reports (PEIPB, 2004). This issue should be taken seriously because counseling has the greatest impact on the patient's health. Not doing labeling and effective counseling could cause harm to the patients and therefore, it requires attention such as organizing workshops and training courses for pharmacists and technicians.

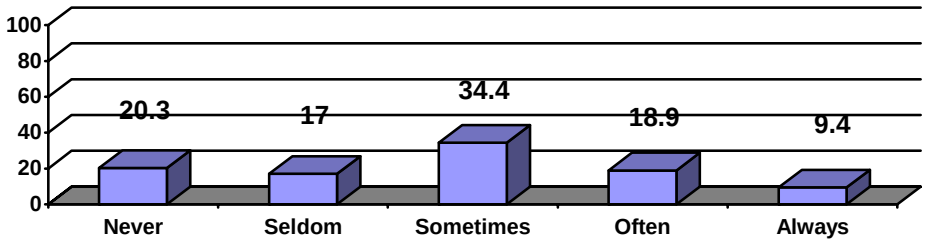


Figure 5.6: Distribution of the study population by providing counseling

5.1.4 Employees' perceptions towards their current work climate

Table 5.8 describes how the employees felt towards their work climate and the impact of such climate could have on them. Many respondents (86.1%) perceived their work to be stressful and only 11% of them perceived it as comfortable and this is a worrying indicator

which may reflect burn out tendency among employees (Sandon, 2008). A list of the most stressful things that faced at work are shown in annex 7.

Table 5.8: Distribution of the study population by perceptions of work climate

Perception of work environment		
Comfortable	24	11.1
Uncertain	6	2.8
Stressful	186	86.1
Total	**216**	**100.0**
Being forced to go to work		
Strongly disagree	12	5.8
Disagree	93	44.7
Neither agree nor disagree	7	3.3
Agree	80	38.5
Strongly agree	16	7.7
Total	**208**	**100.0**
Work has negative impact on personal life		
Strongly disagree	11	5.1
Disagree	109	51.0
Neither agree nor disagree	23	10.7
Agree	59	27.6
Strongly agree	12	5.6
Total	**214**	**100.0**
Choice of preference		
Work in another Organization	54	25.0
Leave the pharmacy field	14	6.5
Leave the country	42	19.4
Others (stay in the organization)	106	49.1
Total	216	100.0

Participants with a percentage of 46.2% felt that they're forced to go to their work, while 50% didn't feel that way. A percentage of 56% of them didn't think that their work had a negative impact on their personal life, while 33.2% thought that it did. Quarter of them of them preferred working in other organizations in Palestine, 6.5% preferred leaving their field and working in other professions, 19.4% preferred leaving their country and searching for better job conditions and finally, 49.1% preferred staying at the same place in spite of

the stressful nature of their work which reflects high commitment towards work. This agrees with the literature which reports that employees may stay at work even if they are not satisfied because they have a strong intent or desire to remain employed by the organization (Curry, Wakefield, Price and Mueller, 1986). This has additional meaning in the Palestinian context where people lack security feeling and prefer to stay at their organizations. Thus, those in the management should value this, take it in consideration and try to retain their employees because they are a real investment.

5.1.5 Descriptive analysis for workload domains

Work hours, staff and relations, facilities and work conditions, and the management system represent the domains of workload through which the employees judge about their perceptions towards their workload. In addition to these domains, prescription volume is an important variable that affects how employees perceive their workload.

The overall perception about workload was 3.3 out of 5 as table 5.9 illustrates. Work hours domain is concerned mainly with the perception about the adequacy of working hours for doing the activities, staying after official hours to complete work, taking work at home, getting enough breaks and difficulties in managing time. The work hour domain elicited the highest positive perceptions among all the domains (3.8/5). Pharmacists suffered in USA from excessive working hours and their opportunity to take adequate breaks were rated most negative and this has a negative impact on productivity, quality of care and pharmacists satisfaction (Kreling, Doucette, Mott, Gaither, Pederson and Schommer, 2006).

Facilities and work conditions domain which illustrates the perception about the use of computers as facilitator, having adequate illumination and having interruptions and distractions, followed the work hours domain in its scores (3.6/5). The literature reports problems with illumination available at work place (Jackson and Reines, 2003). Also, having frequent interruptions and distractions which could affect the perceptions towards the workload (Flynn, Barker, Gibson, Pearson, Berger and Smith, 1999), were reported by the respondents. The reviewers' interruptions ranked first among the distractions (Annex 8) and this agrees with the literature (Mott, Doucette, Gaither, Kreling and Schommer, 2005). But this didn't affect their final perception towards facilities and work conditions domain.

Staffing and relations domain demonstrates perceptions on the efficacy of work design, fairness in dividing work between colleagues, attitude toward the manager (responsible pharmacist) and believes about their external supervisor in term of managerial competencies. Also, it illustrates the relationships with the responsible pharmacist, relationships and cooperation between colleagues. The scores of this domain was 3.2/5. The literature reported that there is a problem in not having the adequate number of pharmacists and technicians (PEIPB, 2004) and (Knapp, 2002). It was reported that the pharmacist's interpersonal relationships and stress could affect his/her workload (Jackson and Reines, 2003).

The management system domain reflects perceptions of supervisor's role, getting enough motivations from management, and satisfaction level at work. The management system ranked the least (2.9/5) which reflects a real problem. The literature indicates different results where the motivation to work at the pharmacy and job satisfaction were rated most

positive and this has a positive impact on reducing the workload and errors (Kreling, Doucette, Mott, Gaither, Pederson and Schommer, 2006).

The domain of the management system should be paid more attention since it could affect the employee's retention and motivation of pharmacists and technicians (Gaither, et al, 2007).

Table 5.9: Distribution of workload domains

Domain	Mean	MD	SD
Work hours	3.8	4.0	0.7
Staff and relations	3.2	3.4	0.8
Facilities and work conditions	3.6	3.5	0.3
Management system	2.9	3.0	0.5
Overall perception	3.3	3.3	0.3

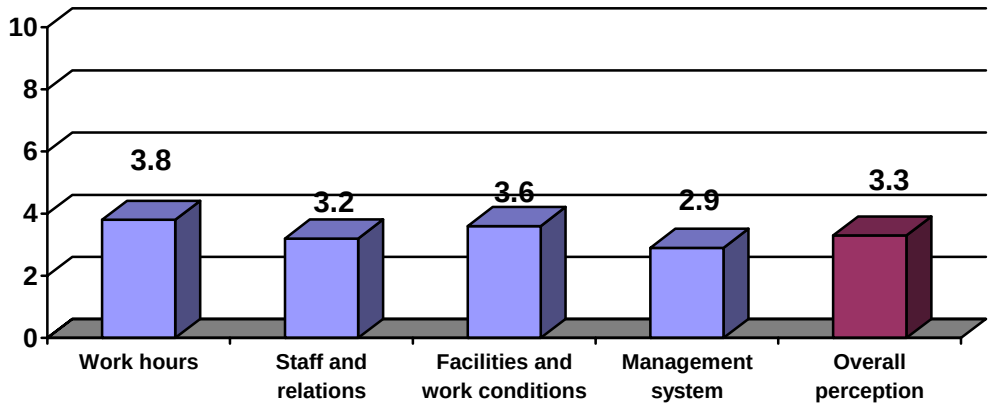


Figure 5.7: Workload domains by their means

Table 5.10: Distribution of the study population by prescriptions

	Item	No.	%
	Perception about the volume of prescriptions dispensed daily		
	High	92	43.4
	Normal	102	48.1
	Low	18	8.5
	Total	**212**	**100.0**

Of the respondents, 8.5% perceived the volume of prescription to be low, while 48.1% perceived it to be normal and within their capacity and could be handled. Those perceived it as high represented 43.4%. This agrees with the literature which reports that volume of prescriptions seemed to be very high and pharmacists had a problem in dealing with it (Practicing Pharmacists Association, 2006).

5.1.6 Descriptive analysis for prescriptions dispensed monthly

Records review included recording the number of prescriptions dispensed monthly in all MOH and UNRWA centers

Table 5.11: Distribution of the prescriptions means by governorates

Governorates	N	Mean	SD
North Gaza	11	4989.8	6710.3
Gaza governorate	20	5820.5	6274.3
Mid Zone	18	5111.4	6088.9
Khan Younis	14	4292.5	6350.7
Rafah	7	5592.9	7735.2
Total	70	5237.3	6521.7

* Some clinics have double shifts therefore, regarded as two clinics on lime with registration system.

As shown in the table above, Gaza governorate represented the highest prescriptions mean and this seems to be logical because the number of population in Gaza City is the highest among the different governorates. Therefore, more centers are expected to operate there.

While Khan Younis represented the least one. Regarding the sector, UNRWA centers suffered more than the MOH centers in the volume of prescriptions dispensed monthly and the difference is so big as shown below in table 5.12.

Table 5.12: Distribution of the prescriptions means by sector

Sector	Mean	MD	SD
MOH	2318.4	1656.0	1624.5
UNRWA	16980	15604.0	5534.5

Table 5.13: Comparison between MOH and UNRWA weekly working staff hrs and the British standard for dispensing

Number of prescriptions dispensed per month	Recommended dispensing staff hours each week	Gov	UNRWA	Note
		Mean (Working staff hours each week)	Mean (Working staff hours each week)	
1-499	10	56.6		Excess of time
500-999	20	75.8		Excess of time
1000-1999	30	107.7		Excess of time
2000-3499	40	167.8		Excess of time
3500-4999	56	166.5		Excess of time
5000-6499	75	258.1		Excess of time
9500-10999	131		75.0	Deficiency of time
11000-12499	150		75.0	Deficiency of time
12500-13999	169		91.1	Deficiency of time
1400-15499	188		75.0	Deficiency of time
15500-16999	207		105.7	Deficiency of time
17000-18499	226		75.0	Deficiency of time
24500-25999	321		150.0	Deficiency
26000-27499	340		150.0	Deficiency

The first and second columns in table 5.13 shows the number of prescriptions dispensed monthly and the recommended dispensing staff hours each week as the British Medical Association stated in 2007. As shown in the table above, the MOH centers don't suffer

from inadequate time for performing their activities, on the contrary they have an excess of time. Therefore, they don't complain from workload while in the UNRWA centers, the employees really suffered from a real problem regarding the time available. The working staff hours means in the UNRWA centers is not adequate for performing their dispensing activities and to solve such problem, the management have to recruit new employees. This table serves as a benchmark for determining the level of staffing hours in PHC centers regarding prescriptions dispensed monthly.

5.2 Inferential analysis

The following results explore the relationships between selected independent variables and the study dependent variable which reflects the perceptions of workload domains and prescription volume variable.

5.2.1 Relationship between perceived domains and personal factors:

Table 5.14: Differences in workload domains by gender

Dependent variable "workload domain"	Independent variable "gender"	N	Mean	Std.	T	Sig
Work hours	Male	106	3.8	0.6	1.97	0.050
	Female	110	3.7	0.8		
Staff and relations	Male	106	3.2	0.9	-1.047	0.296
	Female	110	3.3	0.7		
Facilities and work conditions	Male	106	3.6	0.4	1.081	0.281
	Female	110	3.5	0.3		
Management system	Male	106	2.9	0.6	-0.01	0.992
	Female	110	2.9	0.5		
Overall perception	Male	106	3.3	0.4	0.330	0.738
	Female	110	3.3	0.3		

Table 5.14 shows that females and males had the same mean scores in their overall workload perception. The differences between males and females were not statistically

significant (p value=0.738), this result agrees with the findings of the Croatian study which shows no differences between females and males (Vokic and Bogdanic, 2007). Management need to show gender sensitivity and to have flexible work scheme particularly for females. The table also shows that there was a difference between males and females in their perceptions of the work hours domain in favour of males and this difference was statistically significant (p value=0.05).

Similarly, annex 9 shows that younger people elicited higher scores than their colleagues who are older in relation to work hours domain. The difference between the groups were statistically significant (p value=0.05). This result agrees with the Croatian survey which reported that those of older ages experienced higher levels of work stress than younger did because they can bear much of the excessive work (Vokic and Bogdanic, 2007).

At the same time, those of younger ages perceived their management system acceptable in a lesser degree than those above 40 years. This may be due to the fact that those younger in age always expect much more from their systems and this is why the tendency to burnout occurs much more among them (Hardigan and Carvajal, 2007). The percentage of those less than 40 years old was about 68% and if we don't work to improve their perceptions toward the system, we may loose them (Annex 9)

Table 5.15: Differences in workload domains by years of experience

Dependent variable "workload domain"	Independent variable "experience"	N	Mean	SD		Sum of Squares	df	Mean Square	F	Sig
Work hours	10Yrs and less	101	3.9	0.6	Between Groups	6.9	2	3.4	6.8	0.001
	From 11 to 20 Yrs	80	3.7	0.7	Within Groups	108.5	213	0.5		
	More than 20 Yrs	35	3.4	1.0	Total	115.4	215			
Staff and relations	10Yrs and less	101	3.4	0.8	Between Groups	3.1	2	1.5	2.3	0.103
	From 11 to 20 Yrs	80	3.1	0.9	Within Groups	142.3	213	0.7		
	More than 20 Yrs	35	3.1	0.7	Total	145.4	215			
Facilities and work conditions	10Yrs and less	101	3.5	0.3	Between Groups	0.5	2	0.3	2.4	0.097
	From 11 to 20 Yrs	80	3.6	0.4	Within Groups	24.6	213	0.1		
	More than 20 Yrs	35	3.5	0.3	Total	25.1	215			
Management system	10Yrs and less	101	2.8	0.5	Between Groups	1.0	2	0.5	1.7	0.178
	From 11 to 20 Yrs	80	3.0	0.5	Within Groups	59.1	213	0.3		
	More than 20 Yrs	35	2.9	0.6	Total	60.0	215			
Overall perception	10Yrs and less	101	3.3	0.4	Between Groups	0.7	2	0.3	2.7	0.067
	From 11 to 20 Yrs	80	3.3	0.3	Within Groups	25.5	213	0.1		
	More than 20 Yrs	35	3.2	0.4	Total	26.1	215			

As shown in table (5.15), no obvious differences in the overall perceptions of the different categories noticed (p value=0.067). In contrary, the difference between the categories appeared in their perceptions towards work hours and it was of statistical significance (p value=0.001). Those with more years of experience suffer much from excessive work hours and this is logical because of energy level which decreases with age and the responsibilities which increases with the advance of age. So, years of experience reflect real ages of the respondents, and thus those of more experience years are older in ages and can't bear excessive work as younger ones as explained before when discussing the age variable (Vokic and Bogdanic, 2007). But their perceptions towards the system tended to be acceptable with little difference but not of statistical significance and this is because they expect more from the system than the younger ones as the literature shows (Hardigan and Carvajal, 2007). This issue needs to be revised.

Regarding the marital status (Annex 10), those who are not married nor singles elicited higher scores than the others, but the difference was not of statistical significance (p value=0.243). It is not logic to judge here on the effect of the different categories towards workload's perceptions because those married represent 93% and the single and others

represent 5% and 2% respectively and thus we can't compare between these categories to figure it's real impact on workload perceptions. By the way the literature reports that those who are married experienced higher levels of work stress due to their work/home conflict (Vokic and Bogdanic, 2007).

Table 5.16 illustrates that those income equals 3000 NIS and less elicited higher scores than those income above 3000 NIS and this difference was of statistical significance (p value=0.018). This agrees with the literature which reports that those of higher income experience higher workload than the others (Wilkins, 2007). It may be due to the fact that those of higher income in our settings either had long years of experience and therefore they are already tired or they are in position of responsibility so they experience stress or may be they have higher expectations.

Table 5.16: Differences in workload domains by income

Dependent variable "workload domain"	Independent variable "income"	N	Mean	SD		Sum of Squares	df	Mean Square	F	Sig
Work hours	2000 NIS and less	27	3.9	0.5	Between Groups	3.9	2	1.9	4.1	0.018
	2001 to 3000 NIS	128	3.9	0.7	Within Groups	93.6	198	0.5		
	More than 3000 NIS	46	3.5	0.7	Total	97.5	200			
Staff and relations	2000 NIS and less	27	3.6	0.7	Between Groups	6.0	2	3.0	4.6	0.011
	2001 to 3000 NIS	128	3.3	0.9	Within Groups	129.6	198	0.7		
	More than 3000 NIS	46	3.0	0.7	Total	135.6	200			
Facilities and work conditions	2000 NIC and less	27	3.6	0.3	Between Groups	0.1	2	0.0	0.2	0.787
	2001 to 3000 NIS	128	3.6	0.4	Within Groups	22.8	198	0.1		
	More than 3000 NIS	46	3.6	0.3	Total	22.9	200			
Management system	2000 NIS and less	27	3.0	0.5	Between Groups	1.3	2	0.6	2.2	0.115
	2001 to 3000 NIS	128	2.8	0.6	Within Groups	56.6	198	0.3		
	More than 3000 NIS	46	3.0	0.4	Total	57.8	200			
Overall perception	2000 NIS and less	27	3.9	0.5	Between Groups	3.9	2	1.9	4.1	0.018
	2001 to 3000 NIS	128	3.9	0.7	Within Groups	93.6	198	0.5		
	More than 3000 NIS	46	3.5	0.7	Total	97.5	200			

Table 5.17: Differences in workload domains by job title

Dependent variable "workload domain"	Independent variable "job title"	N	Mean	Std.	T	Sig
Work hours	Pharmacist	72	4.0	0.4	4.12	0.001
	Pharmacist Tec	144	3.6	0.8		
Staff and relations	Pharmacist	72	3.2	0.7	-.810	0.419
	Pharmacist Tec	144	3.3	0.9		
Facilities and work conditions	Pharmacist	72	3.5	0.3	-.731	0.466
	Pharmacist Tec	144	3.6	0.4		
Management system	Pharmacist	72	2.8	0.5	-1.472	0.142
	Pharmacist Tec	144	2.9	0.5		
Overall perception	Pharmacist	72	3.3	0.3	0.017	0.987
	Pharmacist Tec	144	3.3	0.4		

In contrast to income, there were no statistical significant differences between pharmacists and technicians as both had the same mean scores in their overall workload perception as shown in table 5.17. But pharmacists elicited higher scores in their perception towards the work hours domain than technicians and the difference was statistically significant (p value=0.001). This is due to the fact that technicians suffered much more from workload in the UNRWA centers where they represented 95% of the employees. And, they also suffered in the governmental centers where they represent 60% and engaged in dispensing process more than pharmacists in some centers.

The respondents in the UNRWA centers suffered much from not having adequate number of employees (Annex 11). This is due to the fact that the volume of prescriptions in UNRWA health centers as shown in the table (5.13) is too high and need more employees to handle . Such problem should be addressed as fast as possible. Regarding their perceptions towards staff and relations and facilities and work conditions, both of them tended to be positive but in less degree among pharmacists than technicians. Also both of them perceived their system to be acceptable but with a less degree in pharmacists than

technicians. This is due to the fact that the majority of both of them felt unsatisfied with their system regarding motivation (Annex 7).

5.2.2 Relationship between perceived domains and organizational factors:

The following section discusses the relationship between governorates, responsibility, shift, training, job description, the way the work designed and perceptions of workload domains.

Table 5.18: Differences in workload domains by governorate

Dependent variable "workload domain"	Independent variable "governorate"	N	Mean	SD		Sum of Squares	df	Mean Square	F	Sig
Work hours	North Gaza	38	3.9	0.5	Between Groups	12.8	4	3.2	6.6	0.001
	Gaza	73	3.8	0.8	Within Groups	102.5	211	0.5		
	Mid Zone	33	3.2	0.6	Total	115.4	215			
	Khan Younis	42	3.9	0.5						
	Rafah	30	3.7	0.8						
Staff and relations	North Gaza	38	3.4	0.6	Between Groups	8.9	4	2.2	3.420	0.010
	Gaza	73	3.3	0.8	Within Groups	136.6	211	0.6		
	Mid Zone	33	2.8	1.1	Total	145.4	215			
	Khan Younis	42	3.3	0.8						
	Rafah	30	3.3	0.6						
Facilities and work conditions	North Gaza	38	3.5	0.4	Between Groups	0.5	4	0.1	0.972	0.424
	Gaza	73	3.6	0.4	Within Groups	24.7	211	0.1		
	Mid Zone	33	3.6	0.2	Total	25.1	215			
	Khan Younis	42	3.5	0.4						
	Rafah	30	3.5	0.3						
Management system	North Gaza	38	2.6	0.5	Between Groups	15.0	4	3.7	17.6	0.001
	Gaza	73	3.0	0.4	Within Groups	45.1	211	0.2		
	Mid Zone	33	3.2	0.4	Total	60.0	215			
	Khan Younis	42	3.1	0.4						
	Rafah	30	2.4	0.6						
Overall perception	North Gaza	38	3.3	0.3	Between Groups	2.5	4	0.6	5.5	0.001
	Gaza	73	3.4	0.4	Within Groups	23.6	211	0.1		
	Mid Zone	33	3.1	0.4	Total	26.1	215			
	Khan Younis	42	3.4	0.3						
	Rafah	30	3.1	0.3						

The overall perceptions towards workload domains regarding the governorates tended to be positive with differences among the governorates. Gaza governorate and Khan Younis tended to have equal more positive perceptions than North Gaza which ranked second and then Mid Zone and Rafah. The differences between the five governorates were statistically

significant (p value=0.001). Regarding their work hours' perceptions, all tended to be positive with slight differences among them, North and Khan Younis coming first with equal positive tendency and Mid Zone ranked the last one.

This result appeared in The Mid Zone due to the fact that most of the respondents there either worked alone with no colleagues or don't have adequate number of employees. The differences were statically significant (p value=0.001). The perceptions towards staff and relations tend to be positive in all governorates except Mid Zone in which it was perceived less for the same reasons discussed before. North Gaza had the most positive tendency and these differences were statistically significant (p value=0.01). Their perceptions towards the management system revealed that Mid Zone and Khan Younis tended to be positive then ranked Gaza with acceptable perception then North Gaza and finally Rafah who tended to be acceptable in their perceptions (p value=0.001). We need to go deeply in further studies to explore the reasons behind such problem in Rafah governorate.

As shown in table 5.19, the overall perception of workload domains in MOH was higher than UNRWA. The differences were statistically significant (p value=0.001). Regarding perceptions towards work hours, those worked in UNRWA tended to perceive it as acceptable while those in the MOH tended to perceive it as very positive and this difference seemed to be of statistical significance (p value=0.001). This is due to the fact that the prescription volume and the volume of other activities in the centers that followed UNRWA are so high compared to the time available and thus they suffered from excessive workload (Gaser, 2007) and in addition to the fact that they had no adequate number of staff (Annex 11).

Table 5.19: Differences in workload domains by sector

Dependent variable "workload domain"	Independent variable "sector"	N	Mean	Std.	T	Sig
Work hours	Gov	173	4.8	0.5	13.63	0.001
	UNRWA	43	2.7	0.6		
Staff and relations	Gov	173	3.3	0.9	4.165	0.001
	UNRWA	43	2.9	0.4		
Facilities and work conditions	Gov	173	3.6	0.3	1.606	0.093
	UNRWA	43	3.5	0.4		
Management system	Gov	173	2.8	0.5	-5.394	0.001
	UNRWA	43	3.2	0.5		
Overall perception	Gov	173	3.6	0.3	4.88	0.001
	UNRWA	43	3.1	0.3		

Table 5.20 shows that those who received training courses elicited higher scores than those who didn't in the overall perception towards workload. The differences among them were statistically significant (p value=0.042). This difference showed that those who received training tended to perceive workload in a more positive manner. The same result appeared in the perceptions of work hours and staff and relations where the difference was of statistical significance (p value=0.020 and 0.018) respectively. This result due to the fact that training facilitates the work and provides the employees with required skills that enable to work better and faster (Lowe, 2006). There was no statistical significant difference in their perceptions towards facilities and work conditions. Both of them perceived the system's role to be acceptable in the same degree.

This result reflects the importance of training in pharmacy field and the important role the system play in offering it, thus those in management in both MOH and UNRWA which has no role in training as employees have reported, should work much on such issue and make training needs assessment.

Table 5.20: Differences in workload domains by training

Dependent variable "workload domain"	Independent variable "training"	N	Mean	Std.	T	Sig
Work hours	Yes	121	3.8	0.7	2.27	0.020
	No	95	3.6	0.8		
Staff and relations	Yes	121	3.4	0.7	2.380	0.018
	No	95	3.1	0.9		
Facilities and work conditions	Yes	121	3.5	0.3	-.499	0.618
	No	95	3.6	0.3		
Management system	Yes	121	2.9	0.5	-.900	0.369
	No	95	2.9	0.5		
Overall perception	Yes	121	3.3	0.3	1.987	0.042
	No	95	3.2	0.4		

Table 5.21: Differences in workload domains by job description

Dependent variable "workload domain"	Independent variable "job description"	N	Mean	SD		Sum of Squares	df	Mean Square	F	Sig
Work hours	Yes	27	2.9	0.8	Between Groups	24.5	2	12.2	28.7	0.001
	No	169	3.9	0.6	Within Groups	90.9	213	0.4		
	DK	20	3.5	0.9	Total	115.4	215			
Staff and relations	Yes	27	3.0	0.6	Between Groups	2.5	2	1.2	1.9	0.158
	No	169	3.3	0.8	Within Groups	142.9	213	0.7		
	DK	20	3.0	0.9	Total	145.4	215			
Facilities and work conditions	Yes	27	3.6	0.3	Between Groups	0.6	2	0.3	2.4	0.092
	No	169	3.6	0.3	Within Groups	24.6	213	0.1		
	DK	20	3.4	0.5	Total	25.1	215			
Management system	Yes	27	3.2	0.4	Between Groups	3.8	2	1.9	7.1	0.001
	No	169	2.8	0.5	Within Groups	56.3	213	0.3		
	DK	20	3.0	0.5	Total	60.0	215			
Overall perception	Yes	27	3.2	0.4	Between Groups	0.7	2	0.4	3.0	0.052
	No	169	3.3	0.3	Within Groups	25.4	213	0.1		
	DK	20	3.2	0.4	Total	26.1	215			

Job descriptions are entirely not used in MOH, while they are used in UNRWA health centers. There was no statistical significant difference between those who had job description and those who didn't. This result doesn't seem logical because it is supposed that job descriptions play an important role in decreasing work stress and work overload (Mind Tools, 2007). But as stated earlier the technicians in UNRWA suffered from excessive working hours and this observation could affect their perception. However having job descriptions is necessary in all centers.

Those who had job descriptions tended to perceive their work hours less positively than the others with a statistical significant differences between them (p value=0.001). In contrary, those with job descriptions, positively scored in the management system than their colleagues who don't have job descriptions with statistical significant differences (p value=0.001).

Table 5.22: Differences in workload domains by work design

Dependent variable "workload domain"	Independent variable "work design"	N	Mean	SD		Sum of Squares	df	Mean Square	F	Sig
Work hours	Rotation	84	3.5	0.8	Between Groups	8.4	3	2.8	5.5	0.001
	Fixed activities	15	4.1	0.3	Within Groups	107.0	212	0.5		
	Randomly	104	3.9	0.7	Total	115.4	215			
	Do everything alone	13	3.8	0.6						
Staff and relations	Rotation	84	3.3	0.6	Between Groups	48.2	3	16.1	35.0	0.001
	Fixed activities	15	3.5	0.9	Within Groups	97.2	212	0.5		
	Randomly	104	3.4	0.7	Total	145.4	215			
	Do everything alone	13	1.4	0.9						
Facilities and work conditions	Rotation	84	3.5	0.3	Between Groups	1.0	3	0.3	2.8	0.038
	fixed activities	15	3.7	0.2	Within Groups	24.2	212	0.1		
	Randomly	104	3.6	0.3	Total	25.1	215			
	Do everything alone	13	3.7	0.4						
Management system	Rotation	84	2.9	0.6	Between Groups	0.7	3	0.2	0.9	0.452
	Fixed activities	15	3.0	0.3	Within Groups	59.3	212	0.3		
	Randomly	104	2.9	0.5	Total	60.0	215			
	Do everything alone	13	3.1	0.4						
Overall perception	Rotation	84	3.2	0.3	Between Groups	3.2	3	1.1	10.0	0.001
	Fixed activities	15	3.5	0.3	Within Groups	22.9	212	0.1		
	Randomly	104	3.3	0.4	Total	26.1	215			
	Do everything alone	13	2.9	0.3		8.4	3	2.8		

As shown in the table (5.22), the overall perception towards workload domains tended to be positive with a statistical significant differences between the different categories (p value=0.001). The differences revealed that those whose work is designed as fixed tended to perceive their workload more positively than the others, then ranked those whose work designed randomly and then those who do rotation mostly in all activities and finally, ranked those who do everything alone with an acceptable perception. The same ranking

reflected in their perceptions towards work hours with a significant statistical difference (p value=0.001).

It is clear that those worked alone had less positive perceptions than others and this is due mainly to the fact that they used to do everything without others assistance and even if the work is not heavy they felt lonely without being with their colleagues which finally may affect their perceptions. Those who had the most positive perceptions are those who had fixed activities assigned to them all of the time mostly, maybe because such division made them feel better. The surprising thing was that those whose work is designed randomly tended to perceive the workload more positive than those whose work designed as rotation. May be because there is cooperation and good relationships between those worked randomly which affect the way they perceived their workload.

By the way there is no certain design that is better than the other, it depends always on how much we are satisfied with our design. However this doesn't agree with the literature as it is supposed that rotation is one of the motivating work designs (Kotila, 2001).

Table 5.23: Differences in workload domains by workload level

Independent domain "workload domain"	Dependent variable "workload level"	N	Mean	SD		Sum of Squares	df	Mean Square	F	Sig
Work hours	very high	39	2.8	0.8	Between Groups	47.2	4.0	11.8	36.5	0.001
	High	50	3.7	0.6	Within Groups	68.2	211.0	0.3		
	Normal	119	4.0	0.5	Total	115.4	215.0			
	Low	4	4.5	0.7						
	Very low	4	4.3	0.6						
Staff and relations	very high	39	3.0	0.5	Between Groups	19.3	4.0	4.8	8.1	0.001
	High	50	3.4	0.7	Within Groups	126.2	211.0	0.6		
	Normal	119	3.3	0.8	Total	145.4	215.0			
	Low	4	3.1	1.6						
	Very low	4	1.4	0.3						
Facilities and work conditions	very high	39	3.5	0.4	Between Groups	1.5	4.0	0.4	3.4	0.010
	High	50	3.5	0.4	Within Groups	23.6	211.0	0.1		
	Normal	119	3.6	0.3	Total	25.1	215.0			
	Low	4	3.3	0.5						
	Very low	4	4.0	0.4						
Management system	very high	39	3.1	0.5	Between Groups	7.4	4.0	1.9	7.4	0.001
	High	50	3.0	0.5	Within Groups	52.6	211.0	0.2		
	Normal	119	2.7	0.5	Total	60.0	215.0			
	Low	4	2.9	0.4		47.2	4.0	11.8		
	Very low	4	3.3	0.1		68.2	211.0	0.3		
Overall perception	very high	39	2.8	0.8	Between Groups				8.1	0.001
	High	50	3.7	0.6	Within Groups					
	Normal	119	4.0	0.5	Total					
	Low	4	4.5	0.7		19.3	4.0	4.8		
	Very low	4	4.3	0.6		126.2	211.0	0.6		

The overall perceptions of different categories of different levels of workload tended to be positive towards all domains with a significant difference between them (p value=0.001). Those who reported having very high workload level tended to perceive the workload domains less positive than the others. Thus, the tendency towards having more positive perceptions increases when workload level decreases and this agreed with the literature. This is logic and agreed with what reported in the literature review about excessive working hours and inadequate time and its impact on the perceptions of workload (RPSGB, 2006).

The positive perceptions in the different domains reflected relatively positive perceptions towards workload level in general. We should mainly work on the perceptions towards the system to improve it by strengthening the role of supervision, working on motivation as possible in order to enhance the pharmacists and technicians perceptions.

Table 5.24: Differences in perceived domains by volume of prescriptions dispensed monthly

Dependent variable "workload domain"	Independent variable "prescriptions volume"	N	Mean	SD		Sum of Squares	df	Mean Square	F	Sig
Work hours	Less than 1000	46	4.1	0.5	Between Groups	64.6	4	16.1	67.0	0.000
	1000-2999	64	3.9	0.5	Within Groups	50.8	211	0.2		
	3000-4999	55	4.1	0.4	Total	115.4	215			
	5000-6999	8	4.1	0.4						
	7000 and more	43	2.7	0.6						
Staff and relations	Less than 1000	46	3.0	1.2	Between Groups	11.0	4	2.8	4.3	0.002
	1000-2999	64	3.4	0.7	Within Groups	134.4	211	0.6		
	3000-4999	55	3.4	0.7	Total	145.4	215			
	5000-6999	8	3.7	0.5						
	7000 and more	43	2.9	0.4						
Facilities and work conditions	Less than 1000	46	3.6	0.4	Between Groups	0.7	4	0.2	1.5	0.208
	1000-2999	64	3.6	0.3	Within Groups	24.4	211	0.1		
	3000-4999	55	3.5	0.3	Total	25.1	215			
	5000-6999	8	3.7	0.4						
	7000 and more	43	3.5	0.4						
Management system	Less than 1000	46	2.7	0.5	Between Groups	7.4	4	1.9	7.5	0.000
	1000-2999	64	2.8	0.5	Within Groups	52.6	211	0.2		
	3000-4999	55	2.9	0.5	Total	60.0	215			
	5000-6999	8	3.0	0.6						
	7000 and more	43	3.2	0.5						
Overall perception	Less than 1000	46	3.3	0.4	Between Groups	3.2	4	0.8	7.3	0.000
	1000-2999	64	3.3	0.3	Within Groups	22.9	211	0.1		
	3000-4999	55	3.4	0.3	Total	26.1	215			
	5000-6999	8	3.6	0.3						
	7000 and more	43	3.1	0.3						

*Mean = 5237.3, MD= 2752, SD=6521.7

Table 5.24 illustrates that the overall perceptions of all subjects of the different categories tended to be positive towards all domains with a significant difference between them (p value=0.001). Those with prescription volume of 7000 and more tended to have the least positive perception and those subjects represented the UNRWA centers.

Efforts should be done to improve the perceptions towards the management system especially in the governmental centers. Additionally, the management in UNRWA should work seriously to improve their employees perceptions towards their workload by employing adequate number of employees to handle the high volume of prescriptions dispensed at their centers and to ensure the effectiveness of performance.

Chapter 6: Conclusion and Recommendations

Conclusion

This study aims to assess the status of workload among pharmacists and pharmacists' technicians in the primary health care centers which are operated by MOH and UNRWA in Gaza Governorates. It highlights the pharmacists and technicians workload in order to make recommendations for decision makers in order to ensure the availability of at least a reasonable workload for pharmacists and technicians.

This study is a descriptive analytical cross sectional one. All pharmacists and pharmacists' technicians who were working in the five governorates at the time of data collection were included. The main instrument was a structured questionnaire which was filled by the researcher and her trained assistants through face to face interviews. Additionally, records reviews related to the number of prescriptions dispensed daily was conducted.

Pharmacists and technicians had an overall relatively positive perceptions about workload with overall scores of 66%. Management system domain scored lower (2.9/5). The domain of work hours scored the highest (3.8/5) followed by facilities and work conditions domain and staff and relations consequently.

Gender seemed to have no statistical significant impact on the perceptions of workload since both females and males perceive it almost in the same way. But there was a statistical significant difference between them regarding the work hours domain. Regarding the age, that there were no differences in the different age categories in their

perceptions towards workload. The income affected workload domains and those of high income had lower scores.

Both pharmacists and technicians had equal perceptions towards the workload domains. The differences among them just appeared in their perceptions towards the domain of work hours where technicians perceived it in a less positive way. This is due to the fact that technicians suffer much more from workload in the UNRWA centers. They faced high prescriptions volume and the staff was not adequate enough as they reported. The technicians also suffered in the governmental centers and they were engaged in dispensing process more than pharmacists in some centers. The management should take this into consideration.

Years of experience did not affect the perception except in the perception towards the work hours domain. All respondents with different personal profiles perceived the system domain to be acceptable and those of younger ages perceived it in a lesser degree than those above 40 years. Those of ages less than 40 years old expect much more from their systems otherwise they tend to burnout. Thus, we should work to improve their perceptions toward their system if we are concerned in retaining them.

Regarding the organizational factors, there was a difference among the different governorates in the overall perceptions of the study population towards the workload domains. Mid Zone and Rafah ranked the least in their positive perceptions. The respondents of Mid Zone suffered more from excessive work hours compared to others because most of the respondents who worked in the governmental centers either worked alone with no colleagues or did not have adequate number of employees and this problem

need to be addressed. Those in Rafah suffered more than other governorates regarding the management system.

It is concluded that those in UNRWA who represented 19.9% had less mean scores in their overall perceptions towards the workload domain especially in the domain of work hours. This is due to the fact that the prescription volume and the volume of other activities in the centers that followed UNRWA are so high compared to the time available and thus they suffered from excessive work hours. The management in UNRWA should work to address this issue which have negative impacts on the employees themselves and on the quality of the health services as a whole.

Pharmacists and technicians who received relevant training courses perceived their workload domains in general better than those who did not receive training. Those who didn't have training represented 44% and it is of a higher percentage and such problem appeared mostly in the UNRWA centers, where they didn't receive training courses in general.

Of the respondents, 78.2% reported not having job descriptions and they were working in the MOH centers. But such issue had no impact on the overall perceptions towards the workload domains. Those who worked alone had less positive perceptions than others and this is due mainly to the fact that they were used to do everything without the assistance of others and even if the work is not heavy they felt lonely without being with other colleagues which finally may affect their perceptions.

It is concluded that the respondents in the UNRWA centers reported higher prescriptions volume and reported not having adequate staff more than those in the MOH centers and this issue needs to be addressed.

Generally, the perceptions of workload domains had a strong relations with the general perception of workload level since those respondents with more positive perceptions towards the domains perceived their workload level better and vice versa .

Additionally, regarding the pharmacy related factors, it is concluded that the resources and equipment in both sectors were not satisfactory. Also, the performance of the pharmacists and technicians was not effective although they tended to perceive it as a good one. They reported not doing effective counseling or adequate labeling, and this has bad impact on the patients' health.

Finally, 86% of the respondents perceived their work environment to be stressful and about half of them tended to leave their work if they had the choice.

Recommendations

1- Efforts should be done in order to improve the perceptions towards the workload among pharmacists and pharmacists' technicians. The study illustrated a framework that could be used by the decision makers and managers in order to enhance the development of appropriate workload.

2- Work hours domain need to be evaluated and restructured and staff and relations domain should be reconsidered according to the appropriate standards especially in the UNRWA sector.

3- Management system domain should be given more attention by:

A-Developing/Revising job descriptions for pharmacists and pharmacists' technicians.

B-Encouraging effective supervision in terms of continuous monitoring and evaluating for the performance of the employees to ensure they practice well especially in doing adequate labeling for drugs and effective counseling for patients.

C-Doing training needs assessment and make sure that all employees will get the opportunity to be developed since some employees reported not getting relevant training courses in their organizations especially those who were working in UNRWA centers.

D-Working on motivation of employees after considering their expectations to enhance their perceptions and retaining them .

4- The study provided valuable information about the differences in workload perceptions in reference to demographic characters and this could be used by management and decision makers. For instance, more attention should be paid for females, younger employees and certain governorates.

5- Provision of essential resources and equipment to enable the pharmacists and technicians to perform within appropriate work conditions.

6- Re-evaluation for the current deployment of pharmacists and technicians in all centers especially in the governmental centers to ensure that each center and each shift has the appropriate number of employees.

Further research:

Research on workload status later on to monitor the change in perceptions.

More objective studies needed.

Conducting national research on workload among pharmacists and technicians and other professions.

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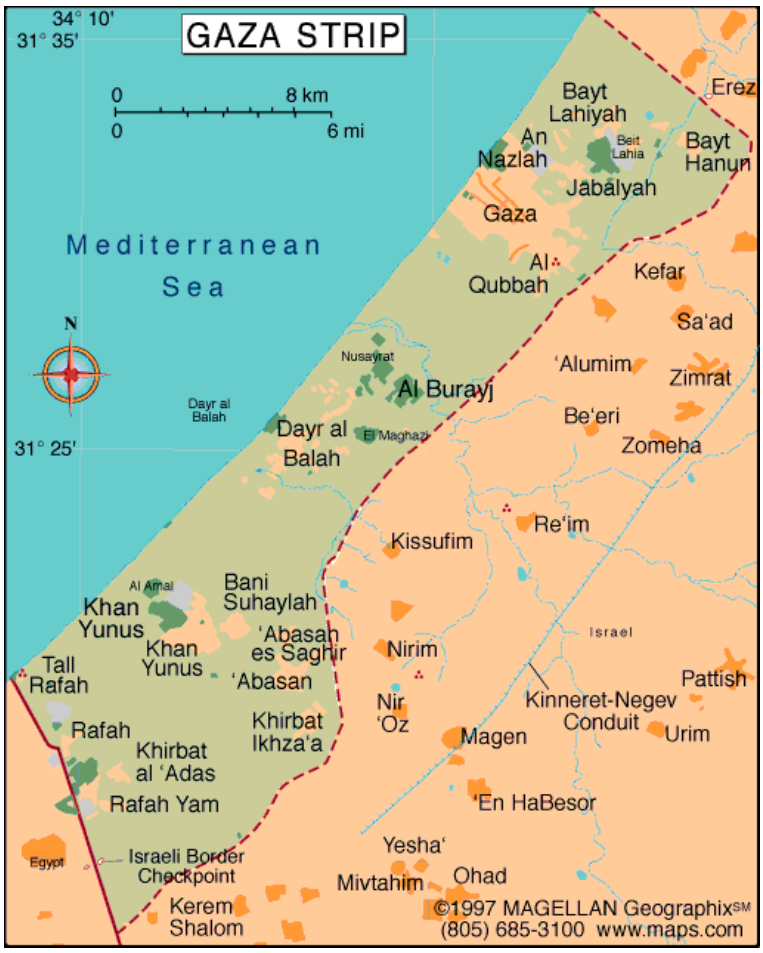
Annex 1

Map of Palestine

Annex 2

Map of Gaza Strip



Annex 3

Annex 4

Annex 5

Questionnaire explanatory letter

Research title: Workload Status in Primary Health Care Pharmacies-Gaza Governorates

Hello, my name is May Afifi. I'm a student in the master program of public health at Al Quds University-Palestine.

I am conducting my research as a part of my study at the university. The study aims to study the workload status in the Primary Health Care Centers' Pharmacies in Gaza City. This study will assess the status of the workload that pharmacists and technicians are experienced at their work regarding their perceptions, in order to provide a set of recommendations that possibly improve their perceptions about work load and its subsequent effects on performance and personal life.

The questionnaire takes 30-40 minutes. Your participation is voluntary and you have the right to withdraw at any time. Confidentiality will be provided for you, so don't worry.

There is no right or wrong answers.

I appreciate very much your participation in this study.

Annex 6

Workload Status in Primary Health Care

Pharmacies Questionnaire

Questionnaire No	----------	*Date*	----------	
Name of organization	----------		*Organization location*	----------
Shift 1-morning 2-evening	……..			

Socio-demographic Section

1-Gender	a-Male	b-Female	
2-Age in years …….			
3-Marital status	a-Single	b-Married	c-Others, specify…….
4-No. of household members …….			
5-Place of residency (address) ……			
6-Job title	a-Pharmacist	b-Pharmacist Technician	
7-Income in NIS …… Did not answer (tick) ----------			
8-Total number of years studied in pharmacy field (all relevant studies) ……			
9-Place of graduation (in pharmacy field) ……			
10-Last qualifications obtained ……			
11-Total years of experience in pharmacy field ……			
12-Years of experience in this place ……			
13-Did you work in other organizations before?	a-Yes	b-No	
If yes, indicate the name of the organization			
14-Have you ever received training courses (on pharmacy related issues including management) after graduation?	a- Yes	b-No skip to Q15	

If yes, specify

No.	Type of training	Duration	Period	Organizer 1-self 2-organization
1				
2				
3				
4				
5				

15-How you Perceive your health status?

a- Good ☐ b-Neither good nor bad ☐ c-Bad ☐

16-Do you complain from chronic diseases or disabilities?

a-Yes ☐ b-No ☐

If yes,

Diabetes Mellitus ☐ Stomach ulcers ☐ Cancer ☐

Hypertension ☐ Back pain ☐

Others, specify…….

Organizational factors

17-Size of population served by your organization ……DK-------				
18-Total no of employees in your organization ……DK……..				
19-Number of employees in your shift……				
Number of pharmacists ……	**Number of pharmacists' technicians……**			
20-Number of formal hours worked daily……				
21-Do you work extra hours in this organization?	a. Yes *If yes, how in average your weekly hrs----* **,** paid not paid			b. No
22-Do you have others jobs in other organizations?	a. Yes *If yes number of hrs weekly ----*			
23-Do you have a written job description in this organization?				
a-Yes skip to Q 24	b-No	c- DK		
If no, is there a need for job description?				
a-Yes	b-No	c- DK		
24-Does the system of the organization permit having breaks during working hrs ?				
a-Yes	b-No	c-DK		
25-Is there a responsible pharmacist in the pharmacy?				
a-Yes (one)	b. More than one	c- DK	d. No	
26-Do you have a supervisor (an external supervisor)?				
a-Yes	b-No	c. DK		
27-The responsible pharmacist is qualified enough to manage the work.				
a-Disagree	b-Uncertain	c-Agree		
28-The external supervisor is qualified enough to manage the work?				
a-Disagree	b-Uncertain	c-Agree		
29-You describe your relationship with the manager (external supervisor) as.				
a-Very bad	b-Bad	c-Normal	d-Good	e-Very good
30-According to your perception, is there enough space in your pharmacy?				
a-Yes	b-No			
31-Had you experienced shortage of drugs through this year 2007?				
a-Yes	b-No			
If yes, how often				
a-Always	b-Often	c-Sometimes		
32-The work inside your pharmacy is designed as.				
a-Rotation mostly in all activities.	b-Fixed activities assigned to everyone all the time mostly.	c-Randomly		

33-Which of the things listed below are available in the pharmacy

Item	Available 1-Yes, 2-No	Adequate 1-Yes, 2-No	Functional 1-Satisfactory, 2-Unsatisfactory
Chairs			
Disks			
Shelves			
Windows			
Refrigerator			
Air conditioning			
Fans			
Warmer			
Telephone			
Computer			
Registers			
Stationary			
Medicine bags			
Information sources(PNF)			

Domains of work load

A-Work hours

34-Your daily working hours are adequate enough for doing your activities.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
35-You have been forced to stay at work after the official hours to accomplish your duties.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
36-You have been forced to take work at home				
a-Never	b-Seldom	c-Sometimes	d-Often	e-Always
37-You get enough breaks in your work				
a-Never	b-Seldom	c-Sometimes	d-Often	e-Always
38-It is difficult to manage your time at work.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree

B-Staffing and relations

39-Your pharmacy has adequate no of employees.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
40-The way the work designed inside the pharmacy is good.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
41-The work is divided fairly between the colleagues.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
42-You describe your relationship with your manager(responsible pharmacist) as:				
a-Very bad	b-Bad	c- Neither good nor bad	d-Good	e-Very good
43-Your relationships with your colleagues are described as:				
a-Very bad	b-Bad	c-Neither good nor bad	d-Good	e-Very good
44-There is cooperation between the colleagues inside the pharmacy.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree

C-Prescriptions volume

45-The volume of prescriptions you dispense daily is perceived as.(if you dispense)				
a-Very high	b-High	c- Normal	d- Low	e-Very low
Please indicate the average number of prescriptions you dispense daily, first10days……..,second10days…….. third10days…….				
46-You do labeling for the drugs you dispense.				
a- Never	b-Seldom	c-Sometimes	d-Often	e- Always
47-When doing the labeling, what do you write(non prompted)				
a-Drug name	b-Dosage	c-Expiry date	d-Mode of use	e-Others
48-You perform counseling for your clients				
a- Never	b-Seldom	c-Sometimes	d-Often	e- Always
Please indicate the average time you spent with each patient in minutes …….				
49-You are engaged in other activities beside dispensing in the same day.				
a- Never	b-Seldom	c-Sometimes	d-Often	e- Always
50-The volume of fixed activities assigned to you most of the time is perceived as.(not dispense)				
a-Very high	b-High	c- Normal	d- Low	e-Very low
Please indicate these fixed activities:……				

D-Facilities and work conditions

51-It is important to have computer in your work as a work facilitator.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
52-You have adequate illumination at your pharmacy.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
53-Adequate illumination prevents errors when performing your duties.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
54-There are frequent interruptions and distractions when performing your duties.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
55-If you suffer, is it because: ?(non prompted)				
a- Visitors from outside	b- Reviewees' interruptions		c- Visitors from inside (doctors, nurses,..etc)	
d- Colleagues talk show	e- Telephone calls		f- Clash between colleagues	
g- Quarrels outside	h- Loud noises		q-Others specify,…….	
56-Interruptions and distractions could affect the accomplishment of your activities.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree

E-System's role

57-Which of the things listed below your manager perform through his supervision role?				
A-Regularly provides ongoing guidance to the employees (act as a counselor).				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
B-Performs on the job training.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
C-Provides ongoing feedback about the employees' performance.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
D-Provides support for employees offload and manage the intensive nature of the work.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
E-Ensures that the employee has adequate facilities.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
F-Often represents the employee's requests to management.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
58-The work system offers you enough motivations.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
59-You are satisfied with your job. In general				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree

General

60-You describe your workload level in general as.				
a-Very high	b-High	c- Normal	d- Low	e-Very low
61-You describe the incidence of medication errors as.				
a-Always	d-Often	c-Sometimes	d-Seldom	e- Never
62-You perceive your performance within such workload as.				
a-Very bad	b-Bad	c-Normal	d-Good	e-Very good
63-You describe your feeling towards such performance as.				
a-Very dissatisfied	b-Dissatisfied	c-Uncertain	d-Satisfied	e-Very satisfied
64-You perceive your work environment as a whole as.				
a-Very stressful	b-stressful	c-Uncertain	d-Comfortable	e-Very comfortable
65-If it is stressful, is it due to:				
a-Bad relations with your colleagues			b-Bad relations with your manager	
c-No motivations		d-Bad facilities		e-Clients disturbances
f-High prescription volume			g-Stressful events from outside(political, economic, and social problems)	
66-You are forced to get up early every day to go to your work.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
67-Your work has a negative impact on your personal life.				
a-Strongly disagree	b-Disagree	c-Neither agree nor disagree	d-Agree	e-Strongly agree
68-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 and search for better working conditions and peace settlement outside				
d. Others specify----------				

69-What are the main causes of high workload at your pharmacy/organization ?

……

……

……

70-If you are in a position to reduce such workload, what you will do ?

……

……

……

Write down any additional comments

……

……

Thank you for your participation

Annex 7

Distribution of main stressful factors regarding the work climate by study population

Stressful factors	Yes		No		Total	
	N	%	N	%	N	%
Bad relations with your colleague	5	2.7	181	97.3	186	100.0
Bad relations with your manager	20	10.8	166	89.2	186	100.0
No motivation	126	67.7	60	32.3	186	100.0
Bad facilities	115	61.8	71	38.2	186	100.0
Clients disturbance	73	39.2	113	60.8	186	100.0
High prescription volume	56	30.1	130	69.9	186	100.0
Stressful events from outside	98	52.7	88	47.3	186	100.0

Annex 8

Distribution of main causes of interruptions and distractions in pharmacy by study population

Causes	Yes		No		Total	
	N	%	N	%	N	%
Visitors of side	62	34.1	120	65.9	182	100.0
Reviewers interruption	126	69.2	56	30.8	182	100.0
Visitors from inside	105	57.7	77	42.3	182	100.0
Colleagues talk show	40	22.0	142	78.0	182	100.0
Tel call	41	22.5	141	77.5	182	100.0
Clash between colleague	19	10.4	163	89.6	182	100.0
Quarrels outside	37	20.3	145	79.7	182	100.0
loud noise	69	37.9	113	62.1	182	100.0

Annex 9

Differences in workload domains by age

Dependent variable "workload domain"	Independent variable "age"	N	Mean	SD		Sum of Squares	df	Mean Square	F	Sig
Work hours	30yrs and less	37	3.9	0.5	Between Groups	3.1	2	1.6	2.967	0.05
	31 to 40 yrs	110	3.8	0.7	Within Groups	112.3	213	0.5		
	More than 40 Yrs	69	3.6	0.9	Total	115.4	215			
Staff and relations	30yrs and less	37	3.4	0.7	Between Groups	1.2	2	0.6	0.886	0.414
	31 to 40 yrs	110	3.2	0.9	Within Groups	144.2	213	0.7		
	More than 40 Yrs	69	3.2	0.8	Total	145.4	215			
Facilities and work conditions	30yrs and less	37	3.5	0.3	Between Groups	0.3	2	0.1	1.282	0.280
	31 to 40 yrs	110	3.6	0.4	Within Groups	24.8	213	0.1		
	than 40 Yrs	69	3.6	0.3	Total	25.1	215			
Management system	30yrs and less	37	2.8	0.5	Between Groups	0.1	2	0.0	0.166	0.848
	31 to 40 yrs	110	2.9	0.5	Within Groups	60.0	213	0.3		
	More than 40 Yrs	69	2.9	0.5	Total	60.0	215			
Overall perception	30yrs and less	37	3.3	0.4	Between Groups	0.3	2	0.1	1.140	0.322
	31 to 40 yrs	110	3.3	0.3	Within Groups	25.8	213	0.1		
	More than 40 Yrs	69	3.2	0.4	Total	26.1	215			

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Annex 10

Differences in workload domains by marital status

Dependent variable "workload domain"	Independent variable "marital status"	N	Mean	SD		Sum of Squares	df	Mean Square	F	Sig
Work hours	Single	11	3.7	0.7	Between Groups	0.1	2	0.1	0.132	0.877
	Married	201	3.8	0.7	Within Groups	115.2	213	0.5		
	Other	4	3.9	0.6	Total	115.4	215			
Staff and relations	Single	11	3.5	0.6	Between Groups	2.6	2	1.3	1.974	0.141
	Married	201	3.2	0.8	Within Groups	142.8	213	0.7		
	Other	4	3.9	0.4	Total	145.4	215			
Facilities and work conditions	Single	11	3.6	0.2	Between Groups	0.0	2	0.0	0.063	0.939
	Married	201	3.6	0.4	Within Groups	25.1	213	0.1		
	Other	4	3.6	0.2	Total	25.1	215			
Management system	Single	11	2.7	0.6	Between Groups	0.7	2	0.3	1.185	0.308
	Married	201	2.9	0.5	Within Groups	59.4	213	0.3		
	Other	4	3.2	0.3	Total	60.0	215			
Overall perception	Single	11	3.3	0.3	Between Groups	0.3	2	0.2	1.425	0.243
	Married	201	3.3	0.4	Within Groups	25.8	213	0.1		
	Other	4	3.6	0.2	Total	26.1	215			

Annex 11

Distribution of study population by perceptions of having adequate number of employees and working sector

	Disagree		Neither agree nor disagree		Agree		Total		X^2	Sig
Responsibility	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**		
Government	51	29.5	2	1.2	120	69.3	173	100.0	38.875	0.001
UNRWA	35	81.4	0	0.0	8	18.6	43	100.0		
Total	86	39.8	2	0.9	128	59.3	216	100.0		