

Deanship of Graduate Studies
Al-Quds University



**Workplace Safety Hazards at Paltel Company
in Gaza Governorates**

Wafaa Ahmad Hassonah

MPH Thesis

Jerusalem- Palestine

1439 / 2018

Workplace Safety Hazards at Paltel Company in Gaza Governorates

Prepared By

Wafaa Ahmad Hassonah

Bachelor of Chemistry- Qaryounis University
Bingazy- Libya

Supervisor: Dr. Ashraf El-Jedi

A Thesis Submitted in Partial Fulfillment of Requirements
for the Degree of Master of Public Health
Health management
Al- QudsUniversity

1439 / 2018

Al-Quds University
Deanship of Graduate Studies
School of Public Health



Thesis Approval

Workplace Safety Hazards at Paltel Company in Gaza Governorates

Prepared By: Wafaa Ahmad Hassonah
Registration No.: 21511500

Supervisor: Dr. Ashraf El-Jedi

Master thesis submitted and accepted. Date: / /

The names of signatures of the examining committee members are as follows:

1. Head of committee: Dr. Ashraf El-Jedi
2. Internal examiner: Dr. Yehia Abed
3. External examiner: Dr. Khalid Qahman

Signature.....*Ashraf El-Jedi*.....

Signature.....*Yehia Abed*.....

Signature.....*Khalid Qahman*.....

Jerusalem – Palestine

1439 / 2018

بسم الله الرحمن الرحيم

قال تعالى:

"وقل ربي زدني علما"

(طه: من الآية 114)

قال تعالى:

"يرفع الله الَّذِينَ آمَنُوا مِنكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ "

(المجادلة: من ال آية 11)

قال تعالى:

"قُلْ هَلْ يَسْتَوِي الَّذِينَ يَعْلَمُونَ وَالَّذِينَ لَا يَعْلَمُونَ إِنَّمَا يَتَذَكَّرُ أُولُو الْأَلْبَابِ"

(الزمر: من الآية 9)

Dedication

To who came with me towards the dream .. Step by step

We sowtogether..... harvested ... together

We will stay together in ShaaAllah

To my dear husband with my love

*To the spring of tenderness, who was always praying to see me in
this place*

To my beloved mother.

To the spirit of my father, who has had the first footprint in my life.

To my brothers and sisters, my heart and their families.

To my brother Abu Arafat and his family.

*To all who helped me to complete this research and gave me help
and extended a hand to help and provided me with the information
necessary to complete this research.*

Patel Company.

Al – Quds University.

WafaaAhmad Hassonah

Declaration

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

Signed:

WafaaAhamdHassonah

15/5/2018

Acknowledgment

I would like to express my great thanks and gratitude to all people who contributed to the success of this endeavor toward the master degree. Without their support, this work would not have been possible.

My high appreciation and recognition to *Dr. Ashraf El- Jedi*, my academic supervisor for his insightful supervision and patience.

Also I would like to extend my warm gratitude for *Dr. Bassam Abu Hamad*, *Dr. khitam Abu Hamad* and *Dr. Yehia Abed* for their guidance and kind support in reviewing the study instrument.

My deep thanks must also go to Paltel Company and my colleagues at work for their co-operation.

Finally, heart-felt thanks are due to my husband for his love and support.

Abstract

Background: Paltel is the major Telecommunications Company in Palestine. Considering its staff as the most valuable asset, Paltel is committed to maintain the health and safety of all staff. A safe and healthy workplace does not only protect employees from injury and illness, it can also lower injury/illness costs, reduce absenteeism and turnover, increase productivity and quality, and raise employee morale.

Aim: To assess work safety hazards at Paltel Company in Gaza Governorates (GG) in order to enhance safety practices and to prevent hazards among the employees for Paltel Company.

Methods: The design of the study is cross sectional descriptive analytical one. Data was collected through a self-designed questionnaire from all branch center's these branch centers are five: In the North of Gaza (Jabali center), Gaza center (Region). Middle Gaza (Al-Nusairate center), Khan Yunis center, and Rafah. Filled by two hundred and six employees of Paltel Company. The response rate was 86%.

Results: Noise, rest place and work pressure were the most prominent topics regarding the physical work environment with 80.6% complaining of noise at work place of as 91.6% were affected by it. 64.7% stating that resting place is unhealthy. About 94.8% chose work pressure as the main reason for work-related disorders. For organizations hazards, safety and prevention procedures were mainly represented in the form of instructions. With 62.6% of employees stating that it was not apparent in all sites, yet in case of endemics, 85.9% received an awareness leaflet concerning the disease. Concerning personal hazards, 59.2% of smokers did not consider the prevention and safety procedures during smoking. Only 15% of the participants practiced sports, and 14% of employees with chronic diseases had high blood pressure. Most employees did not have enough information concerning professional and health safety services, work risks or the preventive measures of such risks. This was because of lack of training at first aid, fire extinguisher and the use of personal prevention equipment. Regarding office workers, around 60% did not apply correct practices for sitting on chairs, using the mouse and vision directions distance from the computer screen. Results indicated that 73.8% of employees suffer from symptoms due to work; back pains were the most widespread complaint followed by head and neck then shoulders. 67.5% had vision problems. Around 53.4% of employees had sleeping disorders because of work pressure. 64 of employees had injured at work, only 18.8% received first aid immediately, 46.9% had special treatment and 34.4% had not any treatments. Finally, inferential analysis showed working environment and personal hazards had the highest impact on employees followed by information about work hazards then other factors related to company.

Conclusion: Finally, working environment and personal behavior and practicing had the highest affected for workplace at Paltel Company.

ملخص الدراسة:

شركة الاتصالات الفلسطينية (بالتل) من أكبر الشركات في فلسطين، حيث تعتبر موظفيها هم رأس مالها الحقيقي ولذلك توفر لهم بيئة عمل صحية وذلك من أجل المحافظة على صحة وسلامة موظفيها مما ينعكس إيجابياً على جودة الانتاجية في العمل وتقليل تكلفة التأمين الصحي والتغيب عن العمل.

تهدف هذه الدراسة لتحقيق الأهداف التالية:

تقييم الأمان والمخاطر الصحية لشركة بالتل في محافظات غزة وذلك بتعزيز الممارسات الآمنة صحياً وتقليل الممارسات الخاطئة صحياً في بيئة العمل من أجل تقليل تكلفة التأمين الصحي على شركة بالتل.

منهجية الدراسة:

لقد استخدمت الدراسة الوصفية لتحديد امان ومخاطر بيئة العمل في بالتل والممارسات الغير صحية من قبل موظفي بالتل اضافة الى الاعراض المرضية الاكثر شيوعاً بين موظفيها. تم جمع البيانات باستخدام الاستبانة العلمية وكان اجمالي العدد 206 استبانة من فروع تابعه لشركة بالتل وكانت نسبة الاستجابة 86%.

نتائج الدراسة:

تمت دراسة مخاطر السلامة في مكان العمل من ثلاثة جوانب رئيسية، بيئة العمل، عوامل تتعلق ببالتل، والمخاطر الشخصية وتأثيراتها على موظفي بالتل في المكاتب وخارج المكاتب على السواء. كانت الضوضاء والراحة والضغط على العمل من أهم الموضوعات التي تتعلق ببيئة العمل حيث بلغت نسبة الشكوى من الضوضاء في مكان العمل 80.6% منها 91.6% تأثرت به. 64.7% تفيد بأن مكان الراحة غير صحي. والغالبية من 94.8% اختارت ضغط العمل كسبب رئيسي (مهام العمل المطلوبة هي أكثر من قدرة الموظفين على الطاقة). وفيما يتعلق بالمخاطر التي تتعلق ببالتل، اغلب إجراءات السلامة والوقاية كانت على شكل تعليمات. من بينهم 62.6% من الموظفين يقولون إنه ليس واضحاً في جميع المواقع، ولكن في حالة انتشار الأوبئة المعدية 85.9% يتم اعطائهم نشرات توعية بشأن المرض. وفيما يتعلق بالمخاطر الشخصية، فإن 59.2% من المدخنين لا يأخذون في الاعتبار إجراءات الوقاية والسلامة أثناء التدخين. فقط 15% يمارسون الرياضة، و52.7% من 26.7% من الموظفين الذين يعانون من أمراض مزمنة وارتفاع ضغط الدم. ولكن الأهم من ذلك أن معظم الموظفين ليس لديهم معلومات كافية عن خدمات السلامة المهنية والصحة، ومخاطر العمل ولا إجراءات الوقاية من مثل هذه المخاطر. هذا بسبب عدم وجود التدريب في الإسعافات الأولية، طفاية حريق واستخدام معدات الوقاية الشخصية. وفيما يتعلق العاملين في المكاتب حوالي 60% لا تطبق الممارسات الصحيحة للجلوس على كرسي، وذلك باستخدام الماوس والرؤية الاتجاهات المسافة من شاشة الكمبيوتر. وخلصت النتائج إلى أن 73.8% من

العاملين يعانون من أعراض بسبب العمل، وآلام الظهر كانت أعلى شكوى تليها الرأس والرقبة ثم الكتفين. 67.5% لديهم مشاكل في الرؤية. وكان حوالي 70% من الموظفين اضطرابات النوم بعد وقت العمل بسبب ضغط العمل. وعندما يتعلق الأمر بالإصابات في مكان العمل، فإن 18.8% فقط تلقوا الإسعافات الأولية فوراً. وأخيراً، يظهر التحليل الاستدلالي بيئة العمل ومخاطر السلوك الشخصي كأعلى تأثير على الموظفين تليها معلومات عن مخاطر العمل ثم عوامل أخرى تتعلق بالشركة.

التوصيات:

عمل برامج لمتابعة إجراءات السلامة والصحة.

تنفيذ دورات وبرامج تدريبية مستمرة للموظفين من أجل إجراءات السلامة والصحة في العمل.

وضع توصيات ارشادية لموظفي بالتل عن إجراءات الصحة والسلامة في العمل.

تدريب مشرفين مختصين لمتابعة تطبيق إجراءات السلامة والصحة المهنية.

تعزيز ثقافة الصحة والسلامة بين موظفي بالتل.

تشجيع الموظفين على ممارسة الرياضة.

توصيات مستقبلية أخرى:

دراسات مستقبلية لمقارنة نتائج دراستي مع بحث الآخر بعد تنفيذ توصيات دراستي.

أسباب وفوارق الإجازات المرضية بين موظفي شركة الاتصالات.

Table of Contents

Dedication.....	i
Declaration.....	ii
Acknowledgment.....	iii
Abstract.....	iv
Table of Contents	v
List of Tables	viii
List of Graphs	ix
Annexes	x
List of Abbreviations	xi
Chapter 1: Introduction	1
1.1Background	1
1.2Research Problem	2
1.3Justification	2
1.4Study Aims	4
1.4.1The overall Aim	4
1.4.2Specific Objectives.....	4
1.5Context of the Study	4
1.5.1Gaza Governorates Demographic Characteristics	4
1.5.2Paltel	5
1.6Operational Definition	6
1.6.1Safety and Healthy Workplace	6
1.6.2Ergonomics	6
1.6.3Safety Hazards Workplace	6
1.6.4Organizations Hazards	6
1.6.5Personal Hazards	7
1.6.6Physical Hazards	7
Chapter 2: Literature Review and Conceptual Framework.....	8
2.1Conceptual Framework	8
2.2Nature of Workplace	11
2.3Office Workers,Sedentary Behavior and Physical Activity during	11
2.4Ergonomically Risks	12
2.5Ergonomics and Occupational Safety and Health	13

2.6	Neck and Upper Extremity Symptoms	14
2.7	Costs of Work-Related Musculoskeletal Disorders	15
2.8	Costs of Occupational Injuries and Illnesses	16
2.9	Effects of Occupational Health and Safety Practices	17
2.10	Safety behavior, Performance and Awareness in Company	18
2.11	Safety Culture among Employers and Employees	19
2.12	Association between Sitting and Occupational Low Back Pain (LBP)	20
2.13	The Association of Social Support and MSDs	20
2.14	Working and Health Conditions in Workplace	21
2.15	Knowledge and Practice	22
2.16	Cost Benefits of Ergonomic Intervention	22
2.17	Organization Hazards in Workplace	23
2.18	Specific Guidelines	23
2.19	Ventilation	24
2.20	Workplace Force, Productivity and Presenteeism among Workers.	24
2.21	Noise at Workplaces	25
2.22	Employee and Participation in Physical Activity	25
2.23	OSHA Regulation Regarding PPE	26
2.24	First Aid in Workplace	26
Chapter 3:Methodology		28
3.1	Study Design	28
3.2	Study Setting	28
3.3	Study Period	28
3.4	Study Population	28
3.5	Study Sample	29
3.6	Eligibility Criteria	30
3.7	Study Tools	30
3.8	Reliability of the research	32
3.9	Validity	32
3.10	Pilot Study	33
3.11	Data Collection	33
3.12	Data Entry and Analysis	33
3.12	Response rate	34

3.13	Ethical Considerations	34
3.14	limitations of the Study	35
Chapter 4: Results and Discussion		36
	Introduction	36
4.1	Socio-Demographic Characteristics of the Participants	36
4.2	Type of Safety Hazards	39
4.2.1	Distribution of the safety hazards according to the physical work environment	39
4.2.2	Distribution of the safety hazards according to the organizational factors	44
4.2.3	Distribution of the of the safety hazards according to the personal behavior. ..	47
4.2.4	Prevalence rate of outcome among workers.	52
4.3	Relationship between demographic variables and study domains	55
4.3.1	Differences between domains of the study and age group of participants.	56
4.3.2	Differences between domains of the study and gender of participants	59
4.3.3	Differences between domains of the study and education of participants	60
4.3.4	Differences between domains of the study and department.....	63
4.3.5	Differences between domains of the study and type of work	64
4.3.6	Differences between domains of the study and years of experience of participants	66
Chapter 5: Conclusion and Recommendations		71
5.1	Conclusion....	71
5.2	Recommendations	74
5.3	Recommendation for further research	74
References		75
Appendices		81

List of Tables

No.	Title	Page
Table 3.1	Proportional representation	30
Table 4.1	Distribution of the study participants according to their demographic data	37
Table 4.2	Distribution of the study participants according to their Work Environment (physical hazards)	40
Table 4.3	Distribution of the safety hazards according to the organizational factors	44
Table 4.4	Distribution of the of the Safety Hazards according to the Personal behavior.	48
Table 4.5	Distribution of prevalence rate of outcome among workers	53
Table 4.6	Differences between domains of the study and age group of participants	56
Table 4.7	Differences between domains of the study and gender of participants	59
Table 4.8	Differences between domains of the study and education of participants	61
Table 4.9	Differences between domains of the study and department	63
Table 4.10	Differences between domains of the study and type of work	65
Table 4.11	Differences between domains of the study and years of experience of participants	67

List of Graphs

No.	Title	Page
Graph 2.1	Conceptual framework	10

Annexes

No.	Title	Page
Annex 1	Branches center at Patel Company in GG.	81
Annex 2	Study Activity Timetable.	82
Annex 3	Online sample size calculator.	83
Annex 4	Displays of accident statistics over time in the construction industry in Hong Kong from 1986 to 2013.	84
Annex 5	Annual prevalence of LBP found in studies in occupation	85
Annex 6	Helsinki Committee Approval.	86
Annex 7	Academic managerial and approval	87
Annex 8	Email for Accepted from managerial and approval	88
Annex 9	Explanatory Letter (Arabic copy)	89
Annex 10	Self –designed Questionnaire (Arabic Copy)	90
Annex 11	Explanatory Letter (English Copy)	97
Annex 12	Self –designed Questionnaire (English copy)	98
Annex 13	Names of experts	106
Annex 14	Arabic Abstract	107

List of Abbreviations

BLS	Bureau of Labour Statistics
CBA	Cost Benefit Analyses
GG	Gaza Governorate
GS	Gaza Strip
HITS	Hand Intensive Tasks and Safety
IAQ	Indoor air quality
ICT	Information and Communication Technology
ILO	International Labour Organization
LBP	Low Back Pain
MSDs	Musculoskeletal Disorders
MSS	Musculoskeletal Symptoms
OHS	Occupation health and safety
OHSMSs	Occupational Health and Safety Management Systems
Paltel	Palestinian Telecommunication Company
PCBS	Palestinian Central Bureau of Statistics
PLI	Postural Load Index
PPE	Personal Protective Equipment
RTIs	Repetitive Trauma Injuries
VDT	Video Display Terminal
WB	West Bank
WHO	World Health Organization
WMSDs	Work-Related Musculoskeletal Disorders

Chapter 1:Introduction

1.1 Background

Safety and well-being of workers are essential concerns to hundreds of millions of working people worldwide (WHO, 2010). Workplace safety addresses the wide range of workplace hazards from accident prevention to the more dangerous hazards including toxic fumes, dust, noise, heat, stress, ergonomics, etc.(WHO, 2002). The goal of workplace health and safety program is preventing work-related diseases and accidents, rather than attempting to solve problems after they have already developed (Landsbergis, 2003).

The safety of the workplace has become a main issue on the public health research agenda, as high employee productivity and low health care costs provide a competitive benefit for companies (Goldenhar et al., 2001). Therefore, companies have recently erased their focus to costs caused by decreased productivity due to health debits of employees. In Germany, presenteeism and absenteeism cost companies about 129 billion Euro in 2009, which was about 50% of the total expenditures of the companies on health (Schmid et al., 2017).

Safety workplace as a field is concerned to improve organizational quality and efficiency.Productivity also involves procedures that help employees by preventing them from being injured or becoming ill due to hazards in their workplace (Friend and Kohn, 2014).

Paltel is the major Telecommunications Company in Palestine.It has 1177 employees.The company considers its staff as the most valuable assets. Thus, the company is committed to maintaining the health and safety of all staff (Paltel, 2015). Most Paltel employees depend primarily on using computers, the number of users of computer continues to increase, occupational disease rises and it affected the performance.Treatment and cost of health

insurance, which incurred by Paltel Company, Work injuries and illnesses can affect every aspect of life for employees and their families.

For Paltel, a safe and healthy workplace not only protects employees from injury and illness, it can also lower injury/illness costs, reduce absenteeism and turnover, increase productivity and quality, and raise employee morale. Accordance to Friend and Kohn (2010) safety is good for companies, also strong safety and environmental programmers may actually mean survival .

1.2 Research Problem

The workplace is one of the most important settings affecting the physical, mental, economic and social well-being of workers, and in turn the health of their families, communities and society(Chu et al., 2000).

Work related disorders of employees have gained significant importance at PaltelCompany.Work-related accidents or diseases are very costly and can have many serious effects on the lives of employees and their families,and have many serious effectson Paltel Company as well.

This study attempts to assess safety hazards at Patel Company in order to enhance safety practices amongemployees at all levels and to reduce costs of health insurance and compensations required from Patel Company.

1.3 Justification

According to the World Health Organization (WHO, 2002) occupationalhealth is defined as a multidisciplinary activity that has gradually developed from a mono –disciplinary risk oriented to multi –disciplinary and widespread approach that reflectsthe individual's physical, mental, and social well- being, general health, and personal development.

Much research has focused on administrative side, but this study is the first to identify the factors of Work-related disorders in order to enhance safety practices among Paltel employees in order to influence positively the performance of Staff and production, which leads to reduce cost of health insurance and compensation.

Huang and Feuerstein (2004) stated that Work-related accidents or diseases are very costly and can have many serious direct and indirect effects on the lives of employees and their families and have much serious direct and indirect effect on the organization. The indirect costs of an accident or illness can be four to ten times greater than the direct costs, or even more (Oxenburgh and Marlow, 2005). Also Schmid et al. (2017) stated that an occupational illness or accident can have so many indirect costs to employees that they are often difficult to measure.

For employees at Paltel, some of the direct costs of an injury or illness are pain and suffering of the injury or illness, loss of income or possible loss of a job and health-care costs.

For Patel, some of the direct costs are payment for work not performed, medical and compensation payment increases training expenses and administration costs, possible reduction in the quality of work, and negative effect on morale in other workers.

Some of the indirect costs for Patel are injured/sick worker has to be replaced; new worker has to be trained and given time to adjust. Besides, poor health and safety conditions in the workplace can also result in poor public relations. The costs of workplace accidents or illnesses to Paltel are also estimated to be huge.

1.4 Study Aims

1.4.1 The overall Aim

To assess work safety hazards at Paltel Company in Gaza Governorates (GG) in order to enhance safety practices, prevent hazards among the employees.

1.4.2 Specific Objectives

- 1- To assess the physical work safety hazards among employees at Patel Company.
- 2- To identify organization work safety hazards among employees at Patel company
- 3- To assess the personal hazards among Patel employees.
- 4- To evaluate the knowledge and practices of the employees of Paltel in Gaza Strip regarding ergonomics.
- 5- To determine the prevalence rate of Work-related disorders.
- 6- To suggest recommendations for safety and health practices for employees at Patel Company.

1.5 Context of the Study

1.5.1 Gaza Governorates Demographic Characteristics

Palestine has an important geographic and strategic location. It is located at the southwestern part of Asia at the Eastern coast of the Mediterranean in the Middle East (Meir, 2016). The total area of Palestine is 27000 km²; West Bank (WB) constitutes 21.6% of the total Palestinian land, while Gaza Strip constitutes 1.35 % of the total Palestinian land. Gaza Governorates are a small piece of land located in the southern area of Palestine with 1,881,135 inhabitants. GS are a coastal area on the Mediterranean Sea, with a total

surface area of 365 km² (45km long). Gaza strip is divided into five governorates: Gaza City, North Gaza, Khan yonis, Rafah, and Mid Zone. In 2016,the number of population in Palestine (Gaza Strip, West Bank, East Jerusalem) was 4.88 million.More than one third of population lives in the GS, which is one of the most crowded places with population as more than2million live in the GG; its population density is about 5154 individual per km², with population growth of 3.37%. Percentage of refugees in the GS is 66.7% of population (PCBS, 2016).

1.5.2 Paltel

For more than 20 years, Paltel seeks to enrich the life of its customers with innovative communications and entertainment solutions to change tomorrow (Paltel, 2017).

Paltel has been consistently providing innovative, reliable, and high-quality fixed line and net services coupled with professional technical support and outstanding customer care (P. T. C. Paltel, 2017). Paltel offers a range of services to build and maintain a strong relationship with customers such as Internet and fixed line services, Business Internet services, and Data communications

Paltel aims at enriching the lives of its customers in GG and the West Bank.Paltelhas approximately 500.000 customers(P. T. C. Paltel, 2017). There are many branches in the West Bank and Gaza strip.The company has approximately1177 employees at the work place.In GG, there are 409 employees and 5 separate offices: the North of Gaza (Jabaliacentre), Gaza centre (Region), Middle Gaza (Al-Nusairatecentre),KhanYuniscentre and Rafah(Annex (1)(Paltel, 2015).

Paltelhas beenworking very hard to trainthecompany staff on all moderndevelopments in their field and upgrade behavioural competencies and skills they need to accomplish their

work. Therefore, it offers them many advantages, such as incentives, provident fund, social solidarity fund and health insurance for the employees and their families, and medical care fund in addition to the social Welfare Fund (Paltel, 2015).

1.6 Operational Definitions

1.6.1 Safety and Healthy Workplace

WHO defined a healthy workplace as a place where everyone works together to achieve an agreed upon vision for the health and well-being of workers and the surrounding community. It means systems, processes, structures, tools, and all those things, which interact with employees and affect positively or negatively the employees and the company (WHO, 2010).

1.6.2 Ergonomics

The study of the complex relationships between people, physical and psychological aspects of the work environment (e.g. facilities, equipment, tools), job demands and work methods (WHO, 2002).

1.6.3 Safety Hazards Workplace

Safety hazards are tangible factors in the work environment that may cause risks for possible injuries and accidents (Prussia et al., 2003). Hazardous work events are defined as particular working conditions encountered by employees in which there are occupational injuries.

1.6.4 Organizations Hazards

Organization of work and the organizational culture: are the attitudes, values, beliefs and practices that are demonstrated on a daily basis in the enterprise organization, and which affect the mental and physical well-being of employees. The hazards in organization are

related to poor work organization, organizational culture, command & control management style, inconsistent application and protection of basic worker rights, lack of support for work-life balance, lack of awareness of and competence in dealing with mental health/illness issues and fear of job loss related to mergers, acquisitions, reorganizations, or the labour market/economy(WHO, 2010).

1.6.5 Personal Hazards

Lack of awareness on the part of employees as they are not fully aware of their rights, have little knowledge of workstations and are not trained to prevent and control occupational hazards, which are likely to affect their health. In the absence of any formal education/orientation on ergonomics, employees are unaware of workplace, and that would be reflected on unfriendly family workplace.

1.6.6 Physical Hazards

They are workplace environment namely, use of tools and materials, poor lighting, noise, poorly designed chairs, office, workstation design and inappropriate seating.

Chapter 2: Conceptual Framework and Literature Review

In this chapter, this literature will focus on ergonomics from the perspective of the interaction between workers, technology, organization, and workplace, and the influence of these interactions to enhance workplace safety hazards among employees and employers.

2.1 Conceptual Framework

The conceptual framework is used to support, guide and direct the study in order to enhance safety practices, prevent hazards among the employees and reduce costs of health insurance and compensation for Paltel Company.

In this study, the conceptual framework (figure 2.1) explores the factors that could influence the workplace safety in Paltel Company. The core factors that cause hazards in workplace are physical hazards, organization hazards and Personal hazards.

Physical workplace exposures are related to job tasks, workplace environment, and use of tools and materials which probably affect workers in many different occupations and are strongly associated with injury risk (Cantley et al., 2014). Factors in computer handling should be considered, span of usage, duration of total work, number of considered consecutive hours, nature of job and type of computer used.

Working hours in Paltel Company are from 8 a.m. to 4:30 p.m. The employees spend at least third part of time in working. Employees can be exposed to physical hazards such as poor lighting, noise, poorly designed chairs, workstation design and improper seating; these hazards are associated with the non-application of ergonomic principles. Recognizing the contribution of these physical workplace exposures to inflict injury and Musculoskeletal Disorders (MSDs) risk is still an under-researched topic in Palestine. Ergonomic design is the science to design a workplace in terms of tasks of the employee making use of tools

and the environment (Shabbir et al., 2016) . A good ergonomic design not only increases the capabilities of workers by increasing efficiency and job satisfaction but also benefits the company by decreasing the cost for health and absence of workers due to health conditions.

The second factor is the personal hazards. Employees need to know about the proper posture and the need to take short breaks, which, if forgotten, ends up in multiple complications. Knowledge of ergonomics is required to discipline computer users to avoid the hazards in the workplace as risk factors can lead to the development of musculoskeletal symptoms (MSS) and MSD. Employees require some level of ergonomic knowledge and skills to identify and solve workplace problems. The absence of any formal education/orientation on ergonomics among employees can cause health problems.

The third factors are organization hazards. Any organizations are embedded within the economic, cultural and institutional context of a country, and these aspects can shape work design.

The effect on employees in work organizations is often not considered. Fundamental changes in the organization of work affect workers and their families. Besides, the absence of formal safety hierarchy can affect employees. The design of work, in organizations, consists of tasks, activities and responsibilities. Poor quality of the design in the work can affect work stress, job satisfaction, performance, absenteeism, accidents, team innovation and company financial revenue. Copies of technology of competitors reflect pressures outside the workers. The importance of employees' safety behavior contributes to the improvement of safety outcomes, as well as the importance of the proactive risk management and transformational leadership promotes safety behavior. These findings are particularly important for management since they provide evidence

about the factors that firms should encourage to reduce risks and improve safety performance.

The diagram denotes that the occurrence of work related disorders depends on many factors, which may affect employees themselves and employers as well. The main goals of an occupational ergonomics program is to create a safe work environment by designing facilities, furniture, machines, safety behaviors and tools. These facilities should be compatible with workers.

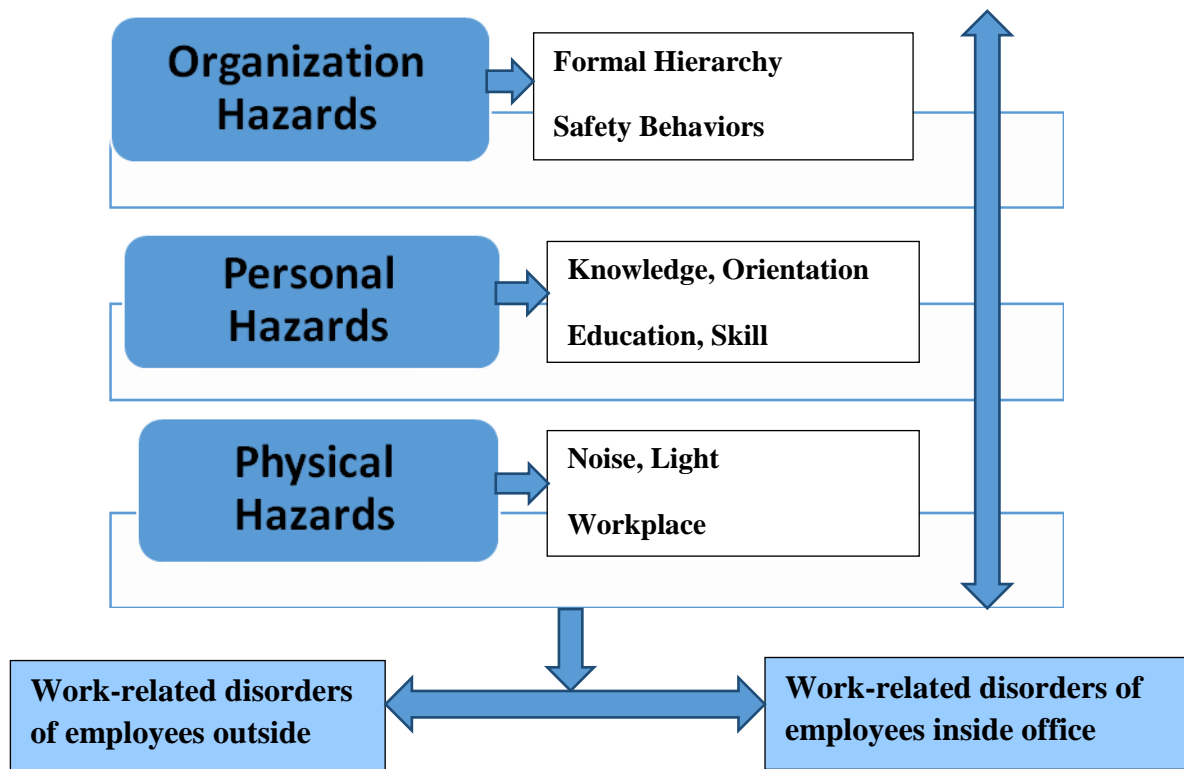


Figure 2.1: Conceptual framework

2.2 Nature of Workplace

Telecommunications, one of the largest occupations, work in varied places both indoors and outdoors, and in all kinds of weather. This work involves employees inside offices and employees outside offices (in the field) (Reese, 2008).

Primary Worldwide, millions of office workers use a computer (Ijmker et al., 2006). Also Sharma et al., (2006) stated computers have become an essence of modern life, being used in every aspect of life from calculating grocery bills to telecommunications, banking operations. We will find computer in any field. With use of Internet technology, distances carry little meaning and information is available anywhere in the world technology at modernization industry (Talwar et al., 2009). Computer technology has revolutionized the work place and the home environment.

Regarding employees outside offices, their working involves lifting, climbing, stooping, and crawling. They work in high places such as rooftops and telephone poles or below ground, and climb ladders (Reese, 2008).

Paltel, like other Telecommunications company in the world, had employees inside office and outside office, who pass at least one-third of their lifetime in the work.

2.3 Office Workers, Sedentary Behavior and Physical Activity during and outside Working hours

A convenience sample of 210 office workers were recruited by Clemes et al. (2014) in Loughborough University and local businesses within the East Midlands region of the UK. The sample as a whole spent a large proportion of time in sedentary behaviour on both workdays and non-workdays. Greater sitting time has been associated with increased risk of overweight, obesity, blood pressure, diabetes and the metabolic syndrome. All-cause

mortality and cardiovascular disease in the present study was observed. Those who are sedentary for a large proportion of their working hours also gather a high proportion of time in sedentary behavior during non-working hours. The latest studies emphasize the importance of workplace interventions, as they are urgently needed to reduce sedentary time in adults to reduce the risk of numerous chronic diseases associated with sedentary behavior. Interventions should focus on reducing both workplace sedentary behavior and leisure-time sedentary behavior in sedentary office workers.

2.4 Ergonomically Risks

The computer is an essential tool in every dimension. On the other hand, the long periods of working at a computer in workplace can cause ergonomics problems that range from eyestrain, and headache to musculoskeletal ailments (Talwar et al., 2009). The goal of ergonomics is to create a safe work environment.

Health hazards are related in the modern office. According to Bhandari et al. (2007) using the wrong chair or just sitting improperly in front of a computer for a long time can lead to chronic debilities such as stiffness, headache, and backache. Muscles and tendons can become inflamed due to greater periods of sitting on personal computers (PCs), painful disorder of the hand is caused by pressure on the main nerve that runs through the wrist, the fingers are also prone to overuse injury, particularly the finger that clicks the mouse buttons (Suparna, et al. 2005).

Furthermore, Muthukumar et al. (2014) mentioned, in a study they conducted to establish the frequency and intensity of the discomfort in all body parts of computerized numeric control (CNC) in manufacturing industries, that were some health and safety problems associated with these machine operating. The study revealed that 20.5% of the operators

reported discomfort 1 or 2 times, 25.4% experienced discomfort 3 to 4 times a week, 37.7% had daily discomfort, and 16.4 reported discomfort several times a day. Discomfort was reported in all body parts, but highest discomfort was with the shoulder and arm region. Also de Looze et al. (2010) mentioned cost of ignoring the basic principles of ergonomics, which leads to occupational diseases, increase of absenteeism, higher medical and insurance cost, less production output and low quality work.

Besides, Zein et al. (2015) stated that industrial workers were repeatedly exposed to injury at work due to an incorrect working posture, improper working posture such as bending, twisting, overreaching, repetitive task and uncomfortable posture contribute to MSD. The questionnaire was distributed among 282 Malaysian industrial workers. The survey included with demographic detail, job specialty, industrial sectors, work and rest duration and the physical and mental condition during working time. The result was over 93.1% of the workers faced the physical fatigue and 94.2% experienced mental fatigue while working. Working posture was observed that shoulder at chest level 30.1%, moderate backache resulting from bending forward was 90.8% and lifting heavy load 1 to 5 kg 80.5% were the major work postures practiced by most of industrial workers, there are significance correlation of the physical injury with the body injury among industrial workers.

2.5 Ergonomics and Occupational Safety and Health

In safety occupation and health, Niu (2010) indicated that programmers on safety and health at work and the environment in International Labour Organization (ILO) has warrant to protect workers against sickness, diseases and injuries due to workplace hazards and risks including ergonomic and work organization risk factors. One of the main functions for the ILO is to help member States in applying the ILO standards, the ILO Produces practical

guides and training manuals on ergonomics at work and collects and analyses national practices and laws on ergonomics at the workplace.

Lewis et al. (2001) studied, in an ergonomics training program directed toward video display terminal (VDT), the users in an office environment. The results indicated statistically significant positive changes in two workstation configuration variables (head and mouse position). There were statistically significant improvements observed in the severity of symptoms and the program was effective in changing reported workstation configuration/posture.

Furthermore, Punnett (2000) stated that the recent experience with ergonomics programs in various manufacturing and service settings shows that they are effective in reducing morbidity, work absenteeism, and workers compensation claims.

Iranian telecommunications manufacturing company studied occupation safety and ergonomics among workers. The result was lower back symptoms were the most prevalent problems among the workers (67.9%). Regression analyses revealed that lighting, rotation, contact stress, repetition, gender and age were factors associated with symptoms. Work-Related Musculoskeletal Disorders (WMSDs) were high among workers; postural loading requires consideration and any ergonomic intervention should focus on eliminating ergonomic factors that associated with symptom (Mohammadfam et al., 2013).

2.6 Neck and Upper Extremity Symptoms

Lindgård et al. (2012) investigated the prevalence of neck and upper extremity symptoms among employees. The result was higher perceived labour in the neck and shoulder or arm/hands, and the association between low comfort and an increased risk for neck symptoms.

Also Aydeniz and GÜRSOY (2008) found that the extensive computer users had more positive clinical tests for diagnoses in the shoulder-neck, and the results suggested a high prevalence of musculoskeletal disorders of the upper extremities among intensive computer users.

These results are compatible with those of Arvidsson (2008) which stated that MSDs appear in employees whose work demands computer and this highly affected females and made them at higher risk in neck/shoulders/upper back than MSDs under the same conditions. This is as true with air traffic control as with female and male operators working with computer. MSDs in neck and upper limbs were assessed by standardized physical examinations in 148 air traffic controllers (71 women and 77 men) and the psychosocial work environment by questionnaire disorders in elbows/hands increased significantly after 20 months of work in the mouse-intensive system; there was no gender difference in elbows/hands disorders, while the females were at higher risk in neck/shoulders/upper back.

2.7 Costs of Work-Related Musculoskeletal Disorders

MSDs are the leading cause of work related illnesses and the second most frequently cited cause of sickness absence after the common cold (Gyi et al., 2013). Punnett (2000) stated that awareness and training application of ergonomic principles to the design of workplaces and workers needed to be provided among workers. In addition, the human pain and suffering of workers with adverse financial and psychosocial impacts need to be considered. There are also costs to employers through workers compensation, and decreased production quality, medical insurance premiums, and labour turnover. The study was in automotive manufacturing companies, annual costs associated with in-plant medical

visits for MSDs in 1989–93 were almost as high as those resulting from compensation claims were.

Gyi et al. (2013) indicated that the major health problem with high prevalence among computer users by subgroup of the Swedish workforce exposed to computer work was WMSDs symptoms/disorders. MSS among professional computer users are common. In the same side, Ekman et al. (2000) stated that the symptoms in the neck and upper limb, experienced after work, by the subgroup of the Swedish workforce that works mainly with computers and computer mice. Studies have shown that these MSDs are associated with the use of a computer mouse, the prevalence of MSS has been found to be greater in the mouse-operating arm and hand than in the other arm or hand.

Hignett et al. (2005) stated the prevalence of total number of workers who are exposed to physical ergonomic hazard among US workers, repetitive motion was the most prevalence of all ergonomic hazards (27% of US workers are estimated to be exposed continually).

2.8 Costs of Occupational Injuries and Illnesses

Leigh (2011) estimated the national costs of occupational injuries and illnesses among the medical staff and indirect costs of occupational injuries and illnesses are sizable, at least as large as the cost of cancer. The 2007 Bureau of Labour Statistics (BLS) and Survey of Occupational Injuries and Illnesses (SOII) in the United States estimated non-fatal injuries in the private sector for employees was 8,564,619, percentage of Medical Costs was 24.1%, number of diseases 516,149 and percentage of medical costs for diseases 36%. In part, this is because roughly 153 million people were working in 2007 and because virtually every job carries some risk of injury or disease, most Americans between the ages of twenty-two and sixty-five spend 40 to 50 per cent of their waking hours at work, some of these costs are borne directly by employers through workers' compensation premiums.

The costs of occupational injuries are usually classified into three categories: direct costs, indirect costs, and pain and suffering costs (called human costs.) Occupational injuries and diseases are costly for companies and for society. This study estimated the overall costs of occupational injuries and diseases in Québec, both human and financial, during the period from 2005 to 2007. The costs of occupational injuries and diseases occurring in a single year in Québec were estimated at \$4.62 billion on average, for the 2005–2007 period. Of this amount, approximately \$1.78 billion is allocated to financial costs and \$2.84 billion to human costs. The average cost per case is \$38,355. The results of these estimates are a relevant source of information for helping to determine research directions in Occupational Health and Safety (OHS) and prevention (Lebeau et al., 2014).

2.9 Effects of Occupational Health and Safety Practices

Wachter and Yorio (2014) recommended that when organizations invested in a safety management system, they approached in the direction of improving the performance of accident reduction/prevention and the occupational safety, as safety performance decreases the accident rate, personnel injuries and material damage decreases and working conditions enhance simultaneously resulting with higher employee motivation and reduced absenteeism. Besides, Kaynak, et al. (2016) stated that occupational health and safety practices had urged enterprises in occupational accidents. OHS practices as safety procedures and risk management, safety and health rules, first aid support and training, and organizational safety support had a positive effect on organizational commitment. It was seen that safety and health rules and organizational safety support decreased separation, where first aid support and training played a role in increasing work separation, at last safety behaviour and risk management, safety and health rules, and organizational safety support had indirect effects on job performance of the employees. In the same way, McLain and Jarrell (2007) suggested that the perceived compatibility of safety and

production demands has a positive impact on safe work behavior and reduced the intervention of safety hazards among those performing other tasks. This is an additional benefit in case of compatibility with safe working behavior, therefore, such findings indicated that managers should pay attention to compatibility of safety and work as an essential part of job design.

2.10 Safety Behavior, Performance and Awareness in Company

Three hundred, twenty-four 324 surveys were collected from Jordanian companies for safety management, and work group level factors on safety, self-efficacy, safety awareness, and safety behavior. Results reveal that management commitment, interrelationships harmony, continual improvement and employee empowerment significantly affect safety performance. However, there is a culture that blames the non-existence of spreading safety behavior through safety reporting system or reward system, for large-sized companies, top management, interrelationships, continual improvement significantly affect safety awareness and safety behavior. The results of this research provide a valuable feedback to decision makers about the effectiveness of safety performance study was obtained (Al-Refaie, 2013).

Furthermore, Amponsah-Tawaih and Adu (2016) conducted a study on 422 public hospital employees. The results showed that work pressure correlated negatively with safety behavior, general safety climate significantly correlated positively with safety behavior and negatively with work pressure. Although the effect size for the latter was smaller, hierarchical regression analysis showed management commitment to safety moderated the relationship between work pressure and safety behavior. When employees perceive safety communication, safety systems and training to be positive, they seem to comply with safety rules and procedures than voluntarily participate in safety activities. Occupational

Health and Safety Management Systems (OHSMSs) are becoming more widely spread in organizations. Consequently, their effectiveness has become a core topic for researchers. Mohammadfam et al. (2017) evaluated the performance of the Occupational Health and Safety Assessment Series 18001 specification in certified companies in Iran . The study indicated that the performance of certified companies with respect to occupational health and safety management practices is significantly better than that of non-certified companies. OHS Assessment Series 18001-certified companies have a better level of occupational health and safety; this supports the argument that OHSMSs play an important strategic role in health and safety in the workplace. In Addition, Hohnen and Hasle (2011) stated that increasing awareness of the adverse effects of occupational accidents and diseases on workers and workplaces has led to the increasing enforcement of preventive measures to reduce risks. Recent research shows that the OHSMSs play a fundamental role in tackling OHS challenges, improving worker safety, reducing workplace risks, and creating better, safer working conditions. OHSMSs are systematic instruments and powerful tools that enable organizations to manage their occupational risks, and help managers to control health and safety challenges in the workplace.

2.11 Safety Culture among Employers and Employees

The Kim et al . (2016) aimed to address how to change safety cultures in both theory and practice at the level of the workplace; and the role of prevention culture at the national level to deal with new and emerging work-related health issues. Besides, they wanted to investigate traditional occupational diseases in the rapidly changing work environment, the incidence of occupational injuries and diseases associated with industrialization. These have declined markedly following developments in science and technology, such as engineering controls, protective equipment, safer machinery and processes, and adherence to regulations and labour inspection. However, the decline in occupational injuries and

diseases has only been minimal, leading to increased interest in health and safety management systems. The introduction and enhancement of a safety culture displayed accident statistics over time in the construction industry in Hong Kong from 1986 to 2013. Annex No. (5) displays accident statistics over time in the construction industry in Hong Kong from 1986 to 2013 showing the decline in occupational injuries and diseases has only been minimal, leading to increased interest in health and safety management systems. Hong Kong Occupational Safety & Health Council promoted work safety awareness in employers and employees of high-risk trades to promote safety culture in workplaces. This organization also cultivated safety culture at the community level and developed a safety culture index to evaluate the effectiveness of strategies that attempt to improve safety culture.

2.12 Association between Sitting and Occupational Low Back Pain (LBP)

LBP has been identified as one of the most costly disorders among the worldwide working population. Lis et al. (2007) described evidence on the association between sitting and the presence of LBP. The results of studies undertaken between 1990 and 2004 measuring the annual prevalence rates of LBP among occupational groups investigated staff members who sit for more than half of their work-time. Annex No. (6) shows commercial travellers and office workers have higher annual prevalence rate for occupational groups among those spending more than half their working day in a sitting position.

2.13 The Association of Social Support and MSDs

This research was conducted using data collected on the Health in Hand Intensive Tasks and Safety (HITS). The study was conducted in 2011; Self-administered questionnaires were completed on socio-demographics, musculoskeletal disorder symptoms, psychosocial work factors and physical work factors. Self-employed therapists had a significantly higher

prevalence of pain/discomfort in any upper limb (86.6 %) compared to their employed counterparts (76.8 %) ($P=0.04$) and a lack of supervisor support is a risk factor to the prevalence of upper limb pain/discomfort in employed therapists [OR 0.67, 95% CI (0.52-0.87)]. This indicates the importance of supervisor support in relation to the prevention and/or reduction of work-related upper limb pain/discomfort prevalence in employed therapists. It has been indicated that a lack of support from immediate supervisors along with work or time pressures, are important contributors to WRMSDs, among workers across a range of industries (Hogan, 2017).

2.14 Working and Health Conditions in Workplace

A survey was carried out in 2000 by the European Foundation in a random sample of workers from 15 countries of the European Union in request to obtain information on occupational exposure, health problems and preventive measures taken at the workplaces. The questionnaire was adapted to the requirements of a telephone interview and a sample of 5000 workers between 15 and 64 years of age was randomly extracted from the regional list of telephone subscribers. Workers reported to be exposed for more than a quarter of their work time to vibrations 20%, noise 19%, dusts, fumes vapours, chemicals 18%, repetitive hand/arm movements 50%, tiring/painful positions 46%, working at very high speed or tight deadlines 60% . 54.4% of the subjects working with computers reported muscular pains in upper limbs, 6.8%, headache, 6.1%, sight problems 5.4% anxiety, 5.5%, muscular pain in lower limbs 4.3%, irritability 4.0% and hearing problems 2.3%. The most often reported risk factors were exposure to physical and chemical risk factors in industry/agriculture, and shift-work and working at very high speed in the services (Mastrangelo et al., 2008). Also Bohle et al. (2011) mentioned that Call-Center workers encounter major psychosocial pressures, including high work intensity and undesirable working hours. This combination of high work intensity and low autonomy

raises concerns about working hours in call centers and the control workers exert over work schedules.

2.15 Knowledge and Practice

Goggins et al. (2008) suggested that when implementing both comprehensive ergonomics programs and individual control measures to reduce WMSDs, these benefits include not only reduced number of injuries and injury costs, but also reduced turnover and absenteeism, improved product quality, and increased productivity. However, in peer-reviewed journals, the report of Cost Benefit Analyses (CBA) remains limited, and there may be a bias toward reporting only positive outcomes. Nonetheless, fortunately, there is an increasing trend toward performing CBA related to safety and health interventions, and using programs for ergonomics interventions have been developed in many CBA models.

2.16 Cost Benefits of Ergonomic Intervention

Robertson et al. (2013) reported that a Brazilian footwear company made an intervention with macro ergonomic. This resulted in reduction in human resource costs (80% reduction in industrial accidents, 100% reduction in WMSD, medical consultations and turnover, and a 45.65% reduction in absenteeism), production improvement (productivity increased in 3% and production waste decrease to less than 1%) and the benefit-to-cost ratio of the intervention was 7.2.

A successful ergonomics program should improve health, knowledge, training on ergonomics and the way of applying their work, ergonomic issues relevant to prevention and control of health and safety problems in the workplace. Ergonomic related injuries and illnesses range from eye strain and headache to (WMSs) ailments, including chronic back

neck and repetitive trauma injuries (RTIs)(Hignett et al., 2005).In addition Morse et al. (2009) stated that ergonomic solutions can lower the cost of worker injuries.

2.17 Organization Hazards in Workplace

Shikdar and Al-Kindi (2007) indicated that the major ergonomic shortage was found in physical design , layout of the workstations, employee postures, work practices, and training.The results indicated serious ergonomic shortage in office computer design of workstation.Forty-five percent of the employees used none-adjustable chairs, 48% of computers faced windows, 90% of the employees used computers more than 4 hrs./day, 45% of the employees adopted bent and unsupported back postures, and 20% used office tables for computers.Major problems reported were eyestrain (58%), shoulder pain (45%), back pain (43%), arm pain (35%), wrist pain (30%), and neck pain (30%).

2.18 Specific Guidelines

The specific guidelines are to enhance workers' knowledge in applying ergonomic programs. Robertson et al. (2009)explored the impact of the knowledge gained by office ergonomics intervention.The trainees reported that the office ergonomics training was beneficial and that they could apply the information to their work environment.Additionally, there was an increase in office ergonomics knowledge and skills among the participants from pre- to post-intervention .Ergonomics training trained workers to take physical exercise and not sit still and move body.

Kroemer and Kroemer (2016)stated thatergonomics are practical to the whole organization and directly or indirectlyaffects every employee.Size and layout of our workplace to consider, climate control (heating, cooling) lighting, seeing, hearing, sounding, design and comfort of workspace components like chair, keyboard should be considered.In

addition, organizational behavior, how people act in organization play an important role in overall office ergonomics success. Ergonomics effort is measured by improving productivity, efficiency, safety and improves equality of human life.

2.19 Ventilation

Many people spend a significant amount of time in buildings with heating, cooling, and ventilation systems at work and as consumers. People working in those buildings can fall victims to allergies, sick building syndrome, or building related illnesses caused by poor indoor air quality (IAQ). To reduce the health risks of its occupants, IAQ is more important than ever because it can have a significant impact on productivity, absenteeism, and perhaps insurance premiums. Building ventilation has long been recognized for its role in occupant health, comfort and productivity. IAQ goals in designing and operating buildings focus on providing healthful and comfortable indoor environment (de Robles and Kramer, 2017).

2.20 Workplace Force, Productivity and Presenteeism among Workers.

Michishita et al. (2017) examined the special effects of active rest by workplace units. One hundred thirty workers performed active rest (short-time exercise) program for 10 minutes per day during their lunch breaks, three to four times per week for 8 weeks. The result suggested that the intervention group improved on not only workers' individual force but also workplace force and presenteeism. Furthermore, regarding work breaks and productivity, Epstein et al. (2016) intended the research to consider the break habits of knowledge workers and explore how break activities are defined. Through a survey of 147 U.S based knowledge workers, the research has explored how breaks affect worker productivity. Breaks improve overall work performance, despite the short-term cost to productivity and overhead of task carrying on. Prior work has shown that frequent breaks

reduce accidents and physical discomfort in industrial environments. Likewise, the role of breaks in office workplace for avoiding repetitive strain injury, muscle fatigue, excessive sedentary behavior was investigated. The results suggest that being refreshed and relaxed is more strongly affected by breaks that are too short, rather than breaks that are too long and it affected a person feeling relaxed and refreshed at the end of a break.

2.21 Noise at Workplaces

The noise is one of the harmful and annoying hazards of workplace. The following annoying workplace factors can occur from chemical, biological or dust pollutants, noise, mechanical vibrations, electromagnetic field, static electricity, and improper lighting. Exposure to such factors can lead the workers to suffer from symptoms of the illness. It makes it difficult to carry out the basic work activities and causes additional hearing harmful changes in health (Smagowska, 2010). Also Reinhold et al. (2014) stated that employees are exposed to high and low frequency noise which may cause different health effects, such as hearing loss, sleeping disturbances and annoyance. In order to reduce the negative effects of noise, adequate personal protective equipment (PPE) is needed. It is one of the most accurate methods and effective at different frequencies varies.

2.22 Employee and Participation in Physical Activity

Kaewthummanukul and Brown (2006) stated that regular physical activity is an essential part of a healthy lifestyle that improves not only physical but also psychological health. It has increased muscle and bone strength, decreased body fat, improved weight control, and aerobic fitness. It also can help to enhance a sense of well-being, reduce the risk of developing depression and anxiety, and to improve the health status of individuals with diabetes, hypertension, congestive heart failure, obesity, and depression. Latest occupational health research and practice adds a new understanding about the factors that

influence employee participation in physical activity. The study examined the association between hours worked and level of physical activity. Working more hours was associated with insufficient physical activity among men, but no association was found among women. A cause for this difference could be that women may be forced by other time demands such as family activities. Besides, it provides valuable information that can be used to adapt effective workplace health promotion programs.

2.23 OSHA Regulation Regarding PPE

Rosu et al. (2015) identified the types of injuries that are prevented by inspections by OSHA. Work accidents are a major issue in OSHA. Employees of companies offering telecommunications services are exposed to work accidents, whether working in inside office and outside office. Especially during installation and operation of radio networks, this operations that involve, in most cases, working at height (e.g. telecom towers or pylons). The exploiting of risk assessment tools by the ones involved in this business could cut both human and financial losses caused by workplace hazards, for OSHA regulation regarding PPE. Employers have basic duties concerning the provision and use of PPE at work. On the other hand, anyone using PPE must be trained and instructed on how to use it. Employers should make sure that their employees properly apply PPE.

2.24 First Aid in Workplace

New techniques and equipment have helped make today's first aid simple and effective. In India, employers are required to provide one first-aid box for every 150 workers. Each first-aid box has to be kept in charge of a responsible person who holds a certificate in first-aid treatment recognized by the State Govt. and who should be available during the working hours of the workplace. It should focus on practical aspects of addressing common medical conditions at the workplace considering the hazards at the workplace (Priolcar,

2012). Regarding occupational safety and health, Palestinian act number 7 for the year 2000 indicated that every employer has to provide first aid box or more with its material in the workplace and the first aid box should be away from any source of danger and reached easily. Personal protection and prevention methods for workers from the work hazards and occupational diseases, first medical aid means provided for workers at the installation and periodical medical examination of workers (Pal. Act, 2000).

Chapter 3: Methodology

This chapter presents the study methodology and demonstrates the study design, study population and ethical issues that were considered. In addition, it presents the instruments used in the study, their validity, data collection process, data process and analysis, in addition to the limitations of the study.

3.1 Study Design

The design of the study is cross-sectional descriptive, analytical one to identify the major hazards, and the most common symptoms among Paltel employees, to assess the level of knowledge of employees in Paltel Company regarding ergonomics and determine the prevalence rate of Work-related Disorders at Paltel Company in GG.

3.2 Study Setting

All branch centers in Paltel Company in GG that meet the operational definition. These branch centers are five: In the North of Gaza (Jabalia center), Gaza center (Region). Middle Gaza (Al-Nusairate center), Khan Yunis center, and Rafah (Annex (1) of branches in Paltel at GG).

3.3 Study Period

The study took 11 months; it started in March 2017 and was completed by February 2018. Annex (2) describes the activities of the research and duration for each activity.

3.4 Study Population

All the employees working in the Paltel Company in GG, and meet the criteria were included in the sample. And the Study population was taken through:

- The researcher coordinated with the Human Resource in Patel Company to provide her with the list of centers in the GG and the number of staff members of each center.
- The data was collected from the list of employees in five centers North of Gaza (Jabalia center), Gaza center (Region), Middle Gaza (Al-Nusairate center), Khan Yunis center and Rafah
- Total eligible population 409 according to the previous agreed division, 26 of employees are in Jabalia center, 281 in Gaza center, 30 in Nuseirate center, 54 in Khan Yunis center and 18 in Rafah center. Table (3.1).

3.5 Study Sample

Using Raosoft website, online sample size calculator (Annex 3), the sample size was estimated to be 199 participants at 95% confidence interval, but to compensate the expected non-respondents, the researcher increased the sample size to be 240. The sample has been collected from five branches in Paltel Company in GG. These branches are in the North of Gaza (Jabalia center), Gaza center (Region), Middle Gaza (Al-Nusairate center), Khan Yunis center and Rafah, (Annex (1) of branches in Paltel at GG).

The proportional representation of employees of each branch is summarized in table (3.1) and it is as follows: 6% of Jabalia center, 69% Gaza center, 7% of Nusairate center, 13% Khan Yunis, and Rafah center 5%.

Table (3.1) Proportional representation

Paltel branches	No ofin office workers	No of out-office workers	Total	Percentage	Number
Jabalia	12	14	26	6%	15
Gaza	150	131	281	69%	165
Nuseirat	14	16	30	7%	17
KhanYounis	30	24	54	13%	31
Rafah	17	1	18	5%	12
Total	223	186	409	100%	240

3.6Eligibility Criteria

3.6.1 Inclusion Criteria

All employees having an official job number from Paltel Company and working for more than one year in Paltel.

3.6.2 Exclusion Criteria

Employees of Paltel and have less than one year experience.

3.7 Study Tools

The study utilized a questionnaire as an instrument to assess the level of knowledge of employees in Paltel Company regarding ergonomics and workplace safety hazards and determine the prevalence rate of Work-related disorders.

It is a self-constructed questionnaire, containing questions covering all the dimensions of the workplace safety hazards at PaltelCompany.Usually,questionnaires begin by collecting essential demographic information and informationabout the level of respondent

experience in the study domain to benefit the context of the questionnaire (Sharp et al., 2007). The questionnaire of this study began with general personal data, knowledge of the factors affecting exposure to the workplace hazards (physical hazards, organization hazards and personal behavior and practicing among employees), knowledge of employees for safety practices at workplace and questions regarding any history of any illness or physical signs and symptoms to determine the prevalence of illnesses or injuries regarding ergonomic hazards.

Consequently, the study employed online questionnaire approach using Google drive as tool.

- **Steps to create Online questionnaire:**

We have four main steps:

1- Create our forms

1.1 Add questions

1.2 Edit questions

2- Choose form settings and preview

2.1 Choose form settings

2.2 Preview our forms

3- Send our form

3.1 Pause or stop response collection

4- Analyzed responses

4.1 See response in forms

4.2 See response in Sheets

4.3 Download response as a CSV file.

Web-based surveys can facilitate immediate input validation, automatically skip items that are irrelevant to some participants, provide faster response rate, and automatically transfer answers into a datasheet for analysis (Wright, 2005).

3.8 Reliability of the research

To increase the reliability in this research, the following steps had undertaken:

1. Ensuring the online is ready for the experiment.
2. Visiting each center before sending the online questionnaire.
3. Explain the contents of the questionnaire items that focus on them.
4. Providing introduction by the facilitator to participants about the questionnaire.
5. Providing the link of the online questionnaire to each participant.
6. Providing assistance by one facilitator for any participant who has a problem or is confused.

3.9 Validity

The questionnaire will be designed and refined through five major steps, in which amendment and updating will be performed after each step. These steps are shown in the following points:

1. Designing the questionnaire by translating the model's factors into items.

2. Validating the questionnaire by nine experts on related areas.
3. Translating the questionnaire into Arabic language and conducting proofreading.
4. Converting the questionnaire into web-based format using Google drive.
5. Test the web-based survey tool by used pilot study on five branches

3.10 Pilot Study

A pilot study on five branches has been done to measure the validity and applicability of the questionnaire and the clearness of the questions and ensuring accessibility of the web-based survey tool. The sample of pilot study was 20 participants

3.11 Data Collection

After the pilot study, the researcher started to distribution of online questionnaire to all employees who are working in the five center. According to the inclusion and exclusion criteria and asking them to be self-administered, researcher started from the Paltel centers in the Jabalia and Gaza centers then to the Nusairate , Khan younis and Rafah center. Time allocation for each questionnaire ranged between 15-20 minutes. And after each employee finished the questionnaire the data automatically transfer answers into a data sheet for analysis.

3.12 Data Entry and Analysis

The researcher used Statistical Package of Social Science (SPSS) program for data entry and analysis. Data analysis was done by the researcher with support from the supervisor.

Moreover, the researcher followed the following steps:

- Designing a data entry model using SPSS program version 21.
- Statistical analysis includes simple statistical procedures (frequency, means and standard deviation).

- Cross tabulation was started for specific study variables.
- Advanced statistical analysis used to explore the potential relationship among the study variables, including:
 - Independent t-test to assess whether the means of two groups are statistically different from each other. For ex.(Physical , personal and organizations hazardsin relation to gender and type of work).
 - One way ANOVA test to determine whether there are any significant differences between the means of two or more independent groups.For ex.(physical, organization and personal hazards in relation to age education level, department of work andexperience years).
 - P-value equal or less than 0.05 was considered statistically significant, with confidence interval of 95%.

3.12 Response Rate

About 86% of surveyed people answered the questionnaire properly and returned it in due date.

3.13 Ethical Considerations

An official letter of approval from School of Public Health at Al-Quds University and Helsinki Committee. In addition,an admin approved from Paltel Company.Another approved was obtained from the human resources in Paltel for conducting this study.

On the start of the study, the researcher had care of the privacy and confidentiality of the employees during data collection. Non-respondent cases had been excluded and the absent cases had been replaced by the next.

3.14 limitations of the Study

- Non- acceptance of some employees to answer all of the questions due to the unexpected consequences of work condition
- End of contract of some employees before conducting the collection of maydata decreases the sample population

Chapter 4: Results and Discussion

Introduction

This chapter presents the main findings of the statistical analysis of the data and the interpretation of main results. It includes the socio-demographic characteristics of the participants and the Work-related risks. The relationship between demographic variables and the prevalence of risk has been also discussed.

4.1 Socio-Demographic Characteristics of the Participants

Table 4.1 shows the distribution of participants' characteristics according to their age, gender, marital status, educational level, department of work, type of work and years of experience.

Table (4.1) : Distribution of the study participants according to their demographic data

Items	No.	%
Age		
Mean =37.17 , MD= 38.0, St.D=8.8		
Less than 30 Years	45	21.8
From 30 to 39 Years	78	37.9
From 40 to 45 Years	48	23.3
More than 45 Years	35	17.0
Total	206	100.0
Gender		
Male	136	66.0
Female	70	34.0
Total	206	100.0
Marital Status		
Married	167	81.1
Not Married	39	18.9
Total	206	100.0
Education Level		
Diploma and less	41	19.9
Bachelor	157	76.2
High Degree	8	3.9
Total	206	100.0
Department		
Technical	77	37.3
Administrative	57	27.7
Commercial	72	35.0
Total	206	100.0
Type of work		
Office	141	68.4
Field	65	31.6
Total	206	100.0
Experience Years		
Less than 5 Years	56	27.2
From 6 to 10	62	30.1
More than 10 Years	88	42.7
Total	206	100.0

Age

The majority of participants were in the age group from 30-39 years (37.9%). The mean age of participants was 37.17 years with a standard deviation (S.D) 8.8. This result indicates that two thirds of participants is with age group 30 years and above because Paltel began to recruit workers in 1997 according to Paltel (2015) statistics. Paltel's policy and role in society has been employing university graduates and giving them the opportunity to work. Over years, the company started increasing the number of

employees and integrating recent graduates to exchange experiences with existing employees.

Genders

Results show that males represent (66%) of the study population and females (44%). Male workers greatly outnumber females because the nature of workplace at outside office that involves lifting, climbing, crawling and work in high places. This requires male employees to work in it, as was indicated by Reese (2008) about the nature of the workplace of telecommunications companies.

Marital status

The results show that (81.1%) of the population is married.

Education level

About 76.2% of the participants have a BSC certificate while 3.9% have a higher degree.

Department of work

The study population is divided according to department into; technical workers who cover 37.3% of participants while 27.7% of participants work in administrative department, and 35% involved in Commercial department. Recently, Paltel Company purchased part of technical services from other specialized companies. This has led to a reduction in the number of employees working in technical departments.

Type of work

68.4% of participants work at the office and 31.6% work on field.

Experience years.

The distribution according to experience years shows that 42.7% of participants have more than 10 years of experience. In addition, 30.1% of participants have experience years from 6-10 years and 27.2% of participants have experience less than 5 years.

4.2: Type of Safety Hazards.

4.2.1 Distribution of the safety hazards according to the physical work environment

Table 4.2 shows that there are 68.4% of study participants who have been using equipment and supportive tools in their work, while 31.6% do not. Also 96.5% of participants have been using computer/laptop while only 3.5% have been using equipment and supportive tools at work. Large proportion of participants using computer/laptop at work. These figures reflect the nature of workplace in office and that is consistent with the study of Ijmker et al. (2006) which indicated that millions of office workers use computer and it has become a core of modern life.

Table (4.2) : Distribution of the study participants according to their physical work environment.

Items	No.	%
Does your work need you to work on equipment and supportive tools?		
Yes	141	68.4
No	65	31.6
Total	206	100.0
If the answer was Yes? Choose ...		
Computer/laptop	136	96.5
Supportive tools at work to help examine and install the phone and internet	5	3.5
Total	141	100.0
If you use a computer /laptop, is it suitable for your work?		
Yes	120	88.7
No	16	11.3
Total	136	100.0
If you are working in office, is the furniture design suitable for you?		
Yes	107	75.9
No	34	24.1
Total	141	100.0
If you use other supportive tools at work, are they suitable for you?		
Yes	5	100
No	0	0
Total	5	100.0
Is the light suitable for you in your working environment?		
Yes	111	53.9
No	12	5.8
To some extent	83	40.3
Total	206	100.0
Is there noise in your working environment?		
Yes	101	49.0
No	40	19.4
To some extent	65	31.6
Total	206	100.0
If the answer is yes, does this noise affect your work?		
Yes	68	40.9
No	14	8.4
To some extent	84	50.7
Total	166	100.0
Is the ventilation suitable for you in your working environment?		
Yes	97	47.1
No	22	10.7
To some extent	87	42.2
Total	206	100.0
Is the time of rest sufficient for you at work?		
Yes	143	69.4
No	63	30.6
Total	206	100.0
If the answer is yes, is this rest enough in comparison with the working hours?		
Yes	38	26.6
No	56	39.2
To some extent	49	34.2
Total	143	100.0

Is your rest place healthy?		
Yes	73	35.3
No	133	64.7
Total	206	100.0
Is there a suitable healthy place to eat your food at work?		
Yes	92	44.7
No	114	55.3
Total	206	100.0
Is there enough time to eat your food at work?		
Yes	80	38.9
No	126	61.1
Total	206	100.0
Does the nature of your work require carrying heavy supportive tools?		
Yes	28	13.6
No	144	69.9
Sometimes	34	16.5
Total	206	100.0
If the answer is yes, does carrying these tools cause health problems for you?		
Yes	12	19.4
No	50	81.6
Total	62	100.0
Does the nature of your work require an extra muscle effort during the working hours?		
Yes	27	15.3
No	98	55.7
Sometimes	51	29.0
Total	176	100.0
Do you think that your work assignments are more than your work energy?		
Yes	135	65.6
No	71	34.4
Total	206	100.0
If the answer is yes, choose the reason		
Lack of material and human resources	7	5.2
Work pressure	128	94.8
Total	135	100.0
Does the nature of your work require you to work extra hours to achieve the objective of your work?		
Yes	81	39.3
No	32	15.5
Sometimes	93	45.2
Total	206	100.0

In addition, 88.7% of participants who use computer/laptop said that it's suitable for their work, 75.9% of the participants working inside office has suitable work furniture, and 90.8% of participants has suitable supportive tools. This means that 11% of participants do not have suitable computer/laptop in their work. In addition, 14% of participants do not have suitable work furniture, and 9% do not have suitable supportive tools. This leads to work-related disorders. These participants can be exposed to illnesses and disorders in occupation, as indicated by Talwar et al. (2009) in their study which showed that long periods of working at a computer in workplace could cause ergonomics problems that range

from eyestrain and headache to musculoskeletal ailments. This finding is consistent with the results of Bhandari et al. (2007) which stated that using the wrong chair or just sitting improperly in front of a computer for long time can lead to chronic debilities such as stiffness, and headache. Employer should enhance participants to applying ergonomics programs that can reflect positively on the health of their employees. The specific guidelines are to enhance workers' knowledge of applying ergonomic programs (Robertson et al., 2013).

Results indicated that 53.9% of participants said that lighting is suitable at work besides, 40.3% said to some extent. Also About 80.6% of participants said that there is noise at work of which 92.2% of participants said noise affects their work. High percentage of participants are exposed to noise. This result reflects negatively on participants and causes symptoms of illness, hearing loss, and sleeping disorders. Participants should use PPE to reduce the negative effect of noise. This is compatible with Reinhold et al. (2014) in their report about the risk of noise in the work and workers should use PPE to avoid these hazards.

About ventilation, 47.1% said It is suitable while 42.2% said to some extent, 11 % said it is not suitable. Good ventilation has a significant impact on the occupant health. This opinion of researcher is compatible with the study of de Robles and Kramer (2017) which stated that IAQ is more important it can have a significant impact on productivity, absenteeism, and perhaps insurance premiums. 69.4% of participants have enough time to take rest at work, however only 26.6% of participants said that the time is enough for rest compared with the working hours, 34.2% said to some extent and 39.2% said the time of rest is not enough.

The majority of participants (64.7 %) have not healthy rest place. Besides, more than half do not have suitable healthy place to take their food in work and 61% do not have enough

time to take their food. Unfortunately, this result shows that more than half of participants do not have healthy rest place, and have not suitable healthy place and enough time to take their food. Therefore, we recommend employer to provide a healthy and suitable place for employees and clarify the importance of taking breaks and rest. That can reflect positively on improving overall work performance and feeling relaxed on the part of their employees. The opinion of researcher here is consistent with that of Michishita et al. (2017) which stated that active rest by workplace improved not only workers' individual force but also workplace force and presenteeism. My finding agrees with that of Epstein et al. (2016) which stated that taking breaks in office, and workplace help staff avoid repetitive strain injury, muscle fatigue, excessive sedentary behavior and have a positive effect on workers' feeling relaxed and refreshed at the end of a break. 69.6% do not carry heavy supportive tools and most of participants said that the supportive tools do not cause any health problem for them.

About the nature of work, 55.7 % of participants do not need extra muscle effort during working hours, 65.6% work assignments are more than they can tolerate because of work pressure with percent 94.8%, and 39.3% of the participants said that the nature of work requires working extra hours to achieve the objective of work while 45.2% said sometimes. This result indicated that a high percentage of work assignments and working pressure among participants might lead to major psychosocial pressures. This finding was consistent with Hogan (2017) which stated that lack of support from immediate supervisors along with work or time pressures are important contributors to WRMSDs among workers. It also agrees with Amponsah-Tawaih and Adu's (2016) which purported that work pressure correlated negatively with safety behavior, and general safety climate significantly and positively correlated with safety behavior.

4.2.2 Distribution of the safety hazards according to the organizational factors

Table 4.3 shows that 80.1% of participants have safety and prevention procedures at work while 12.1% said sometimes they have, 60.1% of them said the procedures for safety are instructions.

Table (4.3): Distribution of the safety hazards according to the organizational factors

Items	No.	%
Do you have safety and prevention procedures at work?		
Yes	165	80.1
No	16	7.8
Sometimes	25	12.1
Total	206	100.0
If the answer is yes, define the followed procedures		
Instructions	114	60.1
Leaflets	43	22.6
Agreed protocols	19	10.0
Courses	13	6.8
Others	1	0.5
Total	190	100.0
Are instructions related to safety and professional health apparent in all the company's sites?		
Yes	77	37.4
No	129	62.6
Total	206	100.0
Are you trained in using safety and prevention tools?		
Yes	110	53.4
No	96	46.6
Total	206	100.0
Are the tools used in your work suitable for the requirements of safety and prevention procedures?		
Yes	165	80.1
No	41	19.9
Total	206	100.0
Does the company show any interest in safety at work?		
Yes	184	89.3
No	22	10.7
Total	206	100.0
Do you have a professional safety supervisor in your company?		
Yes	96	46.6
No	110	53.4
Total	206	100.0
Are there any awareness leaflets sent when there is a specific communicable disease?		
Yes	177	85.9
No	29	14.1
Total	206	100.0

Table (4.3): Distribution of the safety hazards according to the organizational factors

Do the company's policies and safety procedures take into account the needs of the employees?		
Yes	176	85.4
No	30	14.6
Total	206	100.0
Does the company conduct a periodical medical examination for the employees		
Yes	120	58.3
No	20	9.7
Sometimes	66	32.0
Total	206	100.0
Do your daily tasks conform with the health safety procedures?		
Yes	173	83.9
No	33	16.1
Total	206	100.0
Does the company impose on the employees the variety of tasks?		
Yes	82	39.8
No	124	60.2
Total	206	100.0
Are there specialists in professional safety to follow up the application of the health and professional safety protocols by the employees?		
Yes	124	60.2
No	82	39.8
Total	206	100.0
Does the company provide suitable preventive procedures to avoid hazards by the tools used at work?		
Yes	172	83.5
No	34	16.5
Total	206	100.0

Only 37.4% of the participants said the instructions of safety and professional health are apparent in all the company's sites, and 62.6% of the participants said the instructions of safety and professional health are not apparent. This result shows that more than half of the participants said that instruction of safety were not apparent in all sites of company. The researcher emphasizes that the company should be more interested in safety and health management systems because this interest in health and safety brings about a decline in the occupational injuries and diseases. This result is compatible with that of Kim et al. (2016) which stated that enhancement of a safety culture displays causes a decline in accident statistics in the workplace. Besides, OHSMSs practices to organizational safety support had a positive effect on organizational commitment, organizational safety support had indirect effects on job performance of the employees.

Half of the participants were trained on using safety and prevention tools. However, 80.1% agreed that the tools used in work were suitable for the requirements of safety and prevention procedures. 46.6% percentage of participants were not trained on using safety prevention tools. This leads to negative impact on safe work and increases work related disorders, absenteeism and cost of health insurance to Paltel Company. This negative impact is compatible with the study of McLain and Jarrell (2007) which stated that safety has a positive impact on safe work behavior and reduces the intervention of safety hazards to perform the tasks and managers should pay attention to compatibility of safety and work as an essential part of job design.

89.3% said that the company shows interest in safety at work while only 46.6% of participants have a professional safety supervisor in the company. The researcher suggests that employers should recruit a professional safety supervisor who is very important to promote safety culture among employees and improves employees' performance. This reflects on the health of their employees. This recommendation is consistent with that of Kim et al. (2016) which stated that promoting work safety awareness in employers and employees of high risk trades upgrade safety culture in workplaces.

More than 85.9% of the participants said that company has provided them with awareness leaflets when there was a specific communicable disease, and 85.4% said that company's policies and safety procedures take into account the needs of the employees. Therefore, the researcher recommends increasing awareness leaflets must not be restricted to the time when there is a communicable disease but to all aspects of occupational health and safety. These recommendations are compatible with those of Wachter and Yorio (2014) which stated that when organizations invested in a safety management system they approached in the direction of improving the performance, promotion of occupational safety, and decreases

in the accident rate, which in turn lead to higher employee motivation and reduced absenteeism.

58.3% of the participants said that the company conducts a periodical medical examination for the employees and 32 % said sometimes. In addition, 84.4% of participants said that daily tasks conform to the health safety procedures. Only 39.8% felt that the company impose variety of tasks on the employees, 60.2% of participants were followed by specialists in professional safety to ensure that the employees apply the health and professional safety protocols. The researcher recommends that employers should ensure that the employees apply the safety protocols. This is consistent with Al-Refaie's (2013) which suggested that large -sized companies, top management should employee safety awareness and safety behavior to employees and provided valuable feedback to decision-makers about the effectiveness of the safety performance. On the other hand, 83.5% of participants agree with that company provide suitable preventive procedures to avoid hazards.

4.2.3 Distribution of the of the safety hazards according to the personal behavior.

Table 4.4 shows that most of the participants are non-smokers. They represent 76.2%, while 23.8% of study participants were smokers, and about half of smoking participants smoke from 6 – 10 cigarettes. Most of them namely 87.8% smoke at work and 59.2% do not care about prevention and safety procedures during smoking. More than half of smoking participants do not apply safety procedures during smoking. This is an important role of managers to reduce any hazards in workplace. In the same vein, Kaynak et al. (2016) stated that managers should underline the positive impact on safe behaviour among employees.

Table (4.4): Distribution of the of the safety hazards according to the personal behavior.

Items	N0.	%
Do you smoke?		
Yes	49	23.8
No	157	76.2
Total	206	100.0
How many cigarettes do you smoke a day?		
2-5	15	30.6
6-10	24	49.0
More than 10	10	20.4
Total	49	100.0
Do you smoke at work?		
Yes	43	87.8
No	6	12.2
Total	49	100.0
Do you consider the prevention and safety procedures during smoking?		
Yes	12	24.5
No	29	59.2
To Some extent	8	16.3
Total	49	100.0
Do you regularly practice sports?		
Yes	31	15.0
No	175	85.0
Total	206	100.0
Do you suffer from chronic diseases?		
Yes	55	26.7
No	151	73.3
Total	206	100.0
Chronic diseases		
Diabetes	16	29.1
Blood pressure	29	52.7
Diabetes and pressure	9	16.4
Asthma	1	1.8
Total	55	100.0
Do you have information about any professional and health safety services?		
Yes	64	31.1
No	142	68.9
Total	206	100.0
Do you have information about your work risks?		
Yes	76	36.9
No	130	63.1
Total	206	100.0
If the answer is Yes, do you know the prevention procedures?		
Yes	54	71.0
No	22	29.0
Total	76	100.0
Did you receive any training courses to know how to deal with equipment to do your work safely?		
Yes	45	21.8
No	161	78.2
Total	206	100.0
Do you implement what is in the awareness leaflets to avoid risks at work?		
Yes	51	24.9
No	102	49.8
Sometimes	52	25.4
Total	205	100.0

Table (4.4): Distribution of the of the safety hazards according to the personal behavior.

Did you receive any first aid training?		
Yes	33	16.0
No	173	84.0
Total	206	100.0
Do you have at work medical aid means suitable for usage?		
Yes	56	27.2
No	150	72.8
Total	206	100.0
Did you have any training in using the fire extinguisher?		
Yes	29	14.1
No	177	85.9
Total	206	100.0
Do you use personal prevention equipment continuously at work?		
Yes	37	18.0
No	169	82.0
Total	206	100.0
If you are doing office work, do you apply the correct practices for setting on the chair?		
Yes	30	21.3
No	90	63.8
Sometimes	21	14.9
Total	141	100.0
Do you apply the correct practices when you use the mouse?		
Yes	24	17.0
No	93	66.0
Sometimes	24	17.0
Total	141	100.0
Do you practice the correct practices related to vision direction and distance from the computer screen?		
Yes	36	25.5
No	85	60.3
Sometimes	20	14.2
Total	141	100.0
If you do office work, do you practice the correct practices in relation to weather factors adjustment		
Yes	18	12.8
No	100	70.9
Sometimes	23	16.3
Total	141	100.0
If you do office work, do you practice the correct practices in carrying the supportive tools at work?		
Yes	33	23.4
No	80	56.8
Sometimes	28	19.8
Total	141	100.0
Do you inform the company about any risk in any of its sites?		
Yes	157	76.2
No	49	23.8
Total	206	100.0
If the answer is Yes, is it easy to report easily this risk?		
Yes	149	94.9
No	8	5.1
Total	157	100.0
Is there any follow up on the risks reported?		
Yes	126	80.3
Sometimes	31	19.7
Total	157	100.0

85% of the study participants are not practicing any regular sporting, while 15.0% are practicing sports regularly. Fewer participants practice regular sporting after work. Physical activity is an important part of a healthy lifestyle that improves not only physical but also psychological health. Occupational health research and practice add new understanding about the factors that influence employee's participation in physical activity (Kaewthummanukul and Brown, 2006).

73.3% of study population have not chronic disease while 26.7% suffer from chronic diseases especially from blood pressure with percent 52.7%, and 29.1% suffer from diabetes. The researcher noticed that half of the participants who have chronic disease suffer from blood pressure. This could be attributed to association between chronic diseases and working hours in sedentary behavior. Employers should enhance their employees to apply manuals on ergonomics at work to avoid sedentary behavior through working hours. Likewise Clemes et al. (2014) stated that chronic diseases are associated with working hours in sedentary behavior, and interventions should focus on reducing sedentary behavior in office workers.

68.9% of participants have not enough information about professional and healthy safety services. These results reflect that more than half of the participants have not enough information about health safety professionals. There is an important role here for management to motivate their employees with health safety practices. Additionally, Kim et al. (2016) stated that management should increase interest in health and safety, and enhance safety culture among workers.

Only 36.9% know their job hazards and 71% of the participants know how to avoid such hazards. Less than 40% of participants have not information about job hazards in workplace, which means an increase in the number of injuries, WMSDs, absenteeism, and

cost of health insurance for Paltel. Goggins et al. (2008) referred to it in their study, which stated that organization should implement both comprehensive ergonomics programs and individual control measures to reduce WMSDs among workers, number of injuries, injury costs, and reduction of turnover and absenteeism, improved product quality, and increased productivity.

On the other hand, 21.8% of participants did not receive training courses to deal with equipment to accomplish their work safely and 24.9% of the participants implemented the awareness leaflets to avoid risks at work. Almost a quarter of the employees did not get training courses to deal with equipment and implement awareness leaflets. This leads to occupational risks and hazards at workplace, a finding concluded by Hohnen and Hasle (2011) which stated that increasing awareness of the adverse effects of occupational accidents and diseases on workers and workplaces has led to the increasing enforcement of preventive measures to reduce risks, creating better safer working conditions, and enabled organizations to manage their occupational.

Only 16.0% received first aid training and 27.2% had at work suitable medical aid for usage, and 14.1% have training to use fire extinguisher. Little number of participants were trained for medical but did not get suitable usage for first aid and fire extinguisher. My results are incompatible with the Palestinian act regarding occupational safety and health in workplace, which stated that every employer has to provide first aid box in the workplace, and prevention methods for workers from the work hazards and occupational diseases, and should train their employees on using first aid and fire extinguisher (Pal. Act, 2000).

Only 18% of participants use personal prevention equipment during work. The researcher noted that more than 80% of participants did not use personal prevention equipment during work, which may cause work related disorders, absenteeism, and increase in the cost of

health insurance .Paltel should train its workers on PPE in OSHA regulation, which is compatible with Rosu et al. (2015) which showed the importance of OSHA regulation regarding PPE. Employers have basic duties regarding the use of PPE at work, and trained workers to use PPE and instructed them on how to use it. Employer make sure that workers are aware of why it is needed, and the importance of using it in workplace.

More than half of the participants cannot apply the correct practices for sitting on the chair, for using mouse, making vision direction and distance from the computer screen, changing the weather factors, carrying the supportive tools at work at office work. The researcher observed that half participants could not do correct safety practicing in workplace. These results may cause MSDs among employees and increase the cost of health insurance for Paltel. This is consistent with Ekman et al. (2000) studies which have shown that computers and computer mice are to be associated with MSDs , also Kroemer and Kroemer (2016) which stated that ergonomics are practical and affect every employee to consider climate control (heating, cooling) lighting , seeing, hearing, sounding , design and comfort of work space .

76.2% informed the company about any risk in any site of company, and 94.9% said it's easy to report the risk easily, and 80.3% of them said there was a follow up on the risk that was reported. More than 75% of participants agreed that it was easy to inform about risk and easy for the company to follow it up .

4.2.4 Prevalence rate of outcome among workers.

Table 4.5 shows that only 17.0% of the participants do practice activities causing fatigue after the work, 37.9% had sleeping disorder after work and 15.5% sometimes, 57.27% of them due to their work and 42.73% due to other causes. The researcher interpreted that

half percentage of participants suffered from sleeping disorders and this causes absenteeism, and less production. Paltel should train its employees and enhance them for getting ergonomics training. This is consistent with de Looze et al. (2010) which stated that ignoring the basic principles of ergonomics leads to occupational diseases, increase in absenteeism, higher medical and insurance costs, less production output, and low quality work.

Table (4.5): Distribution of prevalence rate of outcome among workers.

Items	No.	%
Do you practice any activities after the working hours causing fatigue?		
Yes	35	17.0
No	171	83.0
Total	206	100.0
Do you have sleeping disorders after work?		
Yes	78	37.9
No	96	46.6
Sometimes	32	15.5
Total	206	100.0
If the answer is Yes, do you think it is related to your current work?		
Yes	63	57.27
No	47	42.73
Total	110	100.0
Do you have any disease symptoms because of your work?		
Yes	152	73.8
No	54	26.2
Total	206	100.0
If you have any symptoms, fill in this list with Yes or No		
Yes	152	100
No	0	0
Total	152	100.0
Head and neck		
Yes	121	79.6
No	31	20.4
Total	152	100.0
Shoulders		
Yes	112	73.7
No	40	26.3
Total	152	100.0
Back		
Yes	130	85.5
No	22	14.5
Total	152	100.0
Upper limbs		
Yes	58	38.2
No	94	61.8
Total	152	100.0
Lower limbs		
Yes	33	21.7

No	119	78.3
----	-----	------

Table (4.5): Distribution of prevalence rate of outcome among workers.

Total	152	100.0
Do you suffer from any problems in the eyes or any vision problems during or after work		
Yes	139	67.5
No	67	32.5
Total	206	100.0
Did you have any sick leave?		
Yes	104	50.5
No	102	49.5
Total	206	100.0
If the answer is Yes, how many days?		
Two days	85	81.0
Three and more	19	19.0
Total	104	100.0
What was the reason for the sick leave		
Injury	10	9.6
Professional diseases	9	8.7
Normal disease	85	81.7
Total	104	100.0
If you had an injury at work what were the procedures taken immediately after the injury		
First Aid	12	18.8
Special treatment	30	46.9
None	22	34.4
Total	64	100.0
Does your health insurance cover work injuries?		
Yes	172	83.5
No	34	16.5
Total	206	100.0

73.8% of participants had disease symptoms due to the work, 85.5% had back pain ,79.6% had head and neck pain, 73.7% had shoulders pain,and the lastprevalence rate of participants for occupation disease were upper limbs pain that had 38.2%, and 21.7% had lower limbs pain. The researcher observed that the highest prevalence rate among participants was back pain, then the second prevalence rate was head and neck pain and the third prevalence rate was shoulders pain. These results are compatible with those of Mohammadfam et al. (2013)which stated that the highest prevalence rate was lower backsymptoms, while Lindegård et al. (2012)stated that a high percentage of workers perceive labour in the neck and shoulder or arm/hands.Besides,Lis et al. (2007) stated that commercial travellers and office workers have higher prevalence rate for occupational disease.

67.5% of participants suffered from eye symptoms. The researcher noted that more than half of the participants suffered from eye symptoms. These results are consistent with those of Shikdar and Al-Kindi (2007) which indicated that major problems reported were eyestrain for employees who used computers for more than 4 hrs./day, and used office tables for computers.

Half of the participants had sick leaves last year, 81.0% had a sick leave for two days and 81.4% was for normal diseases. The researcher noted that most of employees had sick leave last year for normal disease. While employees who had been injured during the work, the result shows that 18.8% had first aid, 46.9% had a special treatment, 34.4% did not have any medical intervention, and 83.5% said that the health insurance covered work injuries. The researcher points out that about 70% of employees who have been exposed to work injuries did not receive first aid and medical intervention in the workplace. This is incompatible with Palestinian act number 7 for the year 2000 for personal protection and prevention methods for workers from the work hazards and occupational diseases and periodical medical examination of workers. Paltel should train its employees to make first aid. This is consistent with Priolcar's observation, (2012) which indicated that employers are required to provide first-aid box, and focus practical aspects of addressing common medical conditions at the workplace considering the hazards at the workplace.

4.3 Relationship between demographic variables and study domains

T-test and ANOVA were used to compare the means of study domains (working environment, factors related to the company, personal behaviours and practicing, information about work hazards), and demographic variables of the participants (age, gender, etc.).

Table (4.6): Differences between domains of the study and age group of participants

Domains	Age group	No.	Mean	Std	F	Sig.
Working Environment	Less than 30 Years	45	54.7	26.6	5.135	.0020
	From 30 to 39 Years	78	34.9	28.4		
	From 40 to 45 Years	48	39.8	32.3		
	More than 45 Years	35	50.8	25.5		
	Total	206	43.1	28.2		
Factors related to the company	Less than 30 Years	45	48.4	31.0	22.284	.0010
	From 30 to 39 Years	78	72.4	15.0		
	From 40 to 45 Years	48	76.1	16.0		
	More than 45 Years	35	81.5	19.3		
	Total	206	69.6	23.4		
Personal Behaviour and Practicing	Less than 30 Years	45	38.1	23.4	16.978	.0010
	From 30 to 39 Years	78	26.7	21.5		
	From 40 to 45 Years	48	42.6	27.1		
	More than 45 Years	35	60.9	25.0		
	Total	206	38.7	26.6		
Information about Work Hazards	Less than 30 Years	45	53.2	17.2	7.415	.0010
	From 30 to 39 Years	78	60.5	15.1		
	From 40 to 45 Years	48	56.5	18.3		
	More than 45 Years	35	44.9	17.1		
	Total	206	55.3	17.5		

4.3.1 Differences between domains of the study and age group of participants.

Table 4.6 shows that there are differences between age group and the four domains with P-value less than 0.05.

The results show that there are statistically significant differences between working environment and age of participant with less than 30 years old (P-value =0.002), with higher mean score (54.7). Participants, whose age is more than 45 years, came second with mean score (50.8). Participants, whose age ranges between 40-45 years, got a mean score (39.8). Participants, whose age ranges from 30-39 years, came last, according to ANOVA test and post hoc test (Bonferroni test). The researcher thinks that participants with age group less than 30 years got the highest mean. They are the best because they were new employees in Paltel. They were more interested in doing their daily task without complaints about work pressure and they felt that the working environment was suitable for them. However, working environment affected age participants from 30-39 years the most, because work pressure and daily task decrease the participants' interest in working

environment. The results are consistent with those of Punnett (2000) which stated that workers with high pressure ignore ergonomic principles in the design of workplaces. This caused pain and suffering to workers, with adverse financial and psychosocial impacts, and decreased production quality.

In addition, there are statistically significant differences between factors related to the company and participant. Those with more than 45 years (P -value = 0.001), with higher mean score 81.5%, followed by those whose age ranges from 40-45 years with mean score (76.1). The participants from 30-39 years got a mean score of (72.4) and participants less than 30 years with a mean score of (48.4) according to ANOVA test and post hoc test (Bonferroni test). The researcher believes that participants with more than 45 years are the best in these domains. Probably, this is attributable to experience and loyalty in conforming to procedures of safety and health in Paltel Company. Moreover, they had special position inside the work place, and they have a say in the decision-making process inside the company. The participants with age group 40-45 years came second, followed by participants with age group 30-39 years who came third. The participants with age group less than 30 came last. The researcher notes that there is a positive relationship between years of experience, loyalty, and engagement to safety and health procedures in Paltel Company. These results are consistent with those of Al-Refaie (2013) which stated that management commitment for safety interrelationships; harmony, continual improvement, and employee empowerment significantly affect safety performance of employees with reward system. Similarly, my result agrees with that of Hohnen and Hasle (2011) which stated that increasing awareness of the adverse effects of occupational accidents and diseases among workers and workplaces has led to increasing enforcement of preventive measures to reduce risks.

The results show that there are statistically significant differences between personal behaviors, practicing, and age participants with more than 45 years (P -value= 0.001) with higher mean score of (60.9), followed by participants whose age ranges from 40 to 45 years with mean score (42.6). The participants with less than 30 years got a mean score (38.1), and participants whose age ranges from 30-39, according to ANOVA test and post hoc test (Bonferroni test). The researcher argues that the participants with more than 45 years are the best for this domain because there are two reasons; the first one is experience in Paltel Company alongside with more orientation and loyalty in company. The second one is that those participants were acting in accordance with the safety and health procedures to avoid exposure to work related disorders, and they tried to protect their health in workplace. However, personal behavior and practicing had the highest impact among participants with age from 30-39 years. The researcher interpreted that to the assumption that those participants had decreased interest of working environment with daily task and work pressure. The researcher also noted that in domains (working environment), the cause was ignoring applying safety and health procedures in their workplace. These results are comparable with that of Al-Refaie (2013) which indicated that employee improvement, blameless culture, and employee empowerment significantly affect safety awareness and safety behavior. Likewise, my finding is consistent with that of Amponsah-Tawaih and Adu (2016) which suggested that safety climate significantly correlated positively with safety behavior and negatively with work pressure .

In addition, there are statistically significant differences of information about Work Hazards for the participants whose age ranged from 30 to 39 years old (P -value= 0.001) with higher mean score (60.5), followed by participants whose age is from 40 to 45 years with mean score (56.5). The participants with less than 30 years got a mean score (53.2) and came third. The participants with more than 45 years got a mean score (44.9) according

to ANOVA test, and post hoc test (Bonferroni test). The researcher interpreted that the best participants in this domain was those participants with age group from 30-39 years. This is because they have information about the work hazards but ignore applying these safety procedures in their workplace. The researcher noted the same thing with the domains of personal behavior and practicing. The participants with age group more than 45 years came final. The researcher thinks that they are the best in the two domains but they apply old procedures for safety and without refreshing these procedures regarding their information for safety and health in workplace. The results are compatible with those of Kim et al., (2016) which indicated to change safety cultures in both theory and practice at the level of the workplace; and the role of prevention culture at the national level to deal with new and emerging work-related health issues as well as traditional occupational diseases in the rapidly changing work environment.

4.3.2 Differences between domains of the study and gender of participants

Table 4.7 shows that there are statistically significant differences in the domains of working environment and factors related to company due to gender according to Independent T Test, as the P-value is less than 0.05. The working environment has a greater impact on males with mean score 34.4 than females with mean score 59.9.

Table (4.7): Differences between domains of the study and gender of participants

Domains	Gender	No.	Mean	Std	T	Sig.
Working Environment	Female	136	34.39	33.0	6.087	.001
	Male	70	59.9	16.4		
Factors related to the company	Male	136	75.0	18.9	4.899	.001
	Female	70	59.0	27.5		
Personal Behavior and Practicing	Male	136	39.7	27.6	0.747	.4560
	Female	70	36.8	24.4		
Information about Work Hazards	Male	136	54.4	17.6	1.124	.2620
	Female	70	57.2	17.1		

The researcher thinks that nature of workplace suits females who have been working inside office and females have been trying to apply the procedures of safety and health in working environment. Males have been working inside and outside office with a variety of working environment, and with ignoring to apply safety and health procedures in working environment. This leads to increase the effect on males than females. These results are compatible with those of Kaewthummanukul and Brown (2006) which stated that working more hours was associated with insufficient physical activity among men, but no association was found among women. A cause of this difference could be that women may be forced by other time demands such as family activities, besides it provides valuable information that can be used to adapt effective workplace health promotion programs.

Other factors related to company have a great effect on females with a mean score 59 than males with mean score 75. The researcher deems that males are more loyal to Paltel Company, because some of them work in high positions in Paltel Company and they are near to decision-making. These results are incompatible with those of Arvidsson (2008) which stated that Musculoskeletal disorders in demanding computer work had affected females at higher risk in neck/shoulders/upper back than males.

On the other hand, there are no statistically significant differences in the domains of personal behaviour and practicing and information about work hazards due to gender. The researcher assumes that there is no relationship between with two last domains attributable to gender.

4.3.3 Differences between domains of the study and education of participants

ANOVA test was used to compare the differences between the means of domains of the study (working environment, factors related to the company, personal behaviours and

practicing, and information about work hazards) and education of participants according to post hoc test (Bonferroni test).

Table (4.8): Differences between domains of the study and education of participants

Domains	Education	No.	Mean	Std	F	Sig.
Working Environment	Diploma and less	41	27.0	32.2	7.398	0.001
	Bachelor	157	47.2	29.3		
	Higher degree	8	45.1	31.2		
	Total	206	43.1	30.9		
Factors related to the company	Diploma and less	41	77.7	17.9	4.178	0.017
	Bachelor	157	67.0	24.3		
	Higher degree	8	78.8	18.7		
	Total	206	69.6	23.4		
Personal Behavior and Practicing	Diploma and less	41	50.0	26.4	9.123	0.000
	Bachelor	157	34.6	25.5		
	Higher degree	8	61.3	20.5		
	Total	206	38.7	26.6		
Information about Work Hazards	Diploma and less	41	53.7	19.3	0.561	0.571
	Bachelor	157	56.0	16.9		
	High degree	8	50.9	18.9		
	Total	206	55.3	17.5		

Table 4.8 shows that there are differences between three domains namely working environment, factor related to company and personal behaviour and practicing, due to education according to ANOVA test and post hoc test (Bonferroni test). The researcher interpreted that working environment had an effect on participants with Diploma and less with a mean score (27.2) because they are working without interest and satisfaction with suitable working environment during working hours and less information of correct action of safety and health procedures in working environment. However, participants with Bachelor degree are the best because they have information for suitable procedures in safety and health working environment in their workplace. These results are comparable with those of Al-Kindi (2007) which suggested that the major ergonomic shortage was found in physical design and layout of the workstations, employee postures, work practices, and training, which leads to hazards in workplace among workers.

Furthermore, according to ANOVA test and post hoc test (Bonferroni test), the researcher interpreted that factors related to the company had highest impact on participants who had Bachelor degree with a mean score (67.0) because they ignored the safety and health procedures at Paltel Company. Regarding the other items, the best participants regarding factor related to company are higher degree participants, with highest mean score (78.8) because those participants are supervisors who improve and follow up the equality of working with safety and health procedures. These results are consistent with Hogan (2017) which stated that importance of supervisor support in relation to the prevention and/or reduction of work-related upper limb pain/discomfort prevalence in employed therapists. It has been indicated that a lack of support from immediate supervisors along with work or time pressures are important contributors to WRMSDs, among workers across a range of industries according to ANOVA test and post hoc test (Bonferroni test). The researcher hypothesizes that personal behavior and practicing had highest impact on the participants who had Bachelor certificate with a mean score of (34.6), because, as we noted that in the domains (factor related to the company), they had higher impact. This reflected negatively on personal behavior and practicing. The best for this domain was participants with higher degree with a mean score of (61.3) because they are the best in the domains (factor related to the company). This reflects positively on personal behavior and practicing. These results are consistent with those of Goggins et al. (2008) which indicated that implementing both comprehensive ergonomics programs and individual control measures reduce WMSDs. These benefits include not only reduced number of injuries and injury costs, but reduced turnover and absenteeism, and improved product quality. However, there are no statistically significant differences between information about work hazards and education of participants.

4.3.4 Differences between domains of the study and department

ANOVA test was used to compare the differences in means of domains of the study (working environment, factors related to the company, personal behaviours and practicing, and information about work hazards) and by department according to post hoc test (Bonferroni test).

Table (4.9): Differences between domains of the study and department

Domains	Department	No.	Mean	Std	F	Sig.
Working Environment	Commercial	77	15.2	26.5	97.261	0.000
	Technical	57	59.4	21.2		
	Administrative	72	60.0	17.5		
	Total	206	43.1	30.9		
Factors related to the company	Commercial	77	72.0	21.9	1.557	0.213
	Technical	57	65.0	26.4		
	Administrative	72	70.5	22.2		
	Total	206	69.6	23.4		
Personal Behavior and Practicing	Commercial	77	34.8	25.6	6.131	0.003
	Technical	57	33.2	25.9		
	Administrative	72	47.3	26.3		
	Total	206	38.7	26.6		
Information about Work Hazards	Commercial	77	57.0	15.6	1.128	0.326
	Technical	57	56.3	18.3		
	Administrative	72	52.9	18.6		
	Total	206	55.3	17.5		

Table 4.9 shows that there are statistically significant differences between department and both of domains (Working Environment and Personal Behaviour and Practicing) with P-value less than 0.05. According to ANOVA, test and. post hoc test (Bonferroni test). The researcher believes that working environment had highest impact on participants who had been working in commercial department with mean score (15.2), because those participants were working in pressure and additional work hours to achieve the daily task. This reflected negatively on decline in the interest of suitable working environment. On the other hand, the best participants were in the administrative department with highest mean score (60.0), because those participants were close to the management and they were engaged in decision making in Paltel. This means that they have suitable working

environment. These results are compatible with Kroemer and Kroemer's (2016) which stated that ergonomics are practical to the whole organization and directly or indirectly affect every employee, size and layout of our workspace considering , climate control (heating, cooling) lighting , seeing, hearing, sounding , design and comfort of workspace components like chair, and keyboard.

Again, according to ANOVA test and post hoc test (Bonferroni test), personal behavior and practicing had high impact with mean score (33.2) among technical participants. The researcher believes that the case is so because those participants were working outside and inside office and ignored safety and health procedures, which reflected negatively on their behavior, and practicing in workplace. However, administrative departments are the best in this domains with mean score (47.3) because, as we noted, they are the best in the domains (working environment). This reflects positively on their behavior and practicing in the workplace. These results are consistent with those of Kroemer and Kroemer (2016) which proved that organizational behavior and how people act in organization play an important role in overall success of office ergonomics which is measured by improving productivity , efficiency, safety and improving equality of human life.

While there are no statistically significant differences between the (Factors related to the company and Information about Work Hazards) attributable to the department.

4.3.5 Differences between domains of the study and type of work

Analysis of performing Independent T- Test in table (4.10) shows that there are statistically significant differences in three domains (working environment, personal behavior and practicing and information about work hazards) attributable to type of work.

Table (4.10): Differences between domains of the study and type of work

Domains	Type of work	No.	Mean	Std	T	Sig.
Working Environment	Office	141	62.9	11.9	4.686	.0000
	Field	65	60.8	6.4		
Factors related to the company	Office	141	67.5	25.4	1.893	.0600
	Field	65	74.1	17.6		
Personal Behaviour and Practicing	Office	141	41.2	27.3	1.969	.0410
	Field	65	33.4	24.2		
Information about Work Hazards	Field	65	58.5	13.3	1.751	.0480
	Office	141	53.9	18.9		

According to Independent T Test results, the researcher thinks that working environment had highest impact on field participants with a mean score of (60.8) because of the nature of their working which requires them to stay 8 hours doing the daily task without being interested in working environment. On the other hand, office participants are the best with mean score (62.9) because they are working, inside office and find working environment suitable and interesting. These results are inconsistent with those of de Robles and Kramer (2017) which stated that people spend a significant amount of time in buildings with a heating and cooling and ventilation systems at work. These staff members can fall victim to allergies, sick building syndrome, or building related illnesses caused by IAQ. To reduce the health risks of its occupants, IAQ is more important than ever because it can have a significant impact on productivity, absenteeism, and perhaps insurance premium.

Again according to Independent T Test, the researcher interpreted that personal behavior and practicing had high impact on field participants with a mean score of (33.4) because they were working with neglecting the suitable construction in working environment. This leads to hazards in their behavior and practicing in their work, but the best for this domain were office participants with a mean score of (41.2) because they are working in suitable construction and favorable working environment. This reflects positively on their behavior and practicing. These results are compatible with those of Epstein et al. (2016) which stated that role of breaks in office workplace for avoiding repetitive strain injury, muscle

fatigue, excessive sedentary behavior. In addition, being refreshed and relaxed strongly is affected by breaks that are too short, and this influenced a person's feeling of relaxation and refreshment at the end of a break.

Again according to Independent T Test, the researcher interpreted for information about work hazards that office participants had highest impact with a mean score (53.9) because those participants dealt with rapid technological development devices and used these without having enough information about their work hazards. These results are consistent with those of Clemes et al. (2014) which stated regarding world technology at modernization industry, computer technology has revolutionized the work place and large proportion of time in sedentary behaviour on both workdays in front of computer, with greater sitting time has been associated with increased risk of overweight, obesity, blood pressure, diabetes and the metabolic syndrome. All these cause mortality and cardiovascular disease mortality.

However, there are no statistically significant differences between in domains of factors related to the company and working environment attributable to type of work.

4.3.6 Differences between domains of the study and years of experience of participants

ANOVA test was used to compare the differences in the means of the domains of the study (working environment, factors related to the company, personal behaviors and practicing, and information about work hazards) and years of experience of participants according to post hoc test (Bonferroni test).

Table (4.11): Differences between domains of the study and years of experience of participants.

Domains	Experience	No.	Mean	Std	F	Sig.
Working Environment	From 2 to 5 years	56	49.1	24.5	3.157	0.045
	From 6 to 10 years	62	35.4	35.2		
	More than 10 Years	88	44.6	30.6		
	Total	206	43.1	30.9		
Factors related to the company	From 2 to 5 years	56	52.5	29.3	27.264	0.000
	From 6 to 10 years	62	72.5	11.4		
	More than 10 Years	88	78.4	19.5		
	Total	206	69.6	23.4		
Personal Behaviour and Practicing	From 2 to 5 years	56	35.6	23.4	35.586	0.000
	From 6 to 10 years	62	21.2	15.1		
	More than 10 Years	88	53.0	26.9		
	Total	206	38.7	26.6		
Information about Work Hazards	From 2 to 5 years	56	56.8	17.1	7.470	0.001
	From 6 to 10 years	62	61.1	12.1		
	More than 10 Years	88	50.4	19.5		
	Total	206	55.3	17.5		

Table 4.11 shows that there were statistically significant differences between the mean scores of four domains attributable to years of experience as P-value was less than 0.05.

According to ANOVA test and post hoc test, the researcher sees that working environment had the highest impact on the participants with 6-10 years of experience with a mean score (35.4) because those participants with daily task and work pressure achieved the task with decline in interest in suitable construction working environment. However, participants with years of experience from 2- 5 years were the best in this domains with a mean score (49.1) because those participants were newly recruited, also having fresh information about the construction of suitable working environment and they demand it from Paltel. These results are compatible with those of McLain and Jarrell (2007) which indicated that perceived compatibility of safety and production demands has a positive impact on safe work behaviour and reduced the intervention of safety hazards to performing their tasks. This is an additional benefit in case of compatibility with safe working

behaviour; therefore, such findings indicated that managers should pay attention to compatibility of safety.

According to ANOVA test and post hoc test, the researcher affirms that factors related to the company had the highest impact among participants with years of experience from 2-5 years. Therefore, the researcher notes that those participants, as mentioned above, were newly recruited, and Paltel Company is more concerned with experienced employees to achieve quality task. The participants with more than 10 years were the best in this domain with a mean score (78.4) because, as we noted, there was a relationship between years of experience and commitment to construction of safety and health among employees. Those participants with high positions in Paltel support the management in it. These results are consistent with those of Rosu et al. (2015) which mention that the role of employers is to adopt OSHA regulation regarding PPE. Employers have basic duties concerning the provision and use of PPE at work. On the other hand, anyone using PPE must be trained and instructed on how to use it properly and the employer must make sure they do this and anyone using PPE should be aware of why it is needed, and the importance of using it in workplace.

Again, according to ANOVA test and post hoc test, the researcher believes that personal behaviour and practicing had a highest impact on the participants with 6-10 years of experience with a mean score (21.2) because they are as we noted that in the domains regarding working environment, had a decline in interest in suitable construction of their workplace. That reflected negatively on their personal behaviors and practicing. However, participants with more than 10 years of experience were the best with a mean score (53.0) because those participants were in high positions and were involved in decision-making. They were also the best in the domain (factors related to the company). This reflected positively on their personal behaviors and practicing. These results

are compatible with those of Amponsah-Tawaih and Adu (2016) which stated that management commitment to safety moderates the relationship between work pressure and safety behavior. When employees perceive safety communication, safety systems and get training to be positive, they seem to comply with safety rules and procedures than those voluntarily participate in safety activities.

Finally, according to ANOVA test and post hoc test, the researcher interpreted that information about work hazards had highest impact among participants more than 10 years of experience with a mean score (50.4) because those participants were not oriented towards information about the work hazards. On the other hand, the participants from 6-10 years were the best for this domain with a mean score (61.1) because those participants have information about the hazards in their workplace but with daily task and pressure of the work, they lack the interest in suitable safety construction in their work place. This leads to hazards in their personal behaviors and practicing as we noted in the above of the two domains (working environment and personal behaviors and practicing). These results are compatible with those of Kim et al. (2016) which observed traditional occupational diseases in the rapidly changing work environment, the incidence of occupational injuries and diseases associated with industrialization. Occupational injuries and diseases being minimal leads to increased interest in health and safety management systems.

Legal and institutional framework in Paltel company:

Procedures for the licensing of communications and information technology professions and mail from ministry of telecommunication company, To the legal entity responsible for the issuance or exemption of licenses under the Telecommunications Law.

Paltel have ISO 9000:2000 and ISO 14000 for protect the environment and have terms of safety and health professional for work condition. It has been working very hard to train

the company staff on all modern developments in their field and upgrade behavioural competencies and skills they need to accomplish their work. Therefore, it offers them many advantages, such as incentives, provident fund, social solidarity fund and health insurance for the employees and their families, and medical care fund in addition provide first aid box or more with its material in the workplace and the first aid box away from any source of danger, fire extinguishers, personal protection and prevention methods for workers from the work hazards and occupational diseases, and personal protective equipment to employees whose working outside office, and have medical periodical medical examination of workers.

Finally, when we compare our results with legal and institutional framework in Paltel Company we noted that many employees had ignored safety behaviors and ergonomics.

Chapter 5: Conclusion and recommendations

5.1 Conclusion

This study is conducted for socio-demographic characteristics of Paltel employees and the work-related risks. In addition, the study explored the relationship between demographic variables and study domains (working environment, factors related to the company, personal behaviors and practicing, and information about work hazards) and the prevalence of risk. The main results indicated that working environment (physical hazards) more than half of employees use suitable computers in their work. Also almost all employees are working inside office and outside office are satisfied with furniture design. For lighting, more than half of employees were satisfied with lighting while the majority of employees complain about noise and it affected their work. On the other hand, employees believed that ventilation was adequate. Nearly two-thirds of employees had enough time to take rest at work while more than half of them said that the rest was not enough in comparison with working hours. In addition, rest place was not healthy and was unsuitable and the participants did not have enough time at lunch break. Furthermore, more than half did not carry heavy supportive tools and nearly all of them did not extra muscles effort during working hours. While the work assignment required more energy in work pressure and tasks that require extra hours to be achieved.

Regarding organization hazards, we noted that almost all employees had safety prevention procedures and mostly in the form of instructions. However, these were not apparent in the all company sites, and more than half of them were trained for using safety and prevention tools. The tools provided were suitable for requirement for safety and prevention

procedures. On the other side, less than half of employees had not special supervisors for safety and health. Besides, most employees are satisfied for being informed about any communicable diseases during epidemics. As well as, the company polices and safety procedures commensurate with the needs of the employees and periodical examination. The company provided to itsemployees with suitable tools for prevention procedures to avoid the hazards in their work.

Regarding personal hazards and practicing, less than a quarter of the employees were smokers and they smoked during working hours and half of them did not consider the prevention and safety procedures during smoking. A small percentage of the employees practiced sports. In addition, fewer employees had a chronic disease of some sort mainly being hypertension. Approximately, 70% of employees had not information about professional and health safety services. Besides, more than half of employees had not information about the work risk. In addition, fewer employees had training courses to know how to deal with equipment safely at work. Also, staff members did not receive training in first aids, using fire extinguisher, and personal equipment. When it comes to office workers, they were not applying proper practice from sitting straight on the chair, using the mouse, keeping the distance from screen computer and adjustment to the weather factors during work hours. However, almost all employees reported to the company any risks they founditeasy to report and follow up by the company.

The last domain, prevalence rate, indicated a half percentage of participants suffered from sleeping disorders and it was related to the current work. Additionally, results showedthat the highest prevalence rate among employees was back pain, and the second prevalence rate were head and neck pain. The third prevalence rate was shoulders pain. In addition, more than half of the employees suffered from eye symptoms. When it comes to injuries during work hours, fewer employees received first aid, and the others received special

treatment and any medical attention whatsoever and health insurance covered working injuries.

This study provided empirical evidence about the relationship between study domains (working environment, factors related to the company, personal behaviors and practicing, and information about work hazards) and demographic variables of the participants. It is noteworthy; working environment (physical hazards) had differences with all demographic variables. It affected the employees related to different demographic variables (age from 30-39 years, gender since it had a stronger effect on males rather than females, education - diploma or less, commercial departments, field work and experience – 6-10 years) .

For the second domain, namely the factors related to the company, the results indicated there was a positive relationship between age group and their loyalty to safety and health procedures in Paltel Company. These had a more negative influence on females rather than males. They also had a higher impact on employees with bachelor degree and less experienced ones. On the other hand, type of work and technical departments did not record any effect on employees.

The third domain, personal behavior and practicing, had varying differences on the five of demographic variables. Firstly, employees aged from 30-39 years were affected negatively. Secondly, bachelor employees were highly influenced. Thirdly, technical department occupied the highest percentage, and so did the field of employees and those with 6-10 years' experience. However, concerning gender no effect was recorded.

For the last domain, information about work hazards had the highest impact on three demographic variables related to employees who are; aged more than 45 years, experienced more than 10 years and those who were at office. On the other side, no significant effect was observed related to gender, education, and department.

Finally, working environment and personal behavior and practicing had the highest impact on workplace at Paltel Company.

5.2 Recommendations

Based on the study analysis, results and conclusions, following recommendations are suggested:

- 1- Establishment of work environment monitoring system and related follow up programs.
- 2- Implementation of continuous training courses and programs to employees for safety and health procedures at work.
- 3- Creation of national guidelines for occupational safety and health.
- 4- Training supervisors to identify and early intervene to prevent the ergonomics disorders.
- 5- Enhancement of safety and health culture among employees and highlighting how these reflect on their performance.
- 6- Encouraging employees for practicing sports to be healthier.

5.3 Recommendation for further research

- 1- Future studies should be conducted to compare the results of this study with other researches in the West bank branches.
- 2- A research about causes and differences of sick leaves among employees of Patel Company.

References

- Al-Refaie, A. (2013). Factors affect companies' safety performance in Jordan using structural equation modelling. *Safety science*, 57, 169-178.
- Amponsah-Tawaih, K. and Adu, M. (2016). Work Pressure and Safety Behaviours among Health Workers in Ghana: The Moderating Role of Management Commitment to Safety. *Safety and health at work*, 7(4), 340-346.
- Arvidsson, I. (2008). *Musculoskeletal disorders in demanding computer work-with air traffic control as a model* (Vol. 2008, No. 28). Department of Laboratory Medicine, Lund University.
- Aydeniz, A. and Gürsoy, S. (2008). "Upper extremity musculoskeletal disorders among computer users." *Turkish journal of medical sciences*, 38(3), 235-238.
- Bhandari, D. Choudhary, S. Parmar, L. and Doshi, V. (2007). Influence of psychosocial workplace factors on occurrence of musculoskeletal discomfort in computer operators. *Indian journal of community medicine*, 32(3), 225.
- Bohle, P. Willaby, H. Quinlan, M. and McNamara, M. (2011). Flexible work in call centres: Working hours, work-life conflict & health. *Applied ergonomics*, 42(2), 219-224.
- Cantley, L. Taiwo, O. Galusha, D. Barbour, R. Slade, M. Tessier-Sherman, B. and Cullen, M. (2014). Effect of systematic ergonomic hazard identification and control implementation on musculoskeletal disorder and injury risk. *Scandinavian journal of work, environment & health*, 40(1), 57.
- Chu, C. Breucker, G. Harris, N. Stitzel, A. Gan, X. Gu, X. and Dwyer, S. (2000). Health-promoting workplaces—international settings development. *Health promotion international*, 15(2), 155-167.
- Clemes, S. O'Connell, S. and Edwardson, C. (2014). Office workers' objectively measured sedentary behavior and physical activity during and outside working hours. *Journal of occupational and environmental medicine*, 56(3), 298-303.
- de Looze, M. Vink, P. Koningsveld, E. Kuijt-Evers, L. and Van Rhijin, G. (2010). Cost – effectiveness of ergonomic interventions in production. *Human Factors and Ergonomics in Manufacturing & service industries*, 20(4), 36-323.
- de Robles, D. and Kramer, S. (2017). Improving Indoor Air Quality through the Use of Ultraviolet Technology in Commercial Buildings. *Procedia Engineering*, 196, 888-894.
- Ekman, A. Andersson, A. Hagberg, M. and Hjelm, E. (2000). Gender differences in musculoskeletal health of computer and mouse users in the Swedish workforce. *Occupational Medicine*, 50(8), 608-613.

- Epstein, D., Avrahami, D., and Biehl, J. (2016). Taking 5: Work-breaks, productivity, and opportunities for personal informatics for knowledge workers. In *Proceedings of the 2016, CHI Conference on Human Factors in Computing Systems*.
- Friend, M. and Koh, J. (2014). *Fundamentals of occupational safety and health*. Bernan Press.
- Goggins, R., Spielholz, P. and Nothstein, G. (2008). Estimating the effectiveness of ergonomics interventions through case studies: Implications for predictive cost-benefit analysis. *Journal of Safety Research*, 39(3), 339-344.
- Goldenhar, L., LaMontagne, A., Katz, T., Heaney, C. and Landsbergis, P. (2001). The intervention research process in occupational safety and health: an overview from the National Occupational Research Agenda Intervention Effectiveness Research team. *Journal of occupational and environmental medicine*, 43(7), 616-622.
- Gyi, D., Sang, K. and Haslam, C. (2013). Participatory ergonomics: co-developing interventions to reduce the risk of musculoskeletal symptoms in business drivers. *Ergonomics*, 56(1), 45-58.
- Hignett, S., Wilson, J. and Morris, W. (2005). Finding ergonomic solutions-participatory approaches. *Occupational Medicine*, 55(3), 200-207.
- Hohnen, P. and Hasle, P. (2011). Making work environment auditable—A ‘critical case’ study of certified occupational health and safety management systems in Denmark. *Safety Science*, 49(7), 1022-1029.
- Hogan, D. (2017). Musculoskeletal symptoms in self-employed versus employed therapists: the role of training and social support.
- Huang, G. and Feuerstein, M. (2004). Identifying work organization targets for a work-related musculoskeletal symptom prevention program. *Journal of occupational rehabilitation*, 14(1), 13-30.
- Ijmker, S., Huysmans, M., Blatter, B., Van der Beek, A., Van Mechelen, W. and Bongers, P. (2006). Should office workers spend fewer hours at their computer? A systematic review of the literature. *Occupational and Environmental Medicine*.
- Kaewthummanukul, T. and Brown, K. (2006). Determinants of employee participation in physical activity: critical review of the literature. *Aaohn Journal*, 54(6), 249-261.
- Kaynak, R., Toklu, A., Elci, M., and Toklu, I. (2016). Effects of Occupational Health and Safety Practices on Organizational Commitment, Work Alienation, and Job Performance: Using the PLS-SEM Approach. *International Journal of Business and Management*, 11(5), 146.
- Kim, Y., Park, J., Park, M. (2016) Creating a culture of prevention in occupational safety and health practice. *Safety and health at work*. 7(2), 89-96.

- Kroemer, A. and Kroemer, K. (2016). *Office Ergonomics: Ease and Efficiency at Work*. CRC Press.
- Landsbergis, P. (2003). The changing organization of work and the safety and health of working people: a commentary. *Journal of occupational and environmental medicine*, 45(1), 61-72.
- Lebeau, M. Duguay, P. and Boucher, A. (2014). Costs of occupational injuries and diseases in Québec. *Journal of safety research*, 50, 89-98.
- Leigh, J. (2011). Economic burden of occupational injury and illness in the United States. *The Milbank Quarterly*, 89(4), 728-772.
- Lewis, R. Fogleman, M. Deeb, J. Crandall, E. and Agopsowicz, D. (2001). Effectiveness of a VDT ergonomics-training program. *International Journal of Industrial Ergonomics*, 27(2), 119-131.
- Lindgård, A. Wahlström, J. Hagberg, M. Vilhelmsson, R. Toomingas, A. and Tornqvist, E. (2012). Perceived exertion, comfort and working technique in professional computer users and associations with the incidence of neck and upper extremity symptoms. *BMC musculoskeletal disorders*, 13(1), 38.
- Lis, A. Black, K. Korn, H. and Nordin, M. (2007). Association between sitting and occupational LBP. *European Spine Journal*, 16(2), 283-298.
- Looze, M. Vink, P. Koningsveld, E. Kuijt-Evers, L. and Van Rhijn, G. (2010). Cost-effectiveness of ergonomic interventions in production. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 20(4), 316-323.
- Mastrangelo, G. Perticaroli, S. Camipo, G. Priolo, G. Leva, A. de Merich, D., ... and Marchiori, L. (2008). Working and health conditions and preventive measures in a random sample of 5000 workers in the Veneto Region examined by telephone interview. *La Medicina del lavoro*, 99, 9-30.
- McLain, D. and Jarrell, K. (2007). The perceived compatibility of safety and production expectations in hazardous occupations. *Journal of safety Research*, 38(3), 299-309.
- Meir, A. (2016). Rural Arab Demography and Early Jewish Settlement in Palestine: Distribution and Population Density during the Late Ottoman and Early Mandate Periods, by David Grossman. *New Brunswick, NJ: Transaction Publishers, 2010*. Paper presented at the Geography Research Forum.
- Michishita, R. Jiang, Y. Ariyoshi, D. Yoshida, M. Moriyama, H. Obata, Y., and Yamato, H. (2017). The Introduction of an Active Rest Program by Workplace Units Improved the Workplace Vigor and Presenteeism Among Workers. *Journal of occupational and environmental medicine*, 59(12), 1140-1147.

- Mohammadfam, I. Kamalinia, M. Momeni, M. Golmohammadi, R. Hamidi, Y. and Soltanian, A. (2017). Evaluation of the quality of occupational health and safety management systems based on key performance indicators in certified organizations. *Safety and health at work*, 8(2), 156-161.
- Morse, M.Kros, J. and Scott Nadler, S. (2009). A decision model for the analysis of ergonomic investments. *International Journal of Production Research*, 47(21), 6109-6128.
- Muthukumar, K. Sankaransamy, K. and Ganguli, A. (2014). Analysis of frequency, intensity, and interference of discomfort in computerized numeric control machine operations. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 24(2), 131-138.
- Niu, S. (2010). Ergonomics and occupational safety and health: An ILO perspective. *Applied ergonomics*, 41(6), 744-753.
- Oxenburgh, M. and Marlow, P. (2005). The Productivity Assessment Tool: Computer-based cost benefit analysis model for the economic assessment of occupational health and safety interventions in the workplace. *Journal of safety research*, 36(3), 209-214.
- Paltel (2015). Paltel Group Annual Report. Ramallah . Palestine.
- Paltel, P. T. C. (2017). Web Page Of Paltel from <http://www.Paltel.Ps>.
- Palestinian Central Bureau of Statics, (2016). Census Semi Final Results In Gaza Strip, Palestinian.
- Palestinian Labor act (2004), Ministry of labor, Palestine.
- Priolcar, X. (2012). First-aid at workplace-past, current and future. *Indian journal of occupational and environmental medicine*, 16(1), 1.
- Prussia, G. Brown, K. and Willis, P. (2003). Mental models of safety: do managers and employees see eye to eye?. *Journal of Safety Research*, 34(2), 143-156.
- Punnett, L. (2000). The costs of work-related musculoskeletal disorders in automotive manufacturing. *New Solutions: A Journal of Environmental and Occupational Health Policy*, 9(4), 403-426.
- Reese, C. (2008). *Industrial safety and health for administrative services*. CRC Press.
- Reinhold, K. Kalle, S. and Paju, J. (2014). Exposure to high or low frequency noise at workplaces: differences between assessment, health complaints and implementation of adequate personal protective equipment. *Agronomy research*, 12(3), 895-906.

- Robertson, M. Amick, B. DeRango, K. Rooney, T. Bazzani, L. Harrist, R. and Moore, A. (2009). The effects of an office ergonomics training and chair intervention on worker knowledge, behavior and musculoskeletal risk. *Applied ergonomics*, 40(1), 124-135.
- Robertson, M. Ciriello, V. and Garabet, A. (2013). Office ergonomics training and a sit-stand workstation: Effects on musculoskeletal and visual symptoms and performance of office workers. *Applied ergonomics*, 44(1), 73-85.
- Rogers, Y. Sharp, H. Preece, J. and Tepper, M. (2007). Interaction design: beyond human-computer interaction. *netWorker: The Craft of Network Computing*, 11(4), 34.
- Rosu, S. Rosu, L. Dragoi, G. and Bujorel Pavaloiu, I. (2015). RISK ASSESSMENT OF WORK ACCIDENTS DURING THE INSTALLATION AND MAINTENANCE OF TELECOMMUNICATION NETWORKS. *Environmental Engineering & Management Journal (EEMJ)*, 14(9).
- Schmid, J. Jarczok, M. Sonntag, D. Herr, R. Fischer, J. and Schmidt, B. (2017). Associations Between Supportive Leadership Behaviour and the Costs of Absenteeism and Presenteeism: An Epidemiological and Economic Approach. *Journal of occupational and environmental medicine*, 59(2), 141-147.
- Shabbir, M. Rashid, S. Umar, B. Ahmad, A. and Ehsan, S. (2016). Frequency of neck and shoulder pain and use of adjustable computer workstation among bankers. *Pakistan journal of medical sciences*, 32(2), 423.
- Sharma, A. Khera, S. and Khandekar, J. (2006). Computer related health problems among information technology professionals in Delhi. *Indian journal of community medicine*, 31(1), 36.
- Sharp, H. Rogers, Y. and Preece, J. (2007). Interaction design: beyond human-computer interaction.
- Shikdar, A. and A-Kindi, M. (2007). Office Ergonomics: Deficiencies in computer Workstation Design. *International Journal of Occupational Safety and Ergonomics*, 13(2), 215-223. Doi:10.1080/10803548.2007.11076722.
- Smagowska, B. (2010). Noise at workplaces in the call centre. *Archives of Acoustics*, 35(2), 253-264.
- Suparna, K. Sharma, A. and Khandekar, J. (2005). Occupational health problems and role of ergonomics in information technology professionals in national capital region. *Indian Journal of Occupational and Environmental Medicine*, 9(3), 111.
- Talwar, R. Kapoor, R. Puri, K. Bansal, K. and Singh, S. (2009). A study of visual and musculoskeletal health disorders among computer professionals in NCR Delhi. *Indian journal of community medicine*, 34(4), 326.
- Wachter, J. and Yorio, P. (2014). A system of safety management practices and worker

engagement for reducing and preventing accidents: An empirical and theoretical investigation. *Accident Analysis & Prevention*, 68, 117-130.

World Health Organization (WHO, 2002). Occupational Health: A Manual For Primary Health Care Workers.

World Health Organization (WHO, 2010). Healthy Workplace Framework And Model: Background And Supporting Literature And Practices.

Wright, K. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-Mediated Communication*, 10(3), 00-00.

Zein, R. Halim, I. Azis, N. Saptari, A. and Kamat, S. (2015). A Survey on Working Postures among Malaysian Industrial Workers. *Procedia Manufacturing*, 2, 450-459.

Appendices

Annex (1)

Branches centre at Paltel Company in GG



Annex (2)

Study Activity Timetable

Activity	Duration	3/207	4	5	6	7	8	9	10	11	12	1/2018	2
Proposal writing	1 month												
Proposal defence month and approval	1 month												
Expert committee check for validity of instruments	1 month												
Pilot Study	2 weeks												
Modifications	2 weeks												
Data Collection	1 month												
Data Entry	2 months												
Data Analysis	3 months												
Research writing	3 months												

Annex 3: Online sample size calculator



What margin of error can you accept?

5% is a common choice

%

What confidence level do you need?

Typical choices are 90%, 95%, or 99%

%

What is the population size?

If you don't know, use 20000

What is the response distribution?

Leave this as 50%

%

Your recommended sample size is

199

The margin of error is the amount of error that you can tolerate. If 90% of respondents answer *yes*, while 10% answer *no*, you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55.

Lower margin of error requires a larger sample size.

The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer *yes* would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone.

Higher confidence level requires a larger sample size.

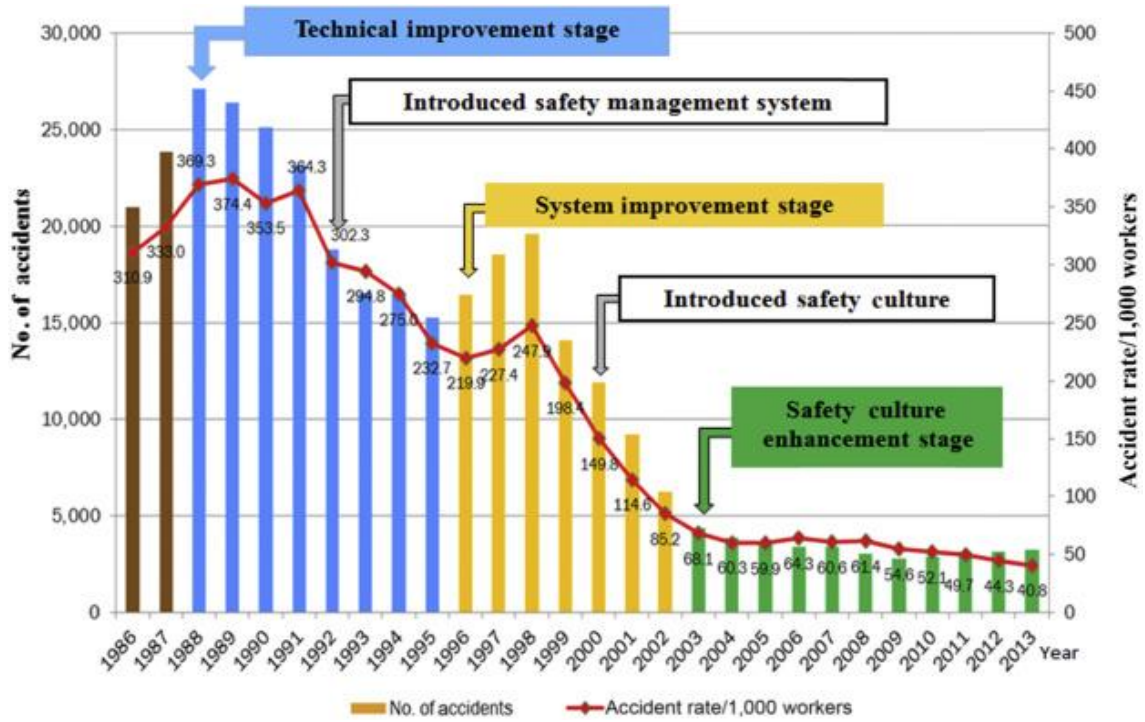
How many people are there to choose your random sample from? The sample size does not change much for populations larger than 20,000.

For each question, what do you expect the results will be? If the sample is skewed highly one-way or the other, the population probably is, too. If you do not know, use 50%, which gives the largest sample size. See below under **More information** if this is confusing.

This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large

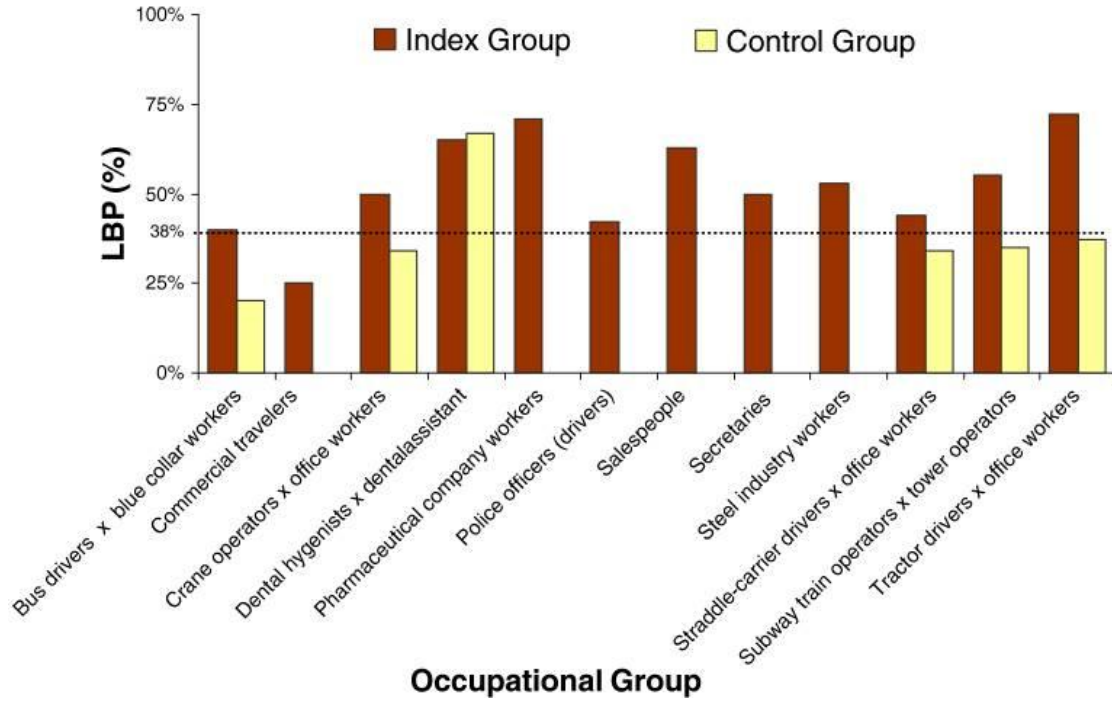
Annex No: 4

displays accident statistics over time in the construction industry in Hong Kong from 1986 to 2013



Annex No: 5

Annual Prevalence of LBP found in studies on occupations required to sit for more than half of work-time



Annex

:6



المجلس الفلسطيني للبحوث الصحي Palestinian Health Research Council

تعزيز النظام الصحي الفلسطيني من خلال مأسسة استخدام المعلومات البحثية في صنع القرار

Developing the Palestinian health system through institutionalizing the use of information in decision making

Helsinki Committee For Ethical Approval

Date: 2017/08/27

Number: PHRC/HC/261/17

Name: WAFAA A. HASSONAH

الاسم:

We would like to inform you that the committee had discussed the proposal of your study about:

نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:

Workplace Safety Hazards at Paltel Company in Gaza Governorate.

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/261/17 in its meeting on 2017/08/27

و قد قررت الموافقة على البحث المذكور عاليه بالرقم والتاريخ المذكوران عاليه

Signature

Member

Chairman

Member

General Conditions:-

1. Valid for 2 years from the date of approval.
2. It is necessary to notify the committee of any change in the approved study protocol.
3. The committee appreciates receiving a copy of your final research when completed.

Specific Conditions:-

E-Mail: pal.phrc@gmail.com

Gaza - Palestine

غزة - فلسطين
شارع النصر - مقترق العيون

Annex :7 Academic managerial and approval

Al-Quds University
Jerusalem
School of Public Health



جامعة القدس
القدس
كلية الصحة العامة
التاريخ 2017/9/16

حضرة / م. خليل أبو سليم المحترم
مدير عام شركة الاتصالات الفلسطينية
السلام عليكم ورحمة الله،،،

الموضوع: مساعدة الطالبة وفاء حسونة

نشكر لكم دعمكم الدائم لمسيرة العلم والتعليم ، ونود إعلامكم بأن الطالبة المذكورة أعلاه تقوم بعمل بحث كمتطلب للحصول على درجة الماجستير في الصحة العامة-مسار الإدارة الصحية عنوان:

Workplace Safety Hazards at PALTEL Company In Gaza Governorates

وعليه نرجو من سيادتكم التكرم بالموافقة على تسهيل مهمة الطالبة في إنجاز هذا البحث حيث تشمل عينة الدراسة الموظفين العاملين في شركة الاتصالات الفلسطينية والتابعة لإدارتكم الموقرة .

شاكرين لكم حسن تعاونكم ودعمكم للمسيرة التعليمية،،،
و اقبلوا فائق التحية و الاحترام،،،


د. بسام أبو حمدة
منسق عام برامج الصحة العامة
جامعة القدس - فرع غزة


نسخة: الملف

التاريخ 2017/9/5

حضرة / د. غادة أبو نحلة المحترم

Jerusalem Branch/Telefax 02-2799234
Gaza Branch/Telefax 08-2644220 -2644210
P.O. box 51000 Jerusalem

فرع القدس / تلفاكس 02-2799234
فرع غزة / تلفاكس 08-2644220-2644210
ص.ب. 51000 القدس

Annex :8

Email form Academic and managerial approval

From: WafaaHasouneh
Sent: Tuesday, September 26, 2017 8:40 AM
To: WafaAlZaiem<wafa.zaiem@Paltel.ps>; Mahmoud Qumsan<Mahmoud.Qumsan@paltel.ps>; HusamZaqut<Husam.Zaqut@paltel.ps>; RaedaAlKhaldi<raeda.khaldi@Paltel.ps>
Subject: FW: FW: رابط الإستبانة

السلام عليكم
زملاني الأعزاء رابط الإستبانة المرفق
يرجى تعبئته ولكم جزيل الشكر والامتنان
عبر الجوال يتم تعبئته والدخول علي احد الروابط ادناه
وفاء حسونه

استبانة حول امان ومخاطر العمل في بيئة العمل الخاصة بشركة الاتصالات الفلسطينية في قطاع غزة

التأكيد على تعبئة الاستبانة عبر الرابط ادنا
يتم فتح الرابط بشرط وجود الانترنت
ممکن الذي لا يستطيع عبر الت ابلأغى لكي ارسله له عبر ايميله الشخصي على الفيس بوك مثلا
وشكرا

From: HusamZaqut
Sent: Sunday, September 24, 2017 8:54 AM
To: SadiNassar<Sadi.Nassar@paltel.ps>
Cc: Mustafa Mhanna<mustafa.mhanna@Paltel.ps>; MazenSroor<mazen.sroor@Paltel.ps>; Shaker AbuAjwah<Shaker.AbuAjwah@paltel.ps>; ManalSkaik<manal.skaik@Paltel.ps>; WafaMousa<wafa.mousa@Paltel.ps>
Subject: FW: رابط الإستبانة

صباح الخير:

يرجى مساعدة الزميلة وفاء في تعميم الرابط على موظفيكم لتعبئة الاستبيان وسيتم أيضا تزويدكم بنسخ ورقة للموظفين
الذين لا يستطيعوا الدخول الى الرابط
نرجو مساعدتها و تعميمه على جميع موظفيكم
مع الشكر

استبانة حول امان ومخاطر العمل في بيئة العمل الخاصة بشركة الاتصالات الفلسطينية في قطاع غزة

استبانة حول امان ومخاطر العمل في بيئة العمل الخاصة
بشركة الاتصالات ...

تحية وبعد, أنا الباحثة/ وفاء احمد حسونه - أقوم بإجراء دراسة بعنوان: امان ومخاطر



Annex 9.

Workplace safety Hazards at Paltel Company in Gaza Governorates

تحية وبعد،

أنا الباحثة/ وفاء احمد حسونة -أقوم بإجراء دراسة بعنوان:

أمان ومخاطر العمل في بيئة العمل الخاصة بشركة بالتل في قطاع غزة

نرجو ملئ الاستبانة التي تبحث في أمان ومخاطر العمل في بيئة العمل الخاصة بشركة الاتصالات الفلسطينية في محافظات قطاع غزة، والتي تهدف لتحسين بيئة العمل وسلامة الموظفين وتقليل التكلفة التي تتحملها شركة الاتصالات من تكاليف التأمين الصحي وزيادة الإنتاجية.

مع العلم هي متطلب للحصول على درجة الماجستير في الصحة العامة مسار الإدارة الصحية من جامعة القدس -ابوديس.

اتطلع لمشاركتكم في اتمام هذه الدراسة ولن يترتب على مشاركتكم فيها أي التزامات أكثر من الوقت اللازم لتعبئة الاستبيان، وستكون جميع المعلومات للغرض البحثي فقط.

ملاحظة: -

غير مطلوب كتابه اسم المشارك في الاستبانة

شاكرين حسن تعاونكم،

الباحثة

وفاء حسونة

0592220758

Annex 10

Self –Administered Questionnaire (Arabic Copy)

أولاً: -المعلومات الشخصية:

1- العمر بالسنوات						
2- الجنس: <input type="checkbox"/> ذكر <input type="checkbox"/> أنثى						
3- الحالة الاجتماعية: <input type="checkbox"/> متزوج/ة <input type="checkbox"/> غير متزوج/ة <input type="checkbox"/> أرمل <input type="checkbox"/> مطلق						
4- سنوات التعليم: <input type="checkbox"/> ثانوية عامة <input type="checkbox"/> دبلوم <input type="checkbox"/> بكالوريوس <input type="checkbox"/> ماجستير <input type="checkbox"/> دكتوراه						
5- الدائرة التي تعمل بها: <input type="checkbox"/> تجارية <input type="checkbox"/> فنية <input type="checkbox"/> إدارية						
6- طبيعة العمل: <input type="checkbox"/> مكتبي <input type="checkbox"/> ميداني(خارج المكاتب)						
7- عدد سنوات خبره في العمل: <input type="checkbox"/> 2-5 سنوات <input type="checkbox"/> 6-10 سنوات <input type="checkbox"/> أكثر من 10 سنوات						

ثانياً: أنواع مخاطر العمل: -

1-بيئة العمل: -

لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	8- هل طبيعة عملك تتطلب العمل على أجهزة وأدوات مساعدة؟
أدوات مساعده في العمل لاجراء فحص وتركيب الهاتف والانترنت.	<input type="checkbox"/>	جهاز كمبيوتر/لابتوب	<input type="checkbox"/>	9-إذا كان الجواب نعم، حدد/ي
				* إذا كنت تعمل ميداني انتقل للسؤال رقم 12
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	10-إذا كنت تستخدم جهاز كمبيوتر/لابتوب هل هو مناسب للعمل؟

لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	11- إذا كنت تعمل مكتبي هل تصميم اثاث العمل مناسب لك؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	12- إذا كنت تستخدم أدوات مساعدة أخرى في العمل هل هي مناسبة للعمل؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	13- هل درجة الإضاءة في مكان العمل مناسبة لك؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	14- هل يوجد ضوضاء في مكان العمل؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	15- إذا كان الجواب نعم، هل درجة الضوضاء تؤثر على العمل؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	16- هل درجات التهوية مناسبة للعمل؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	17- هل يوجد وقت راحة كافيه اثناء العمل؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	18- إذا كان الجواب نعم، هل تكفي فترة الراحة مقابل عدد ساعات العمل؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	19- هل المكان الذي تقضي فيه فترة الراحة ملائم صحيا؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	20- هل يوجد مكان ملائم صحيا لكي تتناول/ي طعامك اثناء العمل؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	21- هل يوجد وقت كافي لكي تتناول/ي طعامك اثناء العمل؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	22- هل طبيعة العمل تتطلب منك حمل أدوات عمل مساعدة ثقيلة؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	23- إذا كان الجواب نعم، هل يؤدي حملك لأدوات العمل مشاكل صحية؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	24- هل طبيعة عملك تتطلب منك بذل جهد عضلي إضافي خلال ساعات الدوام؟
لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	25- هل تعتقد /ي بأن مهمات العمل التي تكلف/ي بها أكثر من طاقتك بالعمل؟

سبب آخر اذكر.....	<input type="checkbox"/>	بسبب ضغط العمل	<input type="checkbox"/>	بسبب نقص الخبرة والتدريب	<input type="checkbox"/>	بسبب نقص الامكانيات والبشرية	<input type="checkbox"/>	26-- إذا كان الجواب نعم، اختر/ي السبب.....
		أحيانا	<input type="checkbox"/>	لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	27- هل طبيعة عملك تتطلب منك العمل لساعات إضافية لتحقيق اهداف العمل؟

2- عوامل تتعلق بالشركة

				أحيانا	<input type="checkbox"/>	لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	28- هل يوجد لديكم إجراءات للسلامة والوقاية في العمل؟
غير ذلك حدد/ي.....	<input type="checkbox"/>	دورات	<input type="checkbox"/>	بروتوكولات متفق عليها	<input type="checkbox"/>	نشرات	<input type="checkbox"/>	تعليمات	<input type="checkbox"/>	29-- إذا كان الجواب نعم، حدد الاجراءات المتبعة:
						لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	30- هل التعليمات الخاصة بالسلامة والصحة المهنية ظاهرة ومعلقة في كل مقر من مقرات الشركة؟
						لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	31- هل تم تدريبك على استخدام أدوات السلامة والوقاية؟
						لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	32- هل الأدوات المستخدمة في مجال عملك تناسب متطلبات وإجراءات السلامة والوقاية؟
						لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	33- هل تظهر الشركة أي اهتمام نحو السلامة في العمل؟
						لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	34- هل يوجد مشرف للسلامة المهنية في الشركة؟
						لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	35- هل يتم ارسال نشرات توعيه عند انتشار وباء معين معدى؟
						لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	36- هل تراعي السياسات وإجراءات السلامة داخل الشركة حاجات الموظفين؟

أحيانا	<input type="checkbox"/>	لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	37- هل تقوم الشركة بعمل فحص طبي دوري للعاملين؟
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	38- هل مهام العمل اليومية متناسبة مع إجراءات السلامة الصحية؟
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	39- هل الشركة تفرض على الموظفين تنويع مهام العمل؟
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	40- هل يتم متابعة الموظفين من قبل مختصين للسلامة المهنية لمعرفة مدى تطبيق الموظفين لإجراءات وبروتوكولات السلامة الصحية والمهنية؟
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	41- هل توفر الشركة الاحتياطات والتدابير الملائمة للوقاية من اخطار الأدوات المستخدمة في العمل؟

3- السلوك الشخصي وممارسة إجراءات السلامة والوقاية من قبل الموظفين: -

		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	42- هل تدخن/ي؟ *إذا كان الجواب لا انتقل للسؤال رقم 46						
اكتر من 10	<input type="checkbox"/>	10-6	<input type="checkbox"/>	5-2	<input type="checkbox"/>	43- كم عدد السجائر التي تدخنها يوميا؟						
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	44- هل تدخن/ي أثناء العمل؟						
الى حد ما	<input type="checkbox"/>	لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	45- هل تراعي إجراءات السلامة والوقاية أثناء التدخين؟						
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	46- هل تمارس/ي الرياضة بشكل منتظم؟						
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	47- هل تعاني من أمراض مزمنة؟						
مرض	<input type="checkbox"/>	امراض	<input type="checkbox"/>	أزمة	<input type="checkbox"/>	سكري	<input type="checkbox"/>	ضغط	<input type="checkbox"/>	سكري	<input type="checkbox"/>	48- إذا كان الجواب

آخر انكراي	كلية	وضغط					نعم، اختار/ي نوع المرض؟
					لا	<input type="checkbox"/>	نعم <input type="checkbox"/> 49- هل لديك/ي معلومات عن السلامة والصحة المهنية وخدماتها؟
					لا	<input type="checkbox"/>	نعم <input type="checkbox"/> 50- هل لديك/ي معلومات عن مخاطر المهنة التي تعمل بها؟
					لا	<input type="checkbox"/>	نعم <input type="checkbox"/> 51- إذا كان الجواب نعم، هل تعرف/ي طرق الوقاية منها؟
					لا	<input type="checkbox"/>	نعم <input type="checkbox"/> 52- هل حصلت على دورات تدريبية حول استخدام الأجهزة لتأدية العمل بأمان؟
		أحيانا	<input type="checkbox"/>	لا	<input type="checkbox"/>	نعم <input type="checkbox"/>	53- هل تقوم بتطبيق نشرات التوعية وارشادات السلامة لتفادي مخاطر العمل؟
					لا	<input type="checkbox"/>	نعم <input type="checkbox"/> 54- هل تلقيت أي تدريب على مهارات الإسعافات الأولية؟
					لا	<input type="checkbox"/>	نعم <input type="checkbox"/> 55- هل يتوفر في مكان العمل وسائل الإسعاف الطبي المزودة بمتطلبات الإسعاف الصالحة للاستعمال؟
					لا	<input type="checkbox"/>	نعم <input type="checkbox"/> 56- هل تلقيت أي تدريب على استعمال طفاية الحريق؟
					لا	<input type="checkbox"/>	نعم <input type="checkbox"/> 57- هل تقوم باستخدام معدات الوقاية الشخصية باستمرار اثناء ساعات العمل؟
					لا	<input type="checkbox"/>	نعم <input type="checkbox"/> 58- إذا كنت تعمل مكتبي هل تطبق/ي الممارسات الصحيحة من حيث الجلوس الصحيح على الكرسي؟

					* إذا كان مجال عملك ميداني انتقل للسؤال رقم 62
	لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	59- هل تطبق الممارسات الصحيحة من حيث استخدام الماوس؟
	لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	60- هل تطبق الممارسات الصحيحة من حيث اتجاه النظر ومسافة البعد عن شاشة جهاز الكمبيوتر؟
أحيانا	<input type="checkbox"/>	لا	نعم	<input type="checkbox"/>	61- اذا كنت تعمل مكتبي، هل تطبق/ي الممارسات الصحيحة من حيث ضبط العوامل الجوية؟
أحيانا	<input type="checkbox"/>	لا	نعم	<input type="checkbox"/>	62- إذا كنت تعمل ميداني، هل تطبق الممارسات الصحيحة في حمل الأدوات المساعدة في إجراءات العمل؟
أحيانا	<input type="checkbox"/>	لا	نعم	<input type="checkbox"/>	63- هل تقوم/ي بإبلاغ الشركة عن أي خطر قد يحدث أو حدث في مقراتها؟
	لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	64- إذا كانت الإجابة نعم، هل يتم التبليغ عن الخطر بسهولة؟
	لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	65- هل يوجد متابعة حول الخطر الذي تم التبليغ عنه؟

ثالثاً: معلومات التعرض لمخاطر المهنة

	لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	66- هل تقوم /ي بعد
--	----	--------------------------	-----	--------------------------	--------------------

					انتهاء ساعات الدوام الرسمي بأنشطة تؤدي الى الاجهاد والاعياء؟	
أحيانا	<input type="checkbox"/>	لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	67- هل تعاني من عدم انتظام النوم بعد العمل؟
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	68- اذا كان الجواب نعم، هل تعتقد/ي ان سببه العمل الحالي؟
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	69- هل تعاني من أعراض مرضية بسبب العمل في الشركة؟
اذا كان لديك أي من هذه الاعراض املأ/ي القائمة بنعم/لا						
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	70- الرأس والرقبة
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	71- الأكتاف
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	72- الظهر
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	73- الأطراف العلوية
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	74- الأطراف السفلية
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	75- الحوض
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	76- هل تشكو من آلام في العين او مشاكل في النظر أو بعد العمل؟
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	77- هل حصلت على اجازة مرضية؟
		ثلاثة ايام فاكثر	<input type="checkbox"/>	يومان	<input type="checkbox"/>	78- إذا كان الجواب نعم، كم كان عدد الأيام؟
بسبب مرض عادي	<input type="checkbox"/>	بسبب مرض مهني	<input type="checkbox"/>	بسبب الاصابة	<input type="checkbox"/>	79- ماذا كان سبب الاجازة؟
لم أتلقى أي اجراء طبي	<input type="checkbox"/>	تلقيت/ي علاج من متخصص	<input type="checkbox"/>	تلقيت/ي اسعاف أولي في مكان العمل	<input type="checkbox"/>	80- إذا كنت تعرضت الى اصابة بسبب العمل، ماذا كان الاجراء المتخذ بعد الاصابة مباشرة؟
		لا	<input type="checkbox"/>	نعم	<input type="checkbox"/>	81- هل التأمين الصحي

				يغطي اصابات العمل؟
--	--	--	--	--------------------

Annex 11

Explanatory Letter (English Copy)

Workplace safety Hazards at Paltel Company in Gaza Governorates

Greetings,

I am the researcher Wafaa A. Hassonah. I am conducting a study entitled

Workplace safety Hazards at Paltel Company in Gaza Governorates

Kindly fill in the questionnaire related to the above-mentioned study, which aims at improving the working place environment, the safety of the employees and reducing the costs borne by the company in relation to health insurance aiming as well at increasing productivity.

The questionnaire is a requirement for receiving a master's degree in health management – health management track – ALQuds University.

I look forward to your participation to support the completion of the study. Your participation will not have any obligations more than giving a time to fill in the questionnaire. The information will be only used for research purposes.

Note: The name of the participant is not required

Thank you for your cooperation,

Researcher

Wafaa Hassonah

0592220758

Annex 12
Self –Administered Questionnaire (English copy)

First: Personal Information

1. Age:
2. Sex: Male <input type="checkbox"/> Female <input type="checkbox"/>
3. Marital Status: Married <input type="checkbox"/> not married <input type="checkbox"/> Divorced <input type="checkbox"/> Widow/widower
4. Education: High <input type="checkbox"/> school <input type="checkbox"/> Diploma <input type="checkbox"/> B.A <input type="checkbox"/> Master <input type="checkbox"/> PhD <input type="checkbox"/>
5. Department: Commercial <input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/>
6. Type of Work: Office <input type="checkbox"/> Field <input type="checkbox"/>
7. Years of Experience: 2-5 years <input type="checkbox"/> 6-10 years <input type="checkbox"/> 11 years and more <input type="checkbox"/>

Second: Type of Work Hazards

1. Physical Working Environment

8. Does your work need you to work on equipment and supportive tools?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
9. If the answer was Yes, define.....	<input type="checkbox"/> Computer/laptop
	<input type="checkbox"/> Supportive tools at work to help examine and install the phone and internet
If your work is a field work, move to question 12 10. If you use a computer/laptop, is it suitable for your work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
11. If you do office work, is the furniture design suitable for you?	<input type="checkbox"/> Yes

	<input type="checkbox"/> No
12. If you use other supportive tools at work, are they suitable for you?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
13. Is the light in your working environment suitable for you?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
	<input type="checkbox"/> To some extent
14. Is there noise in your working environment?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
	<input type="checkbox"/> To some extent
15. If the answer is yes, does this noise affect your work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
	<input type="checkbox"/> To some extent
16. Is the ventilation suitable for you at your working environment?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
	<input type="checkbox"/> To some extent
17. Is there enough time to rest at work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
18. If the answer is yes, is this rest enough in comparison with the working hours?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
19. Is your rest place healthy?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
20. Is there a suitable healthy place to eat your food at work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
21. Is there enough time to eat your food at work?	<input type="checkbox"/> Yes

	<input type="checkbox"/> No
22. Does the nature of your work require carrying heavy supportive tools?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
	<input type="checkbox"/> Sometimes
23. If the answer is yes, does carrying these tools cause health problems for you?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
24. Does the nature of your work require an extra muscle effort during the working hours?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
25. Do you think that your work assignments are more than your energy work?	<input type="checkbox"/> Yes

	<input type="checkbox"/> No
26. If the answer is yes, choose the reason.....	<input type="checkbox"/> Lack of material and human resources
	<input type="checkbox"/> Lack of experience and training
	<input type="checkbox"/> Work pressure
	<input type="checkbox"/> Any other reason to mention
27. Does the nature of your work require you to work extra hours to achieve the objective of your work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
	<input type="checkbox"/> Sometimes

2- Factors related to company

28. Do you have safety and prevention procedures at work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
	<input type="checkbox"/> Sometimes
29. If the answer is yes, define the followed procedures?	<input type="checkbox"/> Instructions
	<input type="checkbox"/> Leaflets

	<input type="checkbox"/> Agreed protocols
	<input type="checkbox"/> Courses
	<input type="checkbox"/> Others, define.....
30. Are instructions related to safety and professional health apparent in all the company's sites?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
Are you trained on using safety and prevention tools?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
Are the tools used in your work suitable for the requirements of safety and prevention procedures?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
33. Does the company show any interest in safety at work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
34. Do you have a professional safety supervisor in your company?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
35. Are there any awareness leaflets sent when there is a specific disease communicable?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
36. Does the company's policies and safety procedures taken into account the needs of the employees?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
Does the company conduct a periodical medical examination for the employees?	<input type="checkbox"/> Yes
	<input type="checkbox"/> NO
	<input type="checkbox"/> Sometimes
38. Are your daily tasks in conjunction with the health safety procedures?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
39. Does the company impose on the employees the variety of tasks?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No

40. Are there specialists in professional safety to follow up on the application of the health and professional safety protocols by the employees?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
41. Does the company provide suitable preventive procedures to avoid hazards by the tools used at work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> NO

3-Personal Behavior and Practicing Prevention Safety Procedures by the Employees?

Do you smoke?	<input type="checkbox"/> Yes
If the answer is No, go to question 46?	<input type="checkbox"/> No
43. How many cigarettes do you smoke a day?	<input type="checkbox"/> 2-5
	<input type="checkbox"/> 6-10
	<input type="checkbox"/> More than 10
44-Do you smoke at work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
45. Do you consider the prevention and safety procedures during smoking?	<input type="checkbox"/> Yes
	<input type="checkbox"/> NO
	<input type="checkbox"/> To some extent
46. Do you regularly practice sports?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
47. Do you suffer from chronic diseases?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
48. If the answer is Yes, select the disease.	<input type="checkbox"/> Diabetes
	<input type="checkbox"/> Blood presure
	<input type="checkbox"/> Diabetes and pressure
	<input type="checkbox"/> Asthma
	<input type="checkbox"/> Kidney diseaes

	<input type="checkbox"/> Any other diseases
49. Do you have information about any professional and health safety services?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
50. Do you have information about your work risks?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
51. If the answer is Yes, do you know the prevention procedures?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
52. If the answer is Yes, do you know the prevention procedures?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
53. Do you implement what is in the awareness leaflets to avoid risks at work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
54. Did you receive any first aid training?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
55. Do you have at work medical aid means suitable for usage?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
56. Did you have any training in using the fireextinguisher?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
57. Do you use personal prevention equipment continuously at work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
58. If you are doing office work, do you apply the correct practices for setting on the chair?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
If you have a field work, move to question 62	
Do you apply the correct practices when you use the mouse?	<input type="checkbox"/> Yes

	<input type="checkbox"/> No
60. Do you practice the correct practices related to vision, direction and distance from the computer screen?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
61. If you do office work, do you practice the correct practices in relation to weather factors adjustment?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
62. If you do the work, do you practice the correct practices in carrying the supportive tools at work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
63. Do you inform the company about any risk in any of its sites?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
64. If the answer is Yes, is it easy to report easily this risk?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
65. Is there any follow up on the risk reported?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No

Third: Information about Work Hazards

66. Do you practice any activities after the working hours causing fatigue?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
67. Do you have sleeping disorders after work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
	<input type="checkbox"/> Some times
68. If the answer is Yes, do you think it is related to your current work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
69. Do you have any disease symptoms because of your work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No

If you have any symptoms, fill in this list with Yes or No	
70. Head and neck	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
71. Shoulders	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
72. Back	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
73. Upper limbs	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
74. Lower limbs	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
75. Basins	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
76. Do you suffer from any pains in the eyes or any vision problems during or after work?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
77. Did you have any sick leave?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
78. If the answer is Yes, how many days?	<input type="checkbox"/> Two days
	<input type="checkbox"/> Three or more
79. What was the reason for the sick leave?	<input type="checkbox"/> Injury
	<input type="checkbox"/> Professional disease
	<input type="checkbox"/> Normal disease
80. If you had an injury at work, what were the procedures taken immediately after the injury?	<input type="checkbox"/> First aid
	<input type="checkbox"/> Special treatment

	<input type="checkbox"/> None
81. Does your health insurance cover work injuries?	<input type="checkbox"/> Yes
	No

Annex No:13

Names of experts

- ❖ Dr. Bassam Abu Hammad.
- ❖ Dr. Khitam Abu Hammad.
- ❖ Dr. Ali AlKhatib.
- ❖ Dr. Hussam Abu Shawish.
- ❖ Dr. Hatim Al Dabaka.
- ❖ Dr. Moatasim Salah.
- ❖ Dr. Ayman Al omari.
- ❖ Dr. RedwanBaroud.
- ❖ Mr. Mohammad Abdeen.

Annex 14