

Community Mental Health program  
Collage of Public Health  
Deanship of Graduate studies

**Effect of Trauma on Mental Health of Ambulance Drivers  
During Al -Aqsa Intifada**

**Student name : Ragheb Ali Abu laila**

**Registration No: 20111908**

**Supervisor: Dr. Abdel Aziz Mousa Thabet**

**Master thesis submitted and accepted, Date: 20/9/2003**

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

1- Dr. Abdel Aziz Mousa Thabet      Head of committee



Signature

2- Dr. Suzanne Shashaa              Internal Examiner



Signature

3- Dr. Mohammed J. Al-Khateeb      External Examiner



Signature

## Abstract

The present study is case control study conducted at emergency medical center in MoH, PRCS and UNRWA, control group from El-Nasser Pediatric Hospital, El-Nasser Psychiatric Hospital and Ophthalmic Hospital in Gaza strip – Palestine, in the year 2003. This study aims to determine the effect of trauma on mental health of ambulance drivers whom exposed for direct or indirect traumatic events during Al-Aqsa Intifada on 29<sup>th</sup> Sep, 2000 to 5<sup>th</sup> March, 2003. The study investigate the difference in the level of traumatic events among both groups, difference in the level of PTSD, difference in the level of depression, difference in the level of anxiety and difference in sociodemographic between both groups. A total of 227, there were 115 ambulance drivers, 112 control group were included in the study sample. The sample were collected from North, Gaza city, Med Zone, Khan Younis and Rafah. Data for this study was collected by using trauma check list, Davidson trauma Scale, Hopkins Symptoms check list and Beck Depression Inventory to determine the differences between two groups in traumatic events level, PTSD symptoms, Hscl-25, BDI-II was assessed by using chi square and T. test, to determine association between these methods health condition use Pearson Correlation Test. The result of study showed that both groups are complain from different level of traumatic events, PTSD symptoms, anxiety and depression according to HScI-25 and BDI-II level of traumatic events, ambulance drivers (M=16.22) there were complain from traumatic events more than control group (M=10.59) PTSD symptoms, ambulance drivers (M=15.39) there were complain from PTSD symptoms less than control group (M=17.58). HScI-25, depression subscale, ambulance drivers (M=7.99) complain from depression less than control group (M=11.49), anxiety subscale ambulance drivers (M=4.00) complain from anxiety less than control group (M=6.70), BDI-II to investigate depression symptoms, ambulance drivers (M=13.73) there were complain from depression less than control group (M=19.75). We conclude that stressful events related to the frequent Israeli military incursion were producing more psychological stresses. Both groups are affected by these stressful events that had impact on mental health condition, more research and study about the other life side of this group, psychological support and health education, training courses and social and financial support are important to enhance the ability of this group to continue their work in appropriate way.

## ملخص الدراسة

### تأثير الصدمة على الصحة النفسية لسائقي الإسعاف خلال فترة انتفاضة الأقصى

#### في قطاع غزة

تم إجراء هذه الدراسة في قطاع غزة - فلسطين 2002 - 2003 لمجموعة من سائقي الإسعاف العاملين بوزارة الصحة، الهلال الأحمر الفلسطيني، وكالة الغوث بالمقارنة مع عينة ضابطة من الإداريين و العمال العاملين في مستشفيات النصر للأطفال ومستشفى العيون ومستشفى الطب النفسي. الذين تعرضوا لمواقف صادمة بشكل مباشر أو غير مباشر لهذه الأحداث الصادمة خلال فترة انتفاضة الأقصى في الفترة ما بين 29 سبتمبر 2000 وحتى 3 مارس 2003 وهذه الدراسة فحصت العلاقة بين تعرض سائقي الإسعاف و المجموعة الضابطة للأحداث الصادمة وتأثير هذه الأحداث على الصحة النفسية لأفراد المجموعتين خلال فترة انتفاضة الأقصى.

بلغ عدد أفراد العينة من المجموعتين 227 فرد منهم 115 سائقي إسعاف و 112 من العينة الضابطة و تتراوح أعمار المجموعتين بين 18 - 68 سنة حيث تم أخذ جميع سائقي الإسعاف العاملين بوزارة الصحة ووكالة الغوث و الهلال الأحمر الفلسطيني، ولقد تم استخدام الأدوات التالية:

لجمع البيانات من أفراد المجموعتين مقياس الخبرة الصادمة لسائقي الإسعاف و مقياس أعراض ما بعد الصدمة و قائمة أعراض هوبكنز لقياس القلق والاكتئاب و مقياس بيك 2 لقياس الاكتئاب و قد تم استخدام Chi squar و اختبار "ت" و ارتباط بيرسون لمقارنة و تحديد الفروقات و معامل الارتباط بين أفراد المجموعتين.

كانت نتائج البيانات التي جمعت في هذه الدراسة على النحو التالي:

لقد تأثرت المجموعتين بدرجات متفاوتة بالنسبة للتعرض للأحداث الصادمة، أعراض ما بعد الصدمة، القلق والاكتئاب بالنسبة للتعرض للأحداث الصادمة كان سائقي الإسعاف أكثر عرضة لهذه الأحداث (م=16.22) من أفراد المجموعة الضابطة (م=10.59)، بالنسبة لأعراض ما بعد الصدمة كان سائقي الإسعاف (م=15.39) أقل عرضة لهذه الأعراض من أفراد العينة الضابطة (م=17.58)، بالنسبة لأعراض الاكتئاب حسب قائمة هوبكنز كان سائقي الإسعاف (م=7.99) أقل عرضة للاكتئاب من أفراد العينة الضابطة (م=11.49)، بالنسبة لأعراض القلق حسب قائمة هوبكنز كان سائقي الإسعاف (م=4.00) أقل عرضة للقلق من أفراد المجموعة الضابطة (م=6.70)، أعراض الاكتئاب حسب قائمة بيك الثانية كان سائق الإسعاف (م=13.73) أيضا أقل عرضة للاكتئاب من أفراد العينة الضابطة (م=19.75).

إن الأحداث الضاغطة والتي تعود إلى الاجتياحات المتكررة لقوات الاحتلال الإسرائيلي أدت إلى ظهور المزيد من الضغوطات النفسية، والتي قد أثرت على أفراد المجموعتين وقد كان هناك تأثير لهذه الضغوطات على الصحة النفسية لهم، لذلك هم بحاجة إلى المزيد من الأبحاث والدراسات حول نواحي الحياة الأخرى التي تحيط بأفراد هذه المجموعة، الدعم النفسي والتثقيف الصحي النفسي، الدورات التدريبية، مزيدا من الدعم المالي والاجتماعي المستمر لأفراد هذه المجموعة لتعزيز قدراتهم على البذل والعطاء والاستمرار في عملهم على أحسن وجه.

## Table of Contents

Dedication	I
Acknowledgment	II
English Abstract	III
Arabic Abstract	IV
Table of Content	V
List of Abbreviations	VIII
List of Tables	IX
List of Graphs	X
List of Annexes	XI
<b>Chapter 1 Introduction</b>	<b>1</b>
1.1 Overview	1
1.2 Purpose of the study	3
1.3 Research questions	3
1.4 Objectives	3
1.5 Justification of study	4
1.6 Geographical distribution	5
1.7 Palestinian economy	6
1.8 Demographic character	6
1.8.1 Population size and structure	6
1.8.2 Age and sex distribution	7
1.8.3 Distribution by refugee status	7
1.8.4 Population density	8
1.8.5 Dependency	8
1.8.6 Population	9
1.8.7 Life expectancy	9
1.9 Emergency medical services in Gaza Strip	9
1.9.1 Governmental sector	10
1.9.2 Palestinian Red Crescent Society	10
1.9.3 UNRWA health department	11
1.9.4 Military Medical Services	11
1.10 Martyrs and casualties in Palestine	11
1.10.1 Distribution martyrs and casualties in Palestine	12
1.10.2 Distribution martyrs and casualties by age Group	12
1.10.3 Distribution martyrs and casualties by gender	13
1.10.4 Monthly distribution of martyrs and casualties	14
1.10.5 Distribution of martyrs and casualties by site of injures and type of ammunition	14
1.10.6 Distribution by governorate	15
1.10.7 Distribution of martyrs and casualties untile July 8-2003	16
1.11 Violation of international humanitarian law by Israeli Authorities	16
1.11.1 Attacks on ambulance and medical teams	17
1.11.2 Delay of ambulance services	18
1.11.3 Number of people killed and delivers on check points	18
1.11.4 Targeting emergency and humanitarian workers	19
1.11.5 Collective punishment	19

1.11.6 Home demolition	20
1.11.7 Lack of safe passage for medical workers	21
<b>Chapter 2 Literature review</b>	22
2.1 Definition of PTSD	23
2.2 Etiology of PTSD	24
2.2.1 Stressors	24
2.2.2 Individual factors	24
2.2.3 Social factors	25
2.2.4 Psychological factors	26
2.2.5 Biological factors	27
2.3 Depression	28
2.3.1 Life events and depression	28
2.4 Prevalence of PTSD in Gaza Strip	29
2.5 Historical background about the stress and traumatic experience	30
<b>Chapter 3 Materials and methods</b>	42
3.1 Study design	42
3.2 The study population	42
3.3 Period of study	43
3.4 Setting of the study	43
3.4.1 Expose cases	43
3.4.2 Control cases	43
3.5 Sampling Method	44
3.5.1 Participating criteria	44
3.6 Pilot study	45
3.7 Ethical issue	45
3.8 Limitation of study	46
3.9 Materials of study	46
3.9.1 Face Validity	46
3.9.2 Beck Depression Inventory	47
3.9.3 Davidson Trauma Scale(DTS)	47
3.9.4 Hopkins Symptoms check list (HSCL_25)	48
3.9.5 Trauma check list	49
3.10 Data entry and analysis	49
<b>Chapter 4 Result</b>	51
4.1 Distribution of sociodemographic characters	52
4.1.1 Distribution number of both groups	54
4.2 Type of traumatic events in both groups	55
4.2.1 Description difference in traumatic events in both groups	57
4.3 Distribution of PTSD symptoms in both groups	59
4.3.1 Description difference of PTSD symptoms in both groups	61
4.4 Description HSCL-25 subscale for both groups	63
4.4.1 Description difference between case and non case HSCL-25	65
4.5 Discretion depression symptoms according to BDI-II for both groups	66
4.5.1 Level of depression among two groups according to BDI-II	68
4.6 Association between traumatic events , PTSD, HSCL-25 and BDI-II in both groups	69

4.6.1 Association between traumatic events , PTSD, HSCL-25 and BDI-II in ambulance drivers	69
4.6.2 Association between traumatic events PTSD, HSCL-25 and BDI-II in control group	71
<b>Chapter 5 Discussion</b>	73
<b>Chapter 6 Conclusion and recommendation</b>	80
6.1 Concluding remarks	80
6.2 Recommendations	81
6.3 Suggestion for further work	82
<b>References</b>	84
<b>Annexes</b>	88

# Chapter 1

## Introduction

### 1.1 Overview

The human being behavior, doing, thinking, feeling and physiology are affected by external world mainly who is the real world and internal world who is the perceive world . Also, this leads to disturbance to meet the five basic genetic needs, physiological needs for survival, and four psychological needs for belonging, power, freedom, and fun which is very important for each humane being in order to live and survive with complete respect for his right (Glasser, 1989) .

Wars and conflict by Israelian occupation, mainly during Al-Aqsa intifada 29, September 2000, which is considered the most critical conflicts in the history of (Palestinian – Israelian) conflict since 1948, in which all Palestinians are affected by it mainly children, aged people, adults, even trees and animals.

Ambulance drivers are part from Palestinian people who suffer from this war and conflict which occur during Al-Aqsa intifada 29, September 2000. They are in risk for physical, mental, psychological and social problem, in which consider from that they are highly exposed and contact with war events and conflict due to the nature of their work to

save their people life and to evacuate injured and Martyrs from conflict area during invasion of cities, villages, camps and near settlement.

During their work which is consider the core of human work to save the people life regardless about their race, sex, religion, and nationality. During this human work they are vulnerable to unusual and unexpected danger that is threatening their life such as shooting from gun-machine and tank fire. The danger of their work lead to injury and martyrdom. A large numbers of them are exposure for beating, stopping at check point for many hours, removing their clothes, check ambulance and delay for it, in which patient and injured people waiting inside ambulance. Their is many other traumatic events that challenge ambulance driver during their work . The traumatic events affect the mental health of ambulance driver, who are vulnerable to the killing, injured and to psychological stress without any protection from the Israeli occupation crimes, from any international organization as Humane Right Watch, International Red Cross and UNRWA, which, is mainly responsible to provide protection for civilian people and specially for medical team that provide care and safety to the peoples life .

Even though, the Israelian occupation are not stopped practicing their aggression towards the medical teams and the ambulance drivers. They are continued their work without fear and under the dangerous situation and even the inhuman circumstances. Killed 4 physicians( 3 Palestinian and

1 German), 14 Emergency Medical Team have been killed. Two hundred and fifty Emergency Medical Team had been injured through shooting and torture by Israeli soldiers and settlers (MoH, 2001).

## **1.2. Purpose of the study**

The purpose of this study is to determine the effect of trauma on mental health of ambulance drivers in comparison with control group from administrators and worker from hospital in Gaza Strip, during Al-Aqsa Intifada .

## **1.3 Research Questions:**

1. Is there difference in sociodemographic characters between the two groups?
2. What is the level of traumatic events between two groups ?
3. What is the difference in the level of PTSD between two group?
4. Is there difference in the level of anxiety and depression between the two groups ?

## **1.4 Objectives**

- 1.To determine the sociodemographic status between the two groups.
- 2.To compare level of traumatic events between two groups.
- 3.To compare level of PTSD between ambulance drivers and control group.

4. To compare anxiety level between ambulance drivers and control groups.
5. To compare depression status between two groups.

### **1.5 Justification and importance of study**

This study to determine the mental health ability of ambulance drivers during Al-Aqsa intifada. Ambulance drivers and medical team are vulnerable to the many traumatic events as shooting, attack on ambulance, beating and others violence. So it is very important to explore the level of this traumatic events and its effect on mental health status of ambulance drivers. The importance and justification of the study that is occur during my working, witnessing, feeling and complain during our work in emergency situation. Either their is no previous academic studies that were done about ambulance drivers trauma in Gaza Strip. So this study will be consider as source of information for the following study and research in the future.

## Chapter 6

### Conclusion and recommendations

#### 6.1 Concluding Remarks:

To conclude, our study indicate that exposed to stressful events related frequent incursion, military attack, killing, injuries, shelling, home demolition, attack by planes rocket, attack by tank's bombs, closure and curfew, waiting for long time at check points, attack on ambulance and medical team which lead to crashed and destroyed of ambulances, injury and killing of drivers and medical teams. Prevent ambulance to reach injured people and delay them to reach hospitals, which was produced more stresses in Palestinian people male, female, adults, children, professionals and non professionals, all Palestinians people are affected by this stressful events but, in different degree.

The study investigates the effect of traumatic events on mental health condition between two groups, (Traumatic events, PTSD, Anxiety and Depression). Using the following instruments:

- Trauma check list.
- Davidson scale for PTSD.
- HSCL – 25 subscale for depression and anxiety.
- BDI – II for depression.

Our result indicates that ambulance drivers are complained from traumatic events more than control group but, the last one complained from PTSD, depression and anxiety more than ambulance drivers.

The following will show the result among both groups:

Traumatic events: Drivers (81.1%), control (52.9%).

PTSD: Drivers (45.2%), control (51.7%).

HSCL – 25: Depression: Drivers (17.7%), control(25.5%)

HSCL – 25: Anxiety: Drivers (13.3%), control (22.3%).

BDI – II: drivers (21.8%), control (31.3%).

## **6.2 recommendations**

according to the results of the study which indicate that ambulance drivers are complained from PTSD, anxiety and depression less than control group but, they are still complain from those PTSD, depression and anxiety. So it should provide support and care for them and for control group who are more affected and they are working in our hospitals, so recommendation include the following.

Concluding more research and studies about physical and psychological status to determine this problem and solve it.

Provide social psychological and financial support for them to promote their financial situation.

Continuous health education programs and psychological support to deal with stressful situation.

Health education programs for citizens through medias, journals, schools, universities and mosques to enhance the role of ambulance drivers and medical team during emergency situation to facilitate their works.

Health education programs in first aids management and application in schools, universities and other organization to enhance commitment of citizen during emergency situation.

Continuous practical courses for ambulance drivers to increase and promote their ability.

Sharing teams of psychological and social workers to deal with citizen and medical teams during emergency situation.

Sharing team of physicians, nurse and first aid in each ambulance care to promote emergency service.

Enhance cooperation and coordination between different organizations that provide emergency medical services.

Increase number of ambulance drivers to decrease workload over them due to continuous attack and incursion beside regular emergency situation.

### **6.3 suggestion for further work**

I would like to suggest that similar studies should be conducted through Palestine in order to determine the size and reality of mental health condition among medical health team, that was affected by stressful situation.

Studies are needed to determine impact the work of medical health team at their family reaction and mental health condition, and effects of their family reaction at their works.

Studies are needed to determine effect of stressful situation at physical status of emergency medical teams (psychosomatic).