Needs assessment of impairments and disabilities amongst casualties suffered in the July-August 2006 hostilities in war-affected areas of Lebanon

For

World Health Organization

By

Nabil Kronfol MD, DrPH
Abla Sibai BSc (Pharm), MSc, PhD
Maguy Ghanem MPH
Ali Roumani MSc

December 2007

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

1.1 Impact of Wars on Civilians

Wars have been affecting humans' lives before recorded history. Back in prehistory, weapons were found buried with fighters and bones showed signs of wounds. Moreover, inscriptions from the earliest literate societies of the Middle East have recorded signs of triumphs (Holdstock in Taipale et al., 2002). More recently, wars have plagued several developing countries extending from South America to Asia. Whether across borders or internally, wars result in significant internal and regional instabilities, with effects being felt most severely on vulnerable populations. Over a period of 17 years starting in 1980, a total of 130 armed conflicts were documented worldwide, accounting for approximately 750,000 deaths in Africa, 150,000 in Latin America, 3,400,000 in Asia, and 800,000 in the Middle East, with civilians bearing the majority of the death toll (Toole and Waldman, 1997; Burnham, 2006). Following the end of the cold war in 1991, there was an increasing trend in the number of conflicts, with as many as 47 separate conflicts in 1993 alone, of which 43 were defined as internal conflicts.

The most important costs of war are human costs whether deaths, injuries or displacement. Wars and armed conflicts are increasingly targeting civilians resulting in high causality rates, human rights violations, and forced migrations and, in some countries, the collapse of governance (Burkle, 2006; Hutton, 2006). During the twentieth century, more than 100 million deaths were attributed to wars in which the percentage of civilian causalities increased by 90%. In addition, many millions of civilians died because of hunger or diseases that were caused by the destruction of infrastructure or by injuries occurring during their forced displacement from their homes (Sidel & Levy in Taipale et al., 2002).

During wars, mortality rates may be increased as much as 60 times from baseline (Brenan and Nandy, 2001). It has been estimated that approximately 50-90% of those suffering most from the consequences of violence and complex emergencies are civilian populations, the most vulnerable of whom are women, children, the elderly and the disabled (Brutton and Breen, 2002; Srinivasa and Lakshminarayana, 2006; Hutton, 2006). Civilian populations, who are socially or economically vulnerable, are also more susceptible to mental disorders and to physical ill-being with displacement and war stressors delaying recovery.

1.2 Impact of Wars on Health and the Health Care System

Wars impact adversely on public health and have often been linked to population displacement, food and water shortages and destruction of social and physical infrastructures (Brenan and Nandy, 2001; Bruton and Breen, 2002; Burkle, 2006). The World Health Organization (WHO) defines overall health during emergency situations not only in relation to disease but also in terms of ability to cope. It recognizes that complex emergencies present particular health issues affecting civilian populations with a focus on the necessity not only to promote the absence of disease or infirmity, but also to concentrate on the ability to maintain physical, mental and social well-being and to have the capacity to cope with life challenges (WHO, 2003).

War impacts on health in a variety of ways, ranging from direct injuries and deaths to indirect effects such as population displacement, decline in social services and disruption of medical and public health programs (Coupland, 1996; Toole & Waldman, 1993; Zwi & Uglade, 1989). In 2002, the number of death due to war were estimated at 172,000 deaths (WHO, 2004). Nevertheless, the number of casualties and injuries remain the most quantifiable consequences of wars. The chronic disabilities resulting from morbidity and injuries among the victims of wars are the single most daunting task for the families of the injured, their communities and Society as a whole. When assistance is provided to these victims, it is usually for a short period of time immediately following the injury. This leads to the deterioration of the disability, reduced work productivity and further burdens on a society already facing social disruptions and economic deterioration.

In conflict, the nature and severity of impairments and disabilities associated with the injury differ greatly from peacetime counterparts. Several factors may contribute to prognosis and outcome. Evacuation time, access to timely and adequate medical resources, and strategies adopted to treat a potentially large number of severely wounded cases in an often short period of time affect the medical management of the injured (Fosse, Husan & Giannou, 1988; Scott, 1988; Stong, Kalenian & Hope, 1993).

In addition to the direct negative consequences of war on health leading to disabilities and impairments, wars also affect the public health system whereby several hospitals, clinics and other health care facilities are destroyed during the war (Ghobarah, Huth & Russett, 2004). This in turn affects the accessibility of civilians in war-torn areas to medical care. Furthermore, wars have been shown to have long-term consequences on the health care system since the allocation of resources to the public health care system is greatly decreased in the aftermath of wars which reduces the amount of resources available for health care especially to those who were injured during the wars (Ghobarah, Huth & Russett, 2004). Hence, people injured during the wars will

be facing the consequences even in the aftermath as resources will not be allocated to their health care and their needs might not be fulfilled.

1.3 The Lebanon Wars

Lebanon is a country that has been ravaged by wars, civil atrocities and several Israeli invasions for over 3 decades (1975-2006). Beginning in 1975, civil disturbances and wars spanning over 15 years resulted in some one million people being displaced (out of a population of around 3 millions then), with at least 150,000 war-related deaths (5%), 200,000 to 360,000 wounded (6.7% to 12%), 210,000 serious injuries (7%), half of them left with lifetime disability, and around 17,400 missing and presumed dead (0.6%). (Sibai, 2007). Israeli incursions in the Southern regions of the country continued to the present, with one significant attack in 1996, known as the "Grapes of Wrath" Operation. During this 16-day attack, it is estimated that total human loss amounted to 162 dead and 338 injured, including 100 deaths reported by UNIFIL during the one-day Qana massacre of April 18th (Sibai et al., 1996). The conflict resulted in significant displacements and impairments to physical and mental health, including increased burden of disability, anxiety, depression among all age groups, with more severe effects on the vulnerable populations of adolescents, women and older adults (Karam, 1998, Sibai, 1996).

In July 2006, another war ravaged the country for 33 days. Some 80 vital bridges and almost 800-kms of main roads were destroyed. This made the transportation of displaced civilians, supplies, and medical assistance extremely difficult. The targeting of fuel supplies was evident. Petrol stations throughout the South were completely destroyed and vital fuel reservoirs were hit. The attack on the Jiyeh Oil Refinery tanks resulted in a 10,000-ton oil spill in the Mediterranean Sea contaminating 150 kilometres of coastline and resulting in fuel shortages all over the country. The airport was also shelled. Industry and production units including farms and factories were targeted seriously affecting the prospects for employment and economic production (Lebanon Under Siege,-29/8/2006)

Entire families were killed in their homes or while fleeing the air raids. The Higher Relief Council has put the overall death toll at around 1,100 - nearly all of them civilians - and over 5,000 wounded, one third of whom were children. Around 200,000 have been forced to leave the country. Two government hospitals were destroyed and several health and social centers were hit. Around 60% of the hospitals were forced to cease functioning due to the shortage of fuel and supplies. Relief efforts were delayed due to the damage to the infrastructure and to the continued hostilities. Convoys that attempted to get through the blockade (even with safe passage permits) suffered major casualties due to air raids. According to Zlatan

Milisic, World Food Program emergency co-coordinator in Lebanon, "…the aid operation was like a patient starved of oxygen facing paralysis, verging on death".

During the war, more than 1,100,000 Lebanese–representing over one quarter of the population, have been displaced out of their homes, half of them seeking shelter in the capital city Beirut. The displaced sought refuge in public schools, university buildings, public gardens and underground car parking. Obstacles to rescue were enormous. These included pressure on strained services due to the large number of internally-displaced people (IDPs), a disruption of regular basic health functions, damage to roads and bridges, shortages of fuel, drugs and medical supplies (Lebanon recovery plan, 2006). Results from MOPH health facility damage assessments in August revealed that destruction varied greatly across regions, with the most severe destruction noted in the regions of Tyre, Marjayoun, Nabatiyeh and Bint Jbeil, West Bekaa in South Lebanon and Akkar in the North. Between 50-70% of the primary health facilities in Nabatiyeh and Bint Jbeil were destroyed. Lack of water and inadequate sewage systems were reported in more than a quarter of health facilities in the war-affected areas. (Lebanon recovery plan, 2006). Extensive and serious assessment undertaken by the World Health Organization Relief operations substantiated the extent of this damage.

This study aims to assess the experiences and needs of non-fatal war injuries during the July 2006 war. Recognizing the needs of war casualties in the aftermath of crisis can help in developing appropriate strategies that assist in future disaster management while better addressing the needs of war victims.

CHAPTER 2

OBJECTIVES AND METHODS

2.1 Aims and Objectives

The overall objective of this study is to portray important facts and figures related to the consequences of the July war 2006 in Lebanon and to contribute to the advancement of knowledge on the long-term health and social needs of non-fatal injuries resultant of armed conflict.

The study constitutes a unique opportunity to examine the aftermaths of violence related to complex emergency. The findings of this study will help identify the type of injuries suffered principally by the civilian population, the management received during the hostilities and the long term needs for care and rehabilitation.

The specific objectives of the study are:

- To assess the burden of injuries and disabilities (ADL and physical functioning) amongst the non-fatal casualties suffered during the 33 days of the July 2006-war hostilities.
- To examine the management received at the time of the injury and associated costs.
- To examine the long-term impact of non-fatal war related injuries on the economy and social spheres as well as on the needs for care and rehabilitation
- To identify the needs of victims, in particular medical care, physical therapy and assistive devices and channel them to appropriate disaster management policies.

Recognizing the needs of non–fatal war casualties in the aftermath of crisis can help in developing appropriate strategies to assist the health and wellbeing of these victims. The study will provide the necessary data to construct a framework to guide policy and program methodologies to more effectively address the needs of war victims. In addition, a post disaster review is of utmost importance to improve many aspects of the disaster management for the future and to integrate lessons gained and experiences into national policies and plans.

2.2 Methods

The study was conducted in 2 phases: a preparatory phase which aimed to assemble the sampling frame for individuals injured during the July war 2006 and a second phase that consisted of an in-depth assessment of the severity and consequences of the injury in a sample of injured individuals.

2.2.1 Preparatory Phase

Preparation for the implementation of the study began months before the field work and included a wide search for the most credible data source on which to base the current survey. Comparison of the various available data sources indicated that not a single source by itself included a complete roster of the injured individuals during the July-2006 war. In fact, the dissimilarity of information between different sources may be attributed to the exceptional arrangements taken in any emergency situation.

In regular circumstances, the Ministry of Public Health covers the hospitalization of Lebanese citizens that have no health coverage in well identified hospitals on contract with the Ministry through a predefined hospitalization system. The admission approval of the Ministry is automated via a centralized online information system dubbed the "VISA System" (All regional visa issuing centers are connected online to the central system), and the billing process is automated through a local temporary information system called "Billing System".

During any unexpected national emergency that result in the need for immediate medical care and/ or hospitalization, the victims are treated on the expenses of the Lebanese Ministry of Public Health; these cases are entered in the Visa system on a separate roll and are hence classified for different management and analysis. This was the case of the July war 2006, when the Minister of Public Health proclaimed admission of war casualties to all hospitals on the account of the Ministry (decree 1/478). In parallel a "disaster center" control center was established at the Hariri University (Governmental) Hospital to follow up on the war casualties through a "crisis registry". These arrangements resulted in different data sources. The final data used for the in depth assessment was extracted from four different sources; the "crisis registry", the "visa" system, the Ministry billing system and through direct contact with hospitals to complete missing records. Consequently an extensive effort had to be devoted to investigate discrepancies and duplications across the sources and to input missing files. The data sources and data processing mechanism are detailed in the Annexes A and B.

Findings of the preparatory phase:

The above exercise led to the identification of a total of 2,548 cases admitted to 61 hospitals all over Lebanon with a higher concentration in the hospitals of South Lebanon (67%) (Table 2.1). The majority of the casualties were males 71% (n=1,806) versus 29% females (n= 742) with a mean age of 34 years (min= days, max= 106 years, SD= 19 years). Almost two thirds of the cases were adults (21-65 years). Those less than 15 years constituted 15 % of the injuries while older adults amounted to almost 9% of the total non fatal war casualties (Table 2.2). The majority of casualties were living in Tyre, Bint Jbeil and Baalbeck which were amongst the most embattled regions (Table 2.3). Findings also showed that most of the casualties were admitted to the districts' hospitals, which could be attributed to the damages to the roads during the conflict and the unremitting attacks. The hospitals in Tyre admitted 39 % of all war casualties (Table 2.4). Most of the cases were hospitalized for multiple injuries and many cases underwent several operations. The length of stay of injured people varied between 1 day and 106 days with an average length of stay of 3 days. (Table 2.5). However, many patients were admitted for weeks (Table 2. 6).

Table 2. 1- Distribution of admissions by hospitals

Name of Hospital	N	%
Jabal Amel Hospital- Tyre	583	23
Tyre Government Hospital	161	6.3
Najem Hospital	150	5.9
Hammoud Hospital	107	4.2
Hiram Hospital	98	3.8
Hariri University Hospital	95	3.7
Al Kharoubi Hospital- Sarafand	91	3.6
Dar Al Amal Teaching Hospital	90	3.5
Abdalla Hospital-Ryak	82	3.2
Ragheb Harb Hospital	76	3.0
Totals	**1,533**	**60.2**

Table 2.2- Distribution of war casualties by age

Age range	N	%*
0 years	16	0.6
1-3 years	50	2.0
4- 10 years	161	6.3
11-15 years	144	5.7
16-20 years	207	8.1
21-64 years	1453	57.0
65-84 years	196	7.7
>85 years	27	1.1
Totals	**2,254**	**88.5**

*Percentage do not add up to 100% because there are 294 missing cases

Table 2.3- Distribution of war casualties by place of residence

District	N	%
Tyre	677	26.6
Bint Jbeil	337	13.2
Baalbeck	331	13.0
Marjeyoun	206	8.1
Saida	167	6.6
Nabatieh	123	4.8
Zahle	110	4.3
Baabda	47	1.8
Hermel	45	1.8
Beirut	42	1.6
Totals	**2,085**	**81.8**

Table 2.4- Distribution of Hospitalized war casualties by districts

District	N	%
Tyre	992	38.9
Saida	391	15.3
Baalbeck	298	11.7
Zahle	201	7.9
Beirut	170	6.7
Nabatieh	135	5.3
Marjeyoun	98	3.8
West Bekaa	55	2.2
Bint Jbeil	44	1.7
Chouf	35	1.4
Totals	**2,419**	**94.9**

Table 2.5- Distribution of casualties by length of stay in days

Length of stay per day	N	%*
1 day	817	32.0
2 days	351	13.8
3 days	380	14.9
Totals	**1,548**	**60.7**

* Percentage do not add up to 100%; 351 missing record

Table 2.6- Distribution of casualties by length of stay in weeks

Length of stay per week	N	%*
Week 1	1892	74.3
Week 2	99	3.9
Week 3	17	0.7
Week 4	25	1.0
Week 5	15	0.5
Totals	**2,048**	**80.4**

*Percentage do not add up to 100%; 351 missing record

2.2.2- In depth assessment

The in-depth assessment aimed at examining the different type of injuries and disabilities in order to determine current and future needs of the non-fatal war victims.

A- Study sample:

The inclusion criteria for the study population were: injured cases during the month of the conflict, hospitalized for more than 24 hours, and aged 15 years and over. The exclusion of cases less than 15 years of age was dictated by the study objectives and is based on profound contextual differentials in the impact of the war-injury on study subjects among the young when compared with older adults. Owing to the strict security measures imposed on the Southern suburbs of Beirut and because of the wide dispersion of cases in the Bekaa region, it was not feasible in these two locations to access the injured at their area of residence. Hence, the sample was further restricted to cases from the South Governorate where the region was mostly affected by the war operations. The total number of cases reported in South and fulfilling the inclusion criteria totaled 877 injured persons with the highest concentration in Tyre (49%) and Bint Jbeil (25%) (Table 2.7).

Table2.7- Distribution of reported injured cases by district

District	Number of reported cases	%
Bint Jbeil	218	24.9
Hasbaya	15	1.7
Marjeyoun	85	9.7
Nabatieh	58	6.6
Rachaya	4	0.5
Saida	71	8.1
Tyre	426	48.6
Total	**877**	**100%**

The 877 were distributed across 160 villages with wide variations in the number of injured subjects across villages (range 1-88 cases). For this study, villages that hosted at least four cases were included in the final study sample frame. Consequently a list of 30 villages including 442 names of injured cases was drawn for the in-depth assessment. This selection covered all South districts except Rachaya where the number of injured people was undersized (only 4 persons). The distribution of targeted sample by village is presented in Annex C and by district in Table 2.8. In an emergency situation, registries may not be complete especially since profound discrepancies were identified with the multiple data sources noted above. Hence, field workers were instructed to screen the selected villages searching for additional cases not initially recorded in the provided lists.

Field workers were able to reach 43% of the casualties reported in the original sample list and an additional 16 (4%) cases were identified during the field work. Around 15% were unreachable and 3 persons (less than 1%) refused to participate in the study. On the other hand, approximately 11% of the names reported as war injuries were "unknown" to the community at their home towns and another 10 % were found not to be war-related injured cases (Table 2.9). The total number of completed interviews amounted to 204.

Table 2.8: Distribution of provided selected cases by district

District	n	%
Bint Jbeil	110	25.8%
Hasbaya	11	2.6%
Marjeyoun	45	10.5%
Nabatieh	28	6.6%
Saida	41	9.6%
Tyre	191	44.8%
Total	**426**	**100%**

Table 2.9: Injured cases selected for the in-depth assessment by result of interview and district

	Bint Jbeil		Hasbaya		Marjeyoun		Nabatieh		Saida		Tyre		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Interviewed	52	46.4	3	23.1	22	47.8	15	53.6	23	51.1	76	38.4	191	43.2
Added cases	2	1.8	2	15.4	1	2.2	0	0	4	8.9	7	3.5	16	3.6
Refusal	1	0.9	0	0	0	0	0	0	0	0	2	1.0	3	0.7
Not present at home	3	2.7	0	0	0	0	0	0	0	0	5	2.5	8	1.8
Resident elsewhere	5	4.5	1	7.7	2	4.3	2	7.1	0	0	4	2.0	14	3.2
Traveled	1	0.9	0	0	5	10.9	0	0	0	0	2	1.0	8	1.8
Deaths	3	2.7	0	0	0	0	2	7.1	1	2.2	2	1.0	8	1.8
Duplicate name	14	12.5	1	7.7	2	4.3	1	3.6	0	0	11	5.6	29	6.6
Not war-related injury	10	8.9	5	38.5	11	23.9	1	3.6	4	8.9	17	8.6	48	10.9
Excluded cases	0	0	0	0	0	0	2	7.1	0	0	0	0	2	0.5
Unreachable	1	0.9	0	0	2	4.3	1	3.6	9	20.0	55	27.8	68	15.4
Unknown	20	17.9	1	7.7	1	2.2	4	14.3	4	8.9	17	8.6	47	10.6
Total	**112**	**100.0**	**13**	**100.0**	**46**	**100.0**	**28**	**100.0**	**45**	**100.0**	**198**	**100.0**	**442**	**100.0**

- Unknown : Nobody from the village knows them and were not included in the village registries
- Resident elsewhere: Was not interviewed because the case was living elsewhere at the time of the field work
- Not war-related injury: The case was included erroneously as a war-related injury in the registry
- Duplicate name: Cases for same person reported more than once with different triple names
- Not present at home: Not interviewed because the injured was not available at home during the field work
- Added cases: Injured people that were revealed in the field and were not registered in any of the data sources of war injuries
- Excluded cases: Injured by mine after the war
- Unreachable: The field workers were not able to locate the exact address of the case, particularly in large cities

B- Instrument

An interview schedule was developed for the purpose of this study including the themes and concepts refined after pilot testing and feedback from the field workers (Annex C). The questionnaire consisted of a total of 83 questions targeting the following themes:

1. Demographic and socio- economic information
2. Health status, insurance coverage and self rated health
3. Behaviors including smoking status and amount of cigarette and /or narguile smoked.
4. Impact of the injury on work
5. Information about the injury itself and related hospitalization
6. Medical follow up and health coverage after injury
7. Impact of the injury on physical health: impairments and disabilities (physical functioning and Activities of Daily Living (ADL) Scale)
8. Deployment of assistive devices including current use, source of the assistive device(s) and need
9. Support/ assistance received after injury
10. Information about mental health (General Health Questions GHQ-12 scale)
11. Needs of the injured person (open-ended questions)

C- Recruitment and Training of Field workers

The field staff was recruited from experienced data collectors residing in the neighborhood of the areas selected in the sample. The advantage of this was the local knowledge of the communities and villages and less problematic access in relation to the local authorities. Instruction materials were prepared for data collection, and the interview schedule was closely revised and clarified with the data collection team. Prior to the field work, a pilot test was carried out in order to develop and tailor the questionnaire to local norms as well as to allow interviewers to become more familiar with the interview schedule.

D- Fieldwork Activities

Consultations by the field supervisor with various authorities, including the Mayors in the sampled villages, were of utmost importance to locate the listed injured people as well as to direct us to injured people not initially included in the original sampling frame. Data collection was conducted during the months of September and October, 2007.

CHAPTER 3

RESULTS

The study population comprised 204 injured persons mostly of Lebanese nationality (90%), with around two thirds being males (65%). Their mean age was 41 years old with the majority of the casualties being less than 45 years old (SD =18 years; min 15-max 92 years). These findings could be understood within displacement realities where women, children and seniors were encouraged to flee the conflict area.

The majority of the interviews (90%) were conducted with the injured themselves. Proxy respondents comprised mainly of the father/ mother (42%) or at times the brother/ sister (16%) and were in the majority females (70%).The mean age of the proxy was 47 years (SD= 15 y, range=22-75y). The reasons why an interview was conducted with a proxy was mostly related to fact that the injured was not at home (60%) during the interview. Additionally, 15% had communication problems, and hence, could not be interviewed, while 10% suffered serious physical disabilities and did not want to be interviewed (table 3.1).

3.1 Demographic and socio- economic characteristics of the studied population

Table 3.2 presents a comparison between males and females with respect to the demographic characteristics of the studied population. Differentials by gender reflect the characteristics of the baseline population at risk and indicate that injuries were more likely to be random events. While being single was equally observed among males and females (33%), the majority of the married injured persons were males (61% vs 49% females), and the majority of the widowed cases were females (18% vs 6% males).

The vast majority of the studied population had considerably low levels of educational attainment; only 18% reached secondary studies and 9% reached university level. Furthermore, illiteracy was noted among 15% of the population mainly among women (28% vs 8%). Subjects who were enrolled in school/university before the injury accounted for 7% of the entire sample and another 2% used to work while concurrently continuing their education. As expected, work status before injury significantly differed between the two

genders, with 79% of men working versus only 18% of women. Women were mostly non-working members of the household (63%).

Economic status was assessed subjectively as one's own perception of sufficiency of the income in meeting basic needs: approximately half of the population stated that their income was hardly sufficient, 30% said that their income was almost enough and 20% reported never being able to get what they need. The majority of the population study (86%) relied on wages of a family member and 7% have monthly aid from a governmental or charitable institution. On the other hand, almost two thirds of the injured resided in their owned houses while 22% inhabited rented homes. The average number of persons living at the same house was 5 persons (SD=2 persons).

3.2 Health Status and Coverage

The health status of the sampled population was examined subjectively through their own perception of health status, and objectively through self-reported medical history and smoking habits (Table 3.3). Only 7% of the interviewed perceived their health as being very good, while the majority reported their health as good or average (64%) and the remaining (29%) as bad. A similar trend was noted when respondents were asked to rate their health on a continuous scale based on percentages. Almost two thirds of the population did not have any type of health coverage, and those covered by any health insurance were mainly insured by the NSSF (72%). The remaining were covered by the cooperative of civil servants (11%), the army (8%) or through private insurance schemes (4%)

Hypertension topped the list of medical conditions in the study sample (14%). This was followed by cardiac diseases (10%), diabetes (7%) and dyslipidemic disorders (4%), with women reporting higher rates than men (Table 3.3). In contrast, smoking was almost 3 times more prevalent among men than women (54% vs 17%).The mean number of cigarette smoked was 27 cigarette per day (range 5-80; SD= 17 cigarettes) while that of narguile was 2 per week (range 1-4 SD=1.3)

3.3 Characteristics of the Injury

The casualties were examined for the main cause of injury, body parts affected, the place where the injury happened and its consequences and impact on the injured individual in terms of impairments, disabilities and social and economic sequelae. Table 3.4 presents the characteristics of the injury itself. While men were more likely to be injured by bomb

shrapnel's (82% vs 68%), women were more likely to be injured while being entrapped under rubbles (26% vs 11%). Additionally, 3% were directly hit by bullets and 2% were injured while trying to flee to safer places. Almost two thirds of the injuries took place in homes (62%) followed by those occurring on the road (26%). The place of injury revealed significant differentials by gender; injuries occurring in homes were more common among females (83% vs 51%) while those happening on roads mostly affected males (35% vs 8%).

The affected part of the body is perhaps of utmost importance as indicative of persons' needs and levels of impairment, disability and handicap. The majority of the injuries affected the lower and upper extremities (62% and 54% respectively) followed by injuries of the head (43%) and the back (41%). Almost all injuries resulted in wounds (95%) with half of the casualties stating rupture of a muscle or a limb. Furthermore, fractures were seen among 40% of the interviewed sample and this was more commonly reported among men (44% vs 33%). The injury resulted in persistent scars among 43% of the cases and 27 % reported external deformity. In addition, impairment was stated as partial in 33% of the injuries with a higher concentration among men than women (37% vs 25%). Total impairment was reported in 2.5% of the cases.

3.4 Characteristics of Hospitalization

Despite accessibility problems related to the damage of roads and continuous bombardment, almost two thirds of the injuries were transferred to the hospitals within 2 hours of the injury, distinctively 15% in less than one hour (Table 3.5). Around 60% of the injuries were transferred by a medical ambulance while almost 37% were transported using private cars. The average length of stay in a hospital was 18 days (SD= 30 days), but almost half the population (47%) were discharged from the hospital in less than a week. The medical/ surgical care provided could not be accurately reported by the injured themselves and medical records were mostly incomplete during the time of the crisis.

3.5 Disability Assessment

The disability status of all injured was assessed using the activities of daily living (ADL) scale (Table3.6). Almost one third of the casualties reported at least one difficulty in performing ADL with the majority reporting an ADL score between 1-6. Partial rather than complete disability was more prevalent for all activities and was mostly seen for difficulty in wearing clothes (27%) followed by difficulty in bathing and using toilets (equally 20%).

Availability and source of assistance was examined among those who need help in their daily activities (Table 3.7). Around 27% of the injured expressed the need for partial assistance in daily activities and 12% reported being totally dependent on external help. Assistance was mainly provided by family members mostly by spouses (46%) with females being over four times more likely to be assisting their husbands than males assisting their wives (68% vs 16%, respectively). Assistance was described as being partially available in 53% of the cases and available all the time in 44% of the cases.

3.6 Consequences to the Injury

The impact of injuries was examined across several aspects of the individual's life: mental and physical health as well as through changes in work status, social and daily activities (Table 3.8).

The GHQ-12 scale was used to assess current mental health status of the injured. Findings showed that around 78% of the sample had depressive feelings (GHQ score>=3) and this was more evident among women (87% vs 72%). Almost half of the injured expressed the need for health care services, especially medications and medical follow-up, while 22% required specialized physiotherapy services and 14% an assistive device such as a wheelchair, crutches, hearing device or artificial limb. The injury adversely impacted on income in 61% of the injured population with 17% requiring change in the type of work they used to do and 9% having modified the working hours. Furthermore, slightly less than half of the injured (46%) stopped work mainly because of the injury itself (37%) while the average monthly health cost related to the injury was estimated to be around 300,000LL (min 20,000-7,500,000LL). The injury impacted on the social life and daily activities in 57% and 43% of the samples respectively, and mainly among women.

The consequence of the injury was also assessed in terms of its impact on impairment, disability and/ or dependence. For this, we established the relation between the body parts affected and each of these outcomes, while adjusting for sex and age (Table 3.9).
Significant statistical associations with disability were noted for injuries to the pelvis and lower extremities (RR= 3.53, (95%CI= 1.66-7.51); and RR= 2.21 (95%CI=1.11-4.40), respectively). Additionally, injuries to the pelvis were associated significantly with dependence and the need for help in daily activities with an RR= 2.65 (95% CI= 1.03-6.85). None of the remaining associations were statistically significant.

3.7 Unmet Needs

The needs of an injured person in the aftermath of the injury vary not only due to the severity of the injury but also by the characteristics of the surrounding environment. An enabling and a supportive environment tends to cushion the decline in health and to lessen the impact of the injury and its needs. In this analysis the need for medical services, physiotherapy and /or assistive devices were examined in relation to the basic socio-demographic characteristics and the health related variables (Tables 3.10-3.11). There were no gender differentials by perceived need, however there was an overall significant trend in higher need with increasing age ($p=0.015$), among the widowed compared to married and the single, and among the illiterate compared to individuals with even few years of schooling ($p=0.032$). Similarly need was more evident among those who stated that their economy was never or was hardly satisfactory.

The need for medical services, physical therapy and assistive device was noted to be highest for those who perceived their health as very bad or who rated their health at the lowest 20^{th} percentile of health continuum.

The need for medical services was highly associated with the health insurance whereby around 79% of the injured who did not have any type of health coverage stated a need compared to 32% of those who had health coverage ($p< 0.001$). On the other hand, a significant association was found between subjects who suffered co-morbidity and need for assistive devices ($p= 0.001$). Similarly the need for assistive devices was noted for different levels of impairment ($p< 0.001$) and disabilities ($p= 0.001$).

Table 3.1-Baseline characteristics of the proxy interviewers

	n	%
Proxy interviewed		
Yes	20	9.8
No	184	90.2
Total	**204**	**100**
Sex of the proxy		
Female	14	70
Male	6	30
Relation to the injured		
Father/ Mother	8	42.1
Brother/ Sister	3	15.8
Son/Daughter	2	10.5
Son/Daughter in law	2	10.5
Others	5	21.1
Reasons for proxy interview		
Injured is not at home	12	60.0
Communication problems	3	15.0
Physical problems	2	10.0
Other reasons	3	15.0
Educational level of the proxy		
Illiterate	2	10.0
Read and write	4	20.0
Primary	4	20.0
Complementary	4	20.0
Secondary	3	15.0
University	3	15.0
Total	**20**	**100**

Table 3.2- Baseline demographic and socio-economic characteristics stratified by gender

	Male		Female		Total	
	n	%	n	%	n	%
Marital Status						
Married	81	61.4	35	48.6	116	56.9
Single/Never married	43	32.6	24	33.3	67	32.8
Widowed/ separated	8	6.0	13	18.1	21	10.3
Educational Level						
Illiterate	11	8.3	20	27.8	31	15.2
Read and write	4	3.0	3	4.2	7	3.4
Primary	37	28.0	11	15.3	48	23.5
Complementary	43	32.6	12	16.7	55	27.0
Secondary	20	15.2	16	22.2	36	17.6
University	11	8.3	7	9.7	18	8.8
Technical	6	4.5	3	4.2	9	4.4
Residence						
Own home	91	70.0	40	56.3	131	64.2
Rented home	27	20.8	18	25.4	45	22.4
Friends/Relatives' home	12	9.2	13	18.3	25	12.4
Number of persons living in the same house						
1- 3 persons	33	25.2	25	35.2	58	28.7
4- 6 persons	64	48.9	30	42.3	94	46.5
7- 10 persons	32	24.4	13	18.3	45	22.3
>10 persons	2	1.5	3	4.2	5	2.5
Occupation before injury						
Work	104	78.8	13	18.3	117	57.6
Nothing/ staying at home	15	11.4	45	63.4	60	29.6
Study	8	6.1	6	8.5	14	6.9
Work and study	3	2.3	1	1.4	4	2.0
Work with family	0	0	4	5.6	4	2.0
Economic status (income sufficiency)						
Never	21	16.0	15	21.1	36	17.8
Hardly	71	54.2	34	47.9	105	52.0
Almost	39	29.8	21	29.6	60	29.7
Most of the time	0	0	1	1.4	1	0.5

Sources of Income[†]						
Wage of a family member	113	85.6	63	87.5	176	86.3
Governmental aid	6	4.5	2	2.8	8	3.9
Charity	6	4.5	0	0	6	2.9
End of service indemnity	4	3.0	1	1.4	5	2.5
Political party	3	2.3	2	2.8	5	2.5
Family real state	4	3.0	1	1.4	5	2.5
Money in the bank	1	0.8	0	0	1	0.5
Fund from friends/relatives	1	0.8	0	0	1	0.5

[†] Items are not mutually exclusive

Table 3.3- Baseline health related characteristics stratified by gender

	Male		Female		Total	
	n	%	n	%	n	%
Own perception of Health						
Very bad	3	2.3	4	5.6	7	3.4
Bad	29	22.0	24	33.3	53	26.0
Average	37	28.0	21	29.2	58	28.4
Good	53	40.2	19	26.4	72	35.3
Very good	10	7.6	4	5.6	14	6.9
Rating of health in percent (zero being the worst)						
<20%	10	7.6	8	11.1	18	8.8
21-40%	30	22.7	22	30.6	52	25.5
41-60%	36	27.3	18	25.0	54	26.5
61-80%	28	21.2	15	20.8	43	21.1
>80%	28	21.2	9	12.5	37	18.1
History of Medical problems						
Hypertension	16	12.1	12	16.7	28	13.7
Cardiac diseases	12	9.1	9	12.5	21	10.3
Diabetes	8	6.1	7	9.7	15	7.4
Dyslipidemia	4	3.0	4	5.6	8	3.9
Others	5	3.7	4	5.6	9	4.3
Smoking Status						
Never smoked	53	40.2	60	83.3	113	55.4
Current Smoker	71	53.8	12	16.7	83	40.7
Ex- smoker	8	6.1	0	0	8	3.9
Health Coverage/ Insurance						
No	96	72.7	55	76.4	151	74.0
Yes	36	27.3	17	23.6	53	26.0
Type of Health Coverage*						
NSSF	26	72.2	12	70.6	38	71.7
Cooperative	4	11.1	2	11.8	6	11.3
Military (Army, ISF)	2	5.6	2	11.8	4	7.5
Private insurance	1	2.8	1	5.9	2	3.8
Other	3	8.4	0	0	3	5.7

* Among those covered by any type of health insurance

Table 3.4- Characteristics related to the Injury stratified by gender

	Male		Female		Total	
	n	%	n	%	n	%
Main cause for injury						
Bomb shrapnel	108	81.8	49	68.1	157	77.0
Entrapped under rubbles	15	11.4	19	26.4	34	16.7
Direct bullet	5	3.8	1	1.4	6	2.9
Injured while fleeing	1	0.8	3	4.2	4	2.0
Mine	2	1.5	0	0	2	1.0
Other reasons	1	0.8	0	0	1	0.5
Place of injury						
Home	66	50.8	60	83.3	126	62.4
Street	46	35.4	6	8.3	52	25.7
Work	9	6.9	1	1.4	10	5.0
Shelter (underground area)	4	3.1	5	6.9	9	4.5
Car	2	1.5	0	0	2	1.0
Others	3	2.3	0	0	3	1.5
Body part affected†						
Lower extremities	84	63.6	43	59.7	127	62.3
Upper extremities	68	51.5	43	59.7	111	54.4
Head	60	45.5	28	38.9	88	43.1
Back	52	39.4	31	43.1	83	40.7
Abdomen	38	28.8	19	26.4	57	27.9
Face	37	28.0	19	26.4	56	27.5
Chest	33	25.0	17	23.6	50	24.5
Pelvis	28	21.2	14	19.4	42	20.6
Neck	20	15.2	9	12.5	29	14.2
Eyes	11	8.3	5	6.9	16	7.8
Spinal cord	6	4.5	4	5.6	10	4.9
Type of Injury†						
Wound	126	95.5	67	93.1	193	94.6
Rupture of muscle/ limb	64	48.5	35	48.6	99	48.5
Fractures	58	43.9	24	33.3	82	40.2
Burn	38	28.8	24	33.3	62	30.4
Dislocation	32	24.2	13	18.1	45	22.1
Amputation	8	6.1	7	9.7	15	7.4
Consequence of Injury‡						
Scar	52	39.4	36	50.7	88	43.3
Partial Impairment	49	37.1	18	25.4	67	33.0
External Deformity	39	29.5	16	22.5	55	27.1
None	11	8.3	8	11.1	19	9.3
Total Impairment	**2**	**1.5**	**3**	**4.2**	**5**	**2.5**

† Percentages do not add up to 100 because the items are not mutually exclusive events

‡ A person might report more than one consequence

Table 3.5- Hospitalization Characteristics of war causalities stratified by gender

	Male		Female		Total	
	n	%	n	%	n	%
Mean of transportation to the hospital						
Ambulance	64	55.7	43	68.3	107	60.1
Private car	47	40.9	18	28.6	65	36.5
Other (military car, mobilette)	4	3.5	2	3.2	6	3.4
Time for transportation to the hospital						
<15 min	7	5.3	3	4.2	10	4.9
15min-60 min	11	8.4	10	13.9	21	10.3
1-2 hrs	62	47.3	31	43.1	93	45.8
2-5 hrs	24	18.3	9	12.5	33	16.3
5-24 hrs	10	7.6	10	13.9	20	9.9
>24 hrs	17	13.0	9	12.5	26	12.8
Length of stay at the hospital						
<1 week	64	48.5	32	45.1	96	47.3
1- 2 Weeks	18	13.6	12	16.9	30	14.8
2- 3 Weeks	16	12.1	10	14.1	26	12.8
3- 4 Weeks	6	4.5	6	8.5	12	5.9
4- 5 Weeks	10	7.6	3	4.2	13	6.4
5- 6 Weeks	3	2.3	3	4.2	6	3.0
>6 Weeks	15	11.4	5	7.0	20	9.9

Table 3. 6: Gender-specific prevalence of disability measured by difficulty in performing ADL

	Male		Female		Total	
	n	%	n	%	n	%
ADL Scale						
Difficulties in Bathing						
Totally	5	3.8	6	8.3	11	5.4
Partially	24	18.2	17	23.6	41	20.1
None	103	78.0	49	68.1	152	74.5
Difficulties in wearing clothes						
Totally	4	3.0	6	8.3	10	4.9
Partially	33	25.0	21	29.2	54	26.5
None	95	72.0	45	62.5	140	68.6
Difficulties in using toilets/ bathroom						
Totally	5	3.8	6	8.3	11	5.4
Partially	24	18.2	16	22.2	40	19.6
None	103	78.0	50	69.4	153	75.0
Difficulties in sitting/ standing up from a chair						
Totally	5	3.8	6	8.3	11	5.4
Partially	22	16.7	14	19.4	36	17.6
None	105	79.5	52	72.2	157	77.0
Difficulties to retain urine						
Totally	1	0.8	2	2.8	3	1.5
Partially	3	2.3	0	0	3	1.5
None	28	97.0	70	97.2	198	97.1
Difficulties in eating						
Totally	1	0.8	2	2.8	3	1.5
Partially	3	2.3	2	2.8	5	2.5
None	128	97.0	68	94.4	196	96.1
ADL by score						
ADL score=0	94	71.2	42	58.3	136	66.7
ADL score =1-3	15	11.4	10	13.9	24	12.2
ADL score= 4-6	18	13.7	13	18.1	31	15.2
ADL score= 7-9	3	2.4	7	9.7	10	4.9
ADL score= 10-12	2	1.6	0	0	2	1.0
Any Disability						
No	94	71.2	42	58.3	136	66.7
Yes	38	28.8	30	41.7	68	33.3

Table 3.7- Availability of assistance for dependant injured population stratified by gender

	Male		Female		Total	
	n	%	n	%	n	%
Need help in daily activities						
Totally	11	8.3	14	19.4	25	12.3
Partially	34	25.8	20	27.8	54	26.5
Relation to the person delivering care						
Spouse	30	68.2	5	15.6	35	46.1
Daughter	1	2.3	12	37.5	13	17.1
Sister	4	9.1	6	18.8	10	13.2
Mother	7	15.9	2	6.3	9	11.8
Son	1	2.3	2	6.3	3	3.9
Other (second family relative)	1	2.3	5	15.6	6	7.9
Availability of assistance in daily activities						
All the time/ Totally	17	39.5	16	50	33	44.0
Not all the time/ Partially	25	58.1	15	46.9	40	53.3
Hardly	1	2.3	1	3.1	2	2.7

Table 3.8- Consequences to the injury stratified by gender

	Male		Female		Total	
	n	%	n	%	n	%
Current mental health status						
GHQ-12 scale						
GHQ score <3	32	27.7	8	13.0	40	22.5
GHQ score >=3	83	72.3	53	87.0	136	77.5
Health related consequences†						
Need for medical follow-up/ care	71	53.8	42	58.3	113	55.4
Need for medication	67	50.8	44	61.1	111	54.4
Need for special therapy (i.e physiotherapy)	30	22.7	15	20.8	45	22.1
Need for assistive devices	18	13.6	11	15.3	29	14.2
Impact on work status†						
Change in income	33	66.0	3	33.3	36	61.0
Change in the work type	21	19.6	0	0	21	16.8
Change in the work schedule	10	9.3	1	5.6	11	8.8
Stopped working	48	44.9	9	50.0	57	45.6
As a direct consequence of the injury	38	35.5	8	44.4	46	36.8
Impact on activities						
Social activities	71	53.8	45	62.5	116	56.9
Daily activities	50	37.9	38	52.8	88	43.1

† Percentages calculated out of those who were working before the injury (127 males and 18 females) Also note that the percentages do not add up to 100 because the items are not mutually exclusive

Table 3. 9- Association between site of injury with impairment, disability and dependence

Site of the Injury	Impairment			Disability			Dependence		
	%	RR†	CI	%	RR†	CI	%	RR†	CI
Head									
No	37.1	1		57.4	1		12.9	1	
Yes	28.4	0.84	0.48-1.49	54.5	0.74	0.39-1.40	11.4	1.04	0.42-2.57
Face									
No	55.8	1		34.5	1		11.5	1	
Yes	57.1	0.99	0.53-1.89	30.4	1.05	0.52-2.14	14.3	1.79	0.68-4.78
Neck									
No	57.7	1		33.7	1		12.6	1	
Yes	46.4	0.61	0.27-1.39	31	0.78	0.31-1.94	10.3	0.74	0.19-2.81
Chest									
No	57.1	1		31.8	1		11	1	
Yes	53.1	0.82	0.431.59	38	1.40	0.68-2.88	16	1.63	0.62-4.27
Upper extremities									
No	56.5	1		34.4	1		14		
Yes	55.9	1.01	0.57-1.79	32.4	0.93	0.49-1.75	10.8	0.74	0.31-1.78
Abdomen									
No	54.1	1		31.3			11.6		
Yes	61.4	1.31	0.69-2.46	38.6	1.71	0.86-3.42	14	1.63	0.62-4.27
Back/spine									
No	54.7	1		31.4	1		13.6	1	
Yes	58.1	1.17	0.66- 2.08	36	1.39	0.74-2.65	10.5	0.83	0.33-2.08
Pelvis									
No	56.5	1		27.8	1		9.9	1	
Yes	54.8	0.94	0.47-1.87	**54.8**	**3.53**	**1.66-7.51**	21.4	**2.65**	**1.03-6.85**
Lower extremities									
No	55.3	1		24.7	1		7.8	1	
Yes	56.7	1.05	0.58-1.87	38.6	**2.21**	**1.11-4.40**	15	2.44	0.88-6.75

† Risk Ratio adjusted for age and sex

Impairment= any injury consequence including external deformity, perceived partial or total impairment
Disability according to ADL scale
Dependence= Total need for help in daily activities

Table 3. 10- Unmet needs by selected baseline socio- demographic and economic characteristics

	Need for Medical services		Need for Physical Therapy		Need for Assistive devices	
	%	P- value	%	P- value	%	P- value
Sex						
Male	70.7	0.402	47.2	0.072	12.6	0.478
Female	66.7		72.2		13.9	
Age						
15- 44 years	60.3	0.015	48.7	0.154	13.4	0.066
45- 64 years	78.6		66.7		4.9	
>64 years	93.8		100.0		25.0	
Marital Status						
Married	68.6	0.125	54.5	0.972	14.3	0.422
Single/Never married	61.8		56.3		9.1	
Widowed/ Seperated	92.3		60.0		19.0	
Educational Level						
Illiterate	94.7	0.032	100.0	0.151	23.3	0.209
Read and write	100.0		0		0	
Attended school	63.0		53.3		12.5	
Attended University	64.3		40.0		7.7	
Residence						
Own home	63.2	0.169	54.4	0.901	12.6	0.977
Rented home	81.5		60.0		13.6	
Friends/Relatives' home	76.9		50.0		12.0	
Economic status (income sufficiency)						
Never/ hardly	70.4	0.423	55.6	0.613	14.6	0.237
Almost/ most of the time	66.7		55.6		9.7	

Table 3. 11- Unmet needs by selected baseline Health related characteristics

	Need for Medical services		Need for Physical Therapy		Need for Assistive devices	
	%	P- value	%	P- value	%	P- value
Own perception of Health						
Very bad	100.0	0.094	100.0	0.316	42.9	0.068
Bad	72.1		64.7		17.0	
Average	77.1		55.0		14.3	
Good	51.6		33.3		7.1	
Very good	66.7		66.7		7.7	
Rating of health in percent (zero being the worst)						
<20%	87.5	0.143	83.3	0.240	27.8	0.053
21-40%	65.8		66.7		15.4	
41-60%	77.4		37.5		15.4	
61-80%	52.2		54.5		12.2	
>81%	66.7		33.3		0	
History of medical disease						
No	67.1	0.292	58.5	0.321	8.1	0.001
Yes	74.3		46.2		28.0	
Health Coverage/ Insurance						
No	79.3	0.001	50.0	0.141	12.8	0.520
Yes	32.0		71.4		13.7	
Current depressive state (GHQ_12>=3)						
No	42.9	0.102	33.3	0.342	4.8	0.198
Yes	73.6		62.5		14.4	
Severity of impairment						
No impairment	76.9	0.146	60.0	0.955	4.7	
External deformity	80.0		50.0		2.2	<0.001
Partial Impairment	62.3		54.3		29.7	
Total Impairment	40.0		66.7		40	
Degree of disability						
ADL score=0	71.9	0.287	47.8	0.259	8.1	0.001
ADL score =1-3	52.6		40.0		28.0	
ADL score= 4-6	69.0		75.0		32.3	
ADL score= 6-12	83.3		60.0		25.0	

CHAPTER 4

DISCUSSION AND CONCLUSIONS

4.1 Discussion

The July-2006 war on Lebanon ravaged the country for 33 days. It is estimated that during this period more than 1,000 persons were killed mostly civilians and around one million were displaced (Utzinger et al, 2007). Findings of the present study showed that the total number of injured during the war amounted to 2,548 cases distributed all over the Lebanese territories with an understandable higher concentration in the South. Among the studied sample (204 persons) men represented a higher percentage (65%) than women and the majority were adults in the age group 15-45 years of age which go in line with the findings in the Grapes of Wrath study 1996, since during wartime, women, children and seniors are the first to flee the conflict area whereas men stayed to defend land and property.

Findings of the survey suggest that around one year post injury, 46% of the casualties who had been in workforce had to stop work. About 90% related this work deferral to the direct impact of the injury on their physical capacities and health. In accordance with the literature, the impact of unemployment and lower revenue were intensified among people whose income depends on wages and was related to physical ability (Kuh.DJL et al, 1994) The considerable economic impact of the work loss was exacerbated by the health expenditure estimated to an average of 300,000LL per month which is approximately equivalent to the minimal national wage, and by the lack of health insurance (74%). Furthermore, 12% indicated the need for continuing assistance in their daily activities, that was often provided by a family member, mostly the spouse (46%).

Despite the fact that theatres of war are hard to compare, findings of this survey are in accordance to those found in an earlier similar study conducted in the aftermath of the "Grapes of wrath" war on Lebanon in 1996. This survey showed that almost half of the non fatal war casualties were impaired (45.7%), with 47% of them in need for continuing assistance because of their permanent impairment (Sibai et al, 2001). The current survey showed that around one third of the sample were disabled, almost one third of the injured reported partial impairment and 2.5% had permanent impairment. Findings regarding body parts affected were similar to those of the Grapes of Wrath where the highest incidence of injury occurred to the lower limbs (62.4%) increasing the risk of disability by 2.2 folds.

Moreover, injuries to pelvis were associated with higher incidence of disability (RR= 3.53 CI= 1.66- 7.51) and increased significantly the odds of need for assistance in daily activities (RR= 2.65 CI= 1.03- 6.85).

Few studies have examined war-related injuries and disabilities among civilians, rendering it different to compare our findings with those in the literature. Rustemeyer et al (2007) reviewed combat injuries among civilians and military personnel occurring from 1982 till 2005 and found that head and neck injuries had higher incidence in relation to the other parts of the body; Military combatants are likely to use protective measures such as vests and helmets and hence the body part enduring the injury is likely to differ when compared to the case of civilians. The injury pattern also depends on which side of the conflict (offense/defense) as well as on the weapons used and protective measures applied. During the July-war on Lebanon, missiles were falling randomly and the risk of exposure was to all civilians. Approximately two thirds of the victims were hit while at homes and almost one third were injured on roads. Injuries resulting from shrapnels (77%) were dominant over those resulting from direct bullet (2.9%), but no association was found between manner of the injury and its consequence. In more recent years, "distance battles" are more practiced thus affecting manner of injury, and body part affected. (Rustemeyer etal, 2007).

During the war, bombardment was almost continuous and hindered relief assistance from reaching casualties in due time. Consequently, civilians relied mostly on private cars (37%) for the transport of the injured to hospitals, with voluntary people taking responsibility of the survival of their community. (Goyet, 2000). Timely access to medical care and resources affect the health management of the injured and consequently the severity of impairment and/ or disability (Stong GC et al, 1993; Scott.R, 1988). In this study, 71% of the injured have been transferred in less than 2 hours to a hospital with the majority being transported by an ambulance (60%), but the medical/ surgical care received during transport or later on during hospitalization could not be accurately reported by the injured themselves nor retrieved from their medical records (mostly incomplete during crisis).

The survey explored unmet needs of the injured for medical care, physical therapy and assistive devices in relation to the socio-demographic and health-related characteristics of the injured. Findings showed that the need for medical care increases with increasing age ($p=0.015$) and was significantly more perceived among the illiterate ($p=0.032$) and those who lacked health coverage ($p<0.001$). There was a clear positive trend between reported difficulties in daily living activities and the needs for medical care although the relationship did not attain statistical significance. Furthermore, reported impairments and disabilities were significantly associated with the need for assistive devices ($p=<0.001$).

The conflict brought with it widespread exposure to traumatic events. Hence depression, distress and anxiety were prevalent among people who endured the July war (Chaaya et al, 2006). Using the GHQ-12 scale, around 74% of the war casualties showed depressive symptoms. The literature indicates that in the aftermath of a crisis, displacement, material losses, deprivation and uncertain future constitute predisposing factors for any psychopathology (Brundtland.G, 2000; Dewaraja.R et al, 2006). This is often aggravated by post-trauma impairments and disabilities that the affected population has endured and is continuing to suffer from.

4.2 Conclusions and Recommendations

The impact of armed conflict on civilians often entails long-term physical and psychological sequelae, yet, this has not been much documented in the literature (Utzinger et al, 2007). Within the Lebanese context and the July-2006 war, the findings of this survey shed light over several key issues:

1- According to the WHO, external aids and donations flood from different resources during and immediately after the war. But these were distributed to the affected people in a wasteful and uncoordinated scheme (WHO, 2006). One year post the crisis, the majority of the non-fatal casualties had unmet need for medical care and therapy and only one injured person stated that he had appropriate "follow- up". Consequently, there is a fundamental need to trail war victims and provide required support not only during crisis or in the short aftermath but more on the long run when all assistance comes to an end. Media coverage should pursue efforts to attract the attention of donors (Spiegel, 2005) focusing on the long-term need of war victims.

2- Health coverage is a key element to satisfy the health care needs of war victims. Also, attention should be directed, in addition to physical needs of the injured, to the psychological impairments in particular of those suffering from long-term disability and handicap.

3- Rehabilitation programs to reintegrate the disabled and the impaired injured into the work force for them to regain their regular social activities is fundamental. The majority of the injured are at the prime of their productive years and such interventions are cost-effective. Literature concerning war casualties and rehabilitation ascertain that interventions to reduce limitation in function result in the successful adaptation of the injured to his new situation and employ his capacities to the best possible advantage (Eldar et al, 2003).

4- Within the above, there is a need to foster the Lebanese law for disabled people (Law 220, decree 1834, 2000) that stipulates the need to make public places physically accessible to the disabled and require the public sector and the private companies with at least 60 employees to hire at least 3% of its staff from people with disabilities. The implementation of this law will create opportunities of work to the disabled injured and will improve their economic as well as their psychological status.

Annex A

Data Collection

A- Collection Process

The data collection process was undertaken with the support of HE the Minister of Health Dr Mohamad Jawad Khalife and the Director-General of the Ministry, Dr. Walid Ammar. Several tasks were carried out to ensure a valid data. Following are the main tasks achieved at each source

1- Emergency Room/Team activated during war

At the beginning of war, the Minister of Public Health established a disaster operation center at the Rafic Hariri University (Government) hospital (RHUH) to follow up on war casualties, with all hospitals and health establishments. The data was collected via faxes and phone calls. The total number of records was 4,708 records (559 martyrs and 4,149 injured). The data included in and out patients of 65 hospitals, including hospitalizations incurred amongst the displaced population. The advantage of this source was that data collection had started at the very beginning of war. However, there was a great deal of missing information and the primary analysis done on this data did not comply with other more trusted sources (Visa and Billing Systems). Consequently this source was completely disregarded

2- "Crisis Registries"

At the beginning of war, HE the Minister of Health, Dr Mohamad Jawad Khalife requested all hospitals to admit war casualties regardless of their health coverage, on account of the Ministry of Health (MOH) (Decree 1/478). For these special arrangements, specific forms had to be filled at the hospitals and injury cases had to be registered on a particular template available on the Ministry's website. However, some of the data was not transferred into soft copies, there were missing records from two major hospitals (RHUH and Marjeyoun hospitals) and the data on hand, though it enclosed information not available elsewhere (such as the final status of the injured, in/out patient), did not include all pertinent information required for the analysis. This data was ultimately used to work out admission/ emergency cases and martyrs.

The use of this data set included the following tasks:

- Meet with the Head of medical care directorate Dr Riad Khalife asking for support and cooperation and explaining the purpose of the study.
- Procure data excel file from the medical care directorate.
- Convert the obtained file to a table, clean the data and add the hospital's code to the table using the visa system coding table.
- Import the final table to MS Access Database.

3- Visa System

As noted earlier, the Visa system is an automated system that includes personal and medical information about patients whose hospitalization is covered by MOH. The advantage of the visa system is that it's an official document already parameterized that includes most of the required data. The total number of the records entered on the visa system was 1,466; However, during the hostilities, the visa issuing centers of Nabatieh, Tyre and Bint Jbeil were in the fire zone so the visa records could not be immediately entered in the system. After the war, the Minister exempted these hospitals from re-issuing the missing visas, which resulted in approximately 45% of the casualties treated at these hospitals not to be registered in the system. In addition, there are visa-issuing centers that merged war casualties with the displaced people's hospitalization. Moreover, the data did not include the length of stay nor the out-patients registries. In conclusion, the visa system offered around 50% of the desired data . The missing information had to be retrieved from other sources.

The following tasks were undertaken to make use of the visa system:

- Investigate the content of the visa system.
- Write 3 scripts to extract the data from Oracle database to an excel file (script for patients and admission, script for diagnosis and a script for surgical procedures).
- Run the scripts and transform the results to an Access database.
- Test the result to insure the validity of data.
- Perform primary analysis to check the data content and search for missing data by comparing the analysis with the "crisis registries" data source analysis.

4- Billing system

The billing system is an automated system used by the MOH to monitor bills sent from hospitals. The total number of records found in this system was 11,434 record (one injury could have many records).Differing from other sources, this source included the admission and discharge dates which allowed to compute the length of stay. However some of the hospitals had merged the in/out cases together; some files were distorted and there were missing data. As a result this source was used to fill part of the missing information in the visa system.
The following tasks were performed:

- Investigate the billing floppy disks (about 70 floppy disks, each disk could have IN or OUT or displaced people data).
- Copy the required files from the floppy disks (50 floppy disks with 130 files for each type of patients ("Flat Rate and non Flat Rate" "IN, OUT, Displaced").
- Clean the files and add the hospital's code, the type of data, and the patient sequential number.
- After checking the files, there were many missed records (damaged floppies), which necessitated the need to request these files directly from the hospitals.
- Import the processed files to the Access database and merge the imported records in one table.

- Check and clean the data.
- Perform primary analysis.

5- Hospitals

Hospitals served as last source to fill in the missing data. They were contacted thanks to the cooperation of Ministry officials, who facilitated access to the hospitals records. Not all hospitals had automated systems and some did not register the diagnosis in the information system; however 3,332 records were imported from 14 hospital (one injury could have many records) and used to complete the missing records of hospitalized casualties.

The final data used for analysis was collected from the visa and billing systems; and missing information was completed from the "crisis registries" and after direct contact with hospitals.

This entailed the performance of the following tasks:

- Contact the hospitals and explain the purpose of the study (with an emphasis on the permission granted from the Ministry).
- Explain the needed information and assign a deadline to deliver the file.
- Perform site visits to follow up the data collection process, and at some hospitals to back up the IT team in the preparation of the data.
- After collecting all required files (except from 2 hospitals), each file was processed as follows:
    - Add hospital's code.
    - Convert multi procedures record to multi records.
    - Convert multi diagnosis record to multi records.
    - Calculate the length of stay using the admission and discharging dates.
    - Calculate the age based on the birth date.
    - Complete the sex field by M or F (almost all hospitals do not register the sex, names were used to fill in this field)
    - Complete data of the District (qada) field.
- Import the data to access database.

B- Merging process

- Implement the length of stay of the billing data into the visa system data.
- Complete the missing records of the hospitals data by adding the billing data.
- Merge into a final table data from both visa system and hospitals
- Add descriptions to codes (ICD 10, CPT Codes)
- Add Hospital's Districts
- Translate the names of villages, districts and hospital's names to English in order to use SPSS for analysis
- Add an ID number to each patient.
- Convert the final table to excel sheet

Annex B

Data Sources

Data Sources

1. Emergency Team during the war

At the beginning of the war, the Minister of Health established an emergency operation center at the Rafik Hariri (Government) University hospital in Beirut to track and follow up on the casualties requesting all hospitals to send in their data by fax and phone calls.

a. Collected data

The following table contains the data collected and its status:

Description	Status
Information date (تاريخ ورود المعلومة)	Fully implemented
Injury Date (تاريخ الإصابة)	Fully implemented
Muhaffazat (Region) (المحافظة)	Fully implemented
Hospital's name (المستشفى)	Fully implemented
Full Name (الإسم الكامل)	Fully implemented
Status (Martyr/Injured) (جريح / شهيد)	Fully implemented
Nationality (الجنسية)	Partially implemented (<10%)
Sex (الجنس)	Partially implemented (>80%)
Birth Date (مواليد)	Partially implemented (<40%)
Type (Civilian/Soldier) (مدني / عسكري)	Partially implemented (<10%)
Place of injury (مكان الإصابة)	Not Useful
Notes (ملاحظات)	Not Useful

b. Data Form: the data collected was entered to an excel file which contains about 4,708 records (559 martyrs and 4,149 injured). The file includes all patients admitted either to the emergency department as well as those admitted as inpatients in 65 hospitals. The excel file was mal-formatted and needed to be converted to a useful table.

c. Advantages:

The advantage of this source of information is that the data collection started from the beginning of the war.

d. Disadvantages:

After performing a basic data cleaning and data analysis on the file, we found a great deal of shortcomings namely:

- The data source did not include all required items to permit the required analysis.
- The results of the basic analysis did not match with other more trusted data sources such as the Visa and billing Systems. In order to seek further clarification, we had to contact hospitals and found that the file contained information on injured and displaced patients.

e. Conclusion: After a thorough evaluation, it was decided to exclude this data source from our potential data sources.

2. Minister's Decree number 1/478 Dated on July 18, 2006

As was mentioned above, HE Dr Mohamad Jawad Khalife mandated all hospitals to receive and treat all injuries on account of the Ministry (Decree 1/478 of July 18, 2006). This decree stipulated that hospitals must register the injured on a special template (published on the Ministry website). The Directorate of Medical Care at the Ministry was to monitor the proper implementation of the decree and to retrieve the special forms from the hospitals.

1. Collected data:

The following table contains a description of the information collected:

Data Type	Status of Hard Copy	Status of Soft Copy
Injury Date (تاريخ الإصابة)	Fully implemented	Fully implemented
Hospital's name (المستشفى)	Fully implemented	Fully implemented
Full Name (الإسم الكامل)	Fully implemented	Fully implemented
Time of Arrival (ساعة الوصول)	We Don't know	Not implemented
In/Outpatient (دخول او خارجي)	Fully implemented	Fully implemented
Visa Number (رقم بطاقة الدخول)	Not implemented	Not implemented
ICD 10 (تشخيص موجز او الاصابة)	Implemented for IN Cases	Not implemented
Notes (ملاحظات)	Partially implemented	Not implemented

Place of injury (مكان الإصابة)	Not Useful	Not Useful
Sex (الجنس)		Partially implemented (<25%)
Death (وفاة)		Fully implemented

b) Data Form: the data exists in hard copy and a part of its content is entered in an Excel file.

1. **Advantages:**

The advantages of this data source are:

* The data source includes the injury date.
* The data source includes the status of the injured (Dead/Not Dead)
* The data source includes all cases (In and Out)

2. Disadvantages:

The disadvantages of this data set are:

* The main purpose of this data source was to integrate the admission and the billing processes. However, the collected data is incomplete to permit the analysis.

* The Visa number is not implemented.

* The data from two important hospitals are missing (namely the Rafic Hariri Government University hospital and the Marjeyoun Governmental Hospital)

c) Data summary:

Inpatients داخلي	2,441
Outpatients خارجي	1,943
Undefined غير محدد	161
Inpatient Death داخلي ووفاة	35
Outpatient Death خارجي وفاة	46
Undefined Death غير محدد ووفاة	464
Total Deaths مجموع الوفيات	545
TOTAL المجموع	**5,090**

Bekaa البقاع	685
South Lebanon.الجنوب	2,457
North Lebanon. الشمال	87
Nabatiyeh النبطية	670
Beirut بيروت	210
Mount Lebanon. جبل لبنان	981
Total المجموع	**5,090**

d) Conclusion:

This data source contains three parameters that do not appear in other data sources:

1- The date of injury
2- The final status of the injured (Dead/Not Dead)
3- The outpatients

3. Visa System:

As was mentioned in the introduction, the Ministry has developed an automated system that provides personal and medical information on patients admitted on the account of MOH.

a. Collected data:

The followings are some of the parameters that included in this data source

First Name
Last Name
Birth Date
Sex
Marital Status
Place of civil registration
Place of residence
Occupation
Nationality

Address
Phone Number
ICD10: Diagnosis Code (Could contains more then one code)
CPT Code: Surgical Procedure Code (Could contain more than one code)
Visa Date
Hospital's Code
Hospital's Qada
Admitted Doctor

b. Data Form

The data exists in an oracle database format. To extract the required records, it was necessary to write a SQL script that includes the necessary codes in order to merge all tables in one record. After running the script, the results were converted to an excel file with notation of the types of fields.

1. Advantages

The advantages of this data source are:

1. The data source includes most of the required data.
2. The content is converted to parameters.
3. The visa is an official document used to organize patient admissions

2. Disadvantages:

The disadvantages in this data source:

a) During the war, the visa issuing centers and hospitals of the Nabatieh, Tyre and Bint Jbeil districts were in the war zone. The visas were thus not registered dutifully in the system. At the end of the hostilities, the Minister exempted these hospitals from submitting the visas required for the admission of the casualties. This meant that about than 45% of injuries were not entered into the system.

b) Other visa issuing centers merge the injured and the displaced in the system.

c) The data did not mention the length of stay.

d) The data did not include the outpatients.

Data summary

The number of casualties inscribed in the visa system was 1,466 injured.

Conclusion

This data source covers no more than 50 percent of the cases. To use this data, one needs to retrieve the missing information from other data sources.

4. Billing system

To audit the bills sent from hospitals, MOH uses an automated system called the "Billing System" whereby hospitals send the bills as hard and soft copies summarizing the personal, financial and medical data in an excel file. At the end of the war, the hospitals sent a separate excel sheet for Inpatients, outpatients and the displaced.

Collected data:

The followings are some of the parameters that are included in this data source:

Patient Number
Patient full name
Visa number
Visa date
Admission date
Discharge date
Medical procedure (CPT Code for surgical procedures and CSH for consultation.
Doctor's name, number and specialty
Hospital's name
Cost
….

Data Form: The excel files for each hospital exist on many floppy disks in the auditing committee in MoPH.

Advantages: The advantages of this data source are:

The data source contains the admission and the discharge dates.

The data source used is part of a formal and official process; however, the data must be clean and completed.

Disadvantages: The disadvantages in this data source:

One could not use this data source independently.

Some of the excel files are missing or damaged.

Some hospitals merged the in and out cases.

Two hospitals did not register the visa number in the excel file.

Data summary: The number of imported records numbered 11,434 since (one injury could have many records).

Conclusion: One could use this data source to fill the missing information in other data sources (Visa System).

5. Hospitals

In situations where hospitals have an automated information system (with medical and personal data) and have IT staff to retrieve the data from the system, and are willing to cooperate and register all data for the war casualties, then these hospitals could be the main data source in this project.

After reviewing the previous data sources, it was decided to contact the hospitals in an effort to collect the missing data;

Collected data: The followings are some of the parameters that are included in this data source:

Patient File Number
Visa Number
First name
Middle name
Last name
Birth date
Sex
Profession
Registry qada
Registry place
Village
Address
Tel Number
Admission date
Discharge date
ICD 10

CPT CODES

Data Form: The hospitals were requested to prepare the list in excel files.

Advantages: The advantages of this data source are:

The data was extracted form the source.

Disadvantages: The disadvantages in this data source:

Some hospitals do not have automated system.

Some hospitals do not register the diagnosis in the information system.

The result depends on the cooperation of the hospitals.

Some hospitals do not register data in the automated system.

Data summary: The number of imported records were 3,332 record from 14 hospitals (one injury could have many records).

Conclusion: This data source could provide the missing data for inpatients.

Data Collection Strategy

After reviewing all data sources and analyze the advantages and disadvantages of each one, it was decided to:

- Exclude the first data source (Emergency Team during the war).
- Use the second data source for outpatients and martyrs.
- Use a combination of the third (Visa System) and the fourth (Billing System) data sources to work on the first part of the inpatients.
- Use the fifth (Hospitals) data source to work on the second part of the inpatients. In case of problems, one could use the data extracted from the billing system to resolve these difficulties.
- Merge all data in one file (Excel File).
- Execute all tasks to get one clean and usable file

Data Collection Process

The data collection process was undertaken with the full support of HE the Minister of Health (Dr Mohamad Jawad Khalife) and the Director-General of the Ministry, Dr Walid Ammar.

Second data source tasks (Minister's Decree number 1/478):
A meeting was held with the Director of the Department of Medical Care, Dr Riad Khalife, seeking his cooperation. Dr Khalife provided the researchers with an excel file. This file was then converted to a table. The data was cleaned, adding the hospital's code using the visa system coding table. The final table was imported to an MS Access Database.

Third data source tasks (Visa System):

- The contents of the visa system were carefully reviewed. Three scripts were written to extract the data from the Oracle database into an excel file (script for patients and admission, script for diagnosis and a script for surgical procedures).
- The scripts were then run to transform the results into an Access database.
- The findings were tested to insure the validity of data.
- A basic analysis was then performed to check the available data and compare it with the data from the second data source analysis.

Fourth data source tasks (Billing system):

- The floppy disks (about 70 floppy disks) were studied. Each disk could include data from inpatients, outpatients and displaced.
- The required files from the floppy disks were copied. This included 50 floppy disks with 130 files for each category of patients namely "Flat Rate versus non-Flat Rate", "inpatients", Outpatients, and "displaced"
- The files were cleaned. The hospital's code, the type of data and the patient sequential number were added.
- After checking the files, many files (damaged floppies) were missing. These files were retrieved directly from the hospital concerned.
- The processed files were the imported into the Access database and merged in one table.
- The data was checked and cleaned.
- Finally, the basic analysis was performed.

Fifth data source (Hospitals)

- Every hospital was contacted to explain the purpose of the study. An information sheet for the required data was sent to the hospital director, to be completed.
- The information sheet was discussed with the assigned staff member to clarify the information needed. A deadline was suggested to complete this task.
- The hospital was then visited to pick up the information and to check on the missing patient files. In some hospitals, there was a need to assist the hospital team to prepare the data.
- The required files were collected from all except two hospitals.
- Each file was processed as follows:
  - The hospital's code was added.
  - Convert multi procedures record to multi records.
  - Convert a multi diagnosis record to multi records.
  - Calculate the length of stay from the admission and discharging dates.
  - Calculate the age from the birth date.
  - Replace sex field by M or F (almost all hospitals do not register the sex of the patient. This filed was filed using the name of the patient).
- The qada of the hospital was included.
- The data was imported to an Access database.

Data sources merge process

- Introduce the length of stay from the billing data into the visa data.
- Complete the incomplete records by adding information from the billing data.
- Merge the visa system and the hospital final tables into one table named “Final Table”.

One should note that a single patient could have been admitted to different hospitals. Grouping the patients (using the visa data) was facilitated because every patient has a unique ID regardless of the hospital. However, the problem lied in the data collected from hospitals. To resolve this difficulty, four parameters were used namely the patient’s name, age, admission and discharge dates.

In addition, descriptions were added to the ICD 10 and CPT codes, the hospital qada was added, the names of the villages, qadas and hospitals were translated into English (to use in SPSS). An identification number was given to every patient, and finally the final table was converted into an excel sheet.

Annex C
عدد المصابين حسب المناطق

القضاء/ القرية	عدد الجرحى
بنت جبيل	**110**
عيناتا- بنت جبيل	17
عيتا الشعب	21
عيترون	19
بنت جبيل	42
مارون الراس	11
حاصبيا - راشيا	**11**
مرجعيون	**45**
بليدا	5
كفركلا	6
الخيام	7
مجدل سلم	6
مرجعيون	5
ميس الجبل	16
نبطية	**28**
حبوش	4
جبشيت	4
كفرتبنين	4
نبطية	12
زيفتا	4
صيدا	**41**
الغازية	14
القاسمية	7
صيدا	9
صرفند	4
زرارية	7
صور	**191**
البازورية	16
شيحين	12
دير قانون النهر	15

جبال البطم	20
جويا	12
قانا	23
القليلة	25
صور	68
المجموع:426	

Annex D

تقييم احتياجات جرحى حرب تموز 2006
(فوق15 سنة، ادخلوا المستشفى لأكثر من 24 ساعة)

رقم الإستمارة: ----------

التاريخ: ------/------

يوم / شهر

العنوان الكامل:

الشارع : .....

الحي: .....

القرية/ البلدة : .....

المحافظة: .....

القضاء : .....

إسم المحقق: .....

إسم مدخِّل البيانات: .....

موافقة للإشتراك:

هيده الدراسة بتقوم فيها منظمة الصحة العالمية بالتعاون مع الجمعية اللبنانية للادارة الصحية لدراسة إحتياجات الاشخاص يلي تعرضوا للاصابة في حرب تموز 2006. الدراسة بتهدف لمعرفة الوضع الإجتماعي, الصحي والنفسي و إحتياجات الاشخاص يلي تعرضوا للاصابة بالحرب. القيمين على هيده الدراسة ما بيقدروا يقدموا أي خدمات للمشاركين، بس هيده الدراسة رح تساعد على فهم درجة الاصابة و إحتياجات المصابين, بالتالي رح نقدر نعطي صورة عن المعانات و الإحتياجات الغير المتوفرة مما بيساعد لتقديم العون المناسب عند توفر التمويل عند الجهات المختصة. المعلومات المدوّنة رح تبقى مجهولة المصدر و الاسم رح يبقى طي الكتمان.

بتقبل تشارك بـهالدراسة؟ ☐ نعم ☐ لا

شكراً لتعاونك.

اذا المخبر غير المصاب/ة

شو هو سبب محادثة المخبر	**1**	**عند المصاب مشكلة بالتواصل (صعوبة في السمع او الكلام او الفهم)**
	2	**عند المصاب مشكلة جسدية (معوق) ولا يريد التكلم/ مقابلة احد**
	3	**لا يوجد عائق لكن المصاب يرفض اجراء المقابلة**
	4	**المصاب موجود في مؤسسة اعادة تأهيل**
	5	**المصاب ليس في المنزل**
	6	**غير ذلك،**
		حدد السبب----------

معلومات عن الشخص المجيب الذي ينوب عن المصاب

الاسم (اختياري)		
العمر	**|___|___|**	**سنة**
الجنس (دون سؤال)	**1**	**ذكر**
	2	**انثى**
علاقته بالمصاب/ة	**1**	**الاب/ الام**
	2	**الاخ/ الاخت**
	3	**الابن/ الابنة**
	4	**الصهر/ الكنة**
	5	**غيره حدد**
آخر مرحلة دراسية واصلها المخبر؟	**1**	**أمي**
	2	**يقرأ و يكتب**
	3	**إبتدائي**
	4	**متوسط**
	5	**ثانوي**
	6	**جامعي**
	7	**مهني**
	8	**دراسات عليا**

معلومات عامة / ديموغرافيا

1	NAME	شو الاسم الكريم؟		
2	SEX	الجنس (دون سؤال)	1	ذكر
			2	أنثى
3	NATIO	شو جنسيتك؟	1	لبناني/ة
			2	فلسطيني/ة
			3	غيره حدد
4	AGE	أديش عمرك؟		|___|___| سنة
5	RES	المكان/ البيت يلي ساكنه هلق (مكان تواجد المصاب)	1	منزلك او منزل أهلك (ملك)
			2	منزلك او منزل أهلك(أجار)
			3	منزل اقارب / اصحاب
			4	منزل مقدم من الدولة
			5	مؤسسة اعادة تـأهيل في لبنان (انتقل الى الرقم7)
			6	مؤسسة اعادة تـأهيل خارج لبنان (انتقل الى الرقم7)
			7	غيره حدد
6	N_RES	كم شخص ساكن بالبيت؟ (عد حالك معهم)		|___|___| شخص
7	ECO_SO	شو هو مصدر/ مصادر دخل الأسرة، بالوقت الحاضر؟		نعم 1 كلا 0
			1	تعويض نهاية الخدمة لأحد افراد العائلة
			2	مدخول من افراد العائلة
			3	تعتمد على أيرادات من عقارات عند العائلة
			4	تعتمد على مصاري بالبنك مجمعها من قبل
			5	تعتمد على مردود مالي من عمل افراد العائلة
			6	تعتمد على معاش شهري من مؤسسة حكومية
			7	تعتمد على معاش شهري من مؤسسات خيرية
			8	تعتمد على معاش شهري من مصدر مالي حزبي
			9	تعتمد على مساعدات مالية من الاصحاب / الاقرباء
				مصادر أخرى حدد
8	ECO_S	كونك فرد من اسرة، هل المدخول الحالي للاسرة عم يأمن حاجاتك الضرورية من سكن، أكل، طبابة، تياب، مصاريف نقليات، وغيرها؟	1	أبداً
			2	بصعوبة (بالكاد)
			3	الحمد لله مستورة/ تقريبا"
			4	معظم الوقت
			5	بأمنها كليا وبزيادة

ديموغرافيا(تابع)				
9	**EDU**	**شو هي آخر مرحلة دراسية وصلتلها؟**	**1**	**أمي**
			2	**يقرأ و يكتب**
			3	**إبتدائي**
			4	**متوسط**
			5	**ثانوي**
			6	**جامعي**
			7	**مهني**
			8	**دراسات عليا**
10	**MAR_S**	**شو وضعك المدني؟**	**1**	**متزوج**
			2	**أرمل**
			3	**مطلق/منفصل عن الزوج/الزوجة**
			4	**أعزب، لم يتزوج أبدا (انتقل للرقم12)**
11	**NB_CH**	**هل عندك ولاد؟**	**1**	**نعم**
			2	**كلا**
12	**WB_I**	**شو كنت تعمل قبل الاصابة؟**	**1**	**بتعلم= بروح على المدرسة او الجامعة**
			2	**بشتغل و بتعلم**
			3	**بشتغل (انتقل الى الرقم 15)**
			4	**بشتغل مع العائلة (انتقل الى الرقم 15)**
			5	**لا شيئ / في البيت (انتقل الى الرقم 15)**
متابعة الدراسة بعد الإصابة				
13	**SCH_B**	**هالسنة رح تروح على المدرسة / الجامعة؟**	**1**	**نعم (انتقل الى الرقم15)**
			2	**كلا**
			3	**رح روح على مدرسة متخصصة للاعاقة**
14	**REA**	**ليش ما رح تروح على المدرسة/ الجامعة ؟**	**1**	**بسبب الاصابة**
			2	**لسبب اقتصادي (ضيقة مالية)**
			3	**غيره حدد**

الوضع الصحي

15		هل تشكو من؟		نعم 1	كلا 0
	H_CARD	أ مراض قلب او شرايين			
	H_HTA	ضغط دم مرتفع			
	H_DIAB	سكري			
	H_CHOL	كوليسترول/ شحم بالدم			
	H_CHRN	أمراض أخرى حدد			
16	SMKING	هل بتدخن سيجارة او نرجيلة؟	1 نعم (حاليا")		
			2 كنت و وقفت		
			3 لا (ابدا")	(انتقل الى الرقم 18)	
17	SMK_Q	قديش بتدخن او كنت تدخن؟	A----------سيجارة باليوم		
			B----------رأس نرجيلة باليوم		
			C ----------رأس نرجيلة بالاسبوع		
18	HEALT	كيف بتشوف صحتك بالأجمال؟	1 مش منيحة أبدا		
			2 مش منيحة		
			3 نص نص		
			4 منيحة		
			5 كتير منيحة		
19	RATEH	قديش بتعطي صحتك علامة من 0 إلى100؟ (0 الاسوء- 100 الافضل)			
20	M_INS	هل عندك تأمين صحي / هل أنت مغطى بأي نوع من الضمان الصحي ؟	1 نعم		
			2 كلا	(انتقل الى الرقم22)	
21	TYP_INS	بأي نوع من الضمان الصحي/الاجتماعي أنت مغطى؟ (ممكن اكثر من جواب)	Ins_T1 الضمان الاجتماعي	نعم 1	كلا 0
			Ins_T2 تعاونية موظفي الدولة		
			Ins_T3 الجيش		
			Ins_T4 النقابة (المهندسين، الاطباء، المحاميين..)		
			Ins_T5 صندوق تعاضدي		
			Ins_T6 تأمين خاص		
			Ins_T7 اونروا		
			Ins_T8 البلدية		
			Ins_T9 غيره, حدد		

مكان السكن بعد الاصابة

22	SAM_H	بعدك ساكن بنفس البيت يلي كنت تسكن فيه قبل اصابتك؟	1 نعم 2 كلا (غيرت البيت)	(انتقل الى الرقم25)
23	MOD_H	هل اضطريت تعمل تعديلات بالبيت بسبب اصابتك / اعاقتك؟	1 نعم 2 كلا	(انتقل الى الرقم26)
24	MODF_T	شو هي هالتعديلات؟	حدد	
25	CHNG_H	ليش غيرت بيتك بعد الإصابة؟	1 البيت تدمر كليا" 2 البيت متضرر كثير (لا يسكن) 3 بسبب الاصابة / الاعاقة(مثلا" ما بقى في يطلع درج) 4 غيره, حدد	

الشغل قبل و بعد الاصابة

26	WKT_BI	شو كنت تشتغل قبل اصابتك؟	1 لا شيئ 2 رب العمل و عندك موظفين / عمال 3 بتشتغل عحسابك 4 شغل مع العائلة 5 مستخدم بالدولة 6 مستخدم بالقطاع الخاص 7 مستخدم بالأنروا 8 مستخدم بمؤسسة (ذات منفعة عامةNGO) 9 غيره حدد	(انتقل الى الرقم 33)
27		شو كان نوع عملك؟	1 فني / حرفي (نجار/ حداد الخ) 2 اداري/ مكتبي 3 مهنة حرة(استاذ/ طبيب/ محامي الخ) 4 عامل/ اجير 5 مزارع 6 غيره حدد	

	نعم	كلا
	1	0

28	WKL_AI	هل أثرت الإصابة على شغلك من ناحية ؟	1 الدوام 2 نوع الشغل 3 توقفت عن الشغل (انتقل الى الرقم30) 4 غيره, حدد	
29	WCH_EF	هل التغيير أثر على مدخولك؟	1 نعم 2 كلا	(ثم انتقل الى الرقم 31)

الشغل قبل و بعد الاصابة (تابع)

30	WRL_AI	ليش وقفت الشغل بعد اصابتك ؟	1	لا سباب صحية، نوع العمل لا يتلائم مع الاصابة
			2	رب العمل أجبرك على ترك العمل (طرد تعسفي)
			3	أنت قررت تتوقف بملء ارادتك لترتاح مش بسبب الاصابة
			4	غير سبب حدد
31	ECO_NBB	كم شخص كان يعتمد عليك ماديا"، جزئيا" كان أم كليا؟		|___|___|*شخص*
32	ECO_NBN	كم شخص بيعتمد عليك هلق ماديا"، جزئيا" كان أم كليا؟		|___|___|*شخص*

معلومات عن الاصابة و الاستشفاء

33	IN_DATE	اي نهار انصبت؟	حدد	----/ ----- يوم/ شهر
34	REASO_I	شو هو السبب الأول المباشر/ الأهم للاصابة؟	1	رصاصة مباشرة
			2	شظية من جراء سقوط قنبلة
			3	لغم ارضي
			4	حريق
			5	وقع عليك شي تقيل /حاد
			6	وقعت اثناء الهرب من القصف
			7	أسباب اخرى, حدد
35	LOCAT_I	وين صارت الحادثة؟ /مكان الحادث	1	في المنزل
			2	في مكان العمل
			3	في الملجأ
			4	على الطريق
			5	في السيارة
			6	غيره ,حدد

نعم	كلا
1	0

36	PLACE_I	حدد مكان الإصابة بجسمك؟ (وين انصبت؟) (ممكن اكثر من اجابة)	Place1	الرأس
			Place2	الوجه
			Place3	العينين
			Place4	الرقبة
			Place5	الصدر
			Place6	الأطراف العليا (اليدين)
			Place7	البطن
			Place8	الظهر
			Place9	العمود الفقري
			Place10	الورك/الحوض
			Place11	الأطراف السفلى (الرجلين)
			Place12	أخرى، حدد

معلومات عن الاصابة و الاستشفاء (تابع)

نعم 1 كلا 0

37	TYPE_I	شو كان نوع الإصابة؟ (ممكن اكثر من اجابة)	Type1	جرح
			Type2	حرق
			Type3	خلع
			Type4	تمزق(عضل)
			Type5	كسر
			Type6	بتر طرف / اطراف
			Type7	أخرى، حدد
38	TRP_T	بعد قدي وقت تم نقلك الى المستشفى / للمعالجة ؟		حدد ---------- ساعة
39	TRP_M	بشو تم نقلك ؟	1	Ambulance / سيارة اسعاف
			2	سيارة مدنية
			3	غيره ,حدد
40	DURAT_H	كم يوم بقيت بالمستشفى ؟(الفترة الكاملة)		|___|___| يوم
41	RESULT_I	بشو تسببت الاصابة ؟	1	لا شيئ
			2	ندبة
			3	تشويه جسدي(من حرق مثلا")
			4	اعاقة جزئية (مثلا" عمى عين وحدة،بتر يد)
			5	اعاقة كاملة (مثلا" عمى عينتين، شلل، بتر اليدين/ الرجلين
			6	غيبوبة
			7	غيره ,حدد
42	INJURY	حدد بالتفصيل المشاكل التي نتجت عن الاصابة بوقتها		

المتابعة/ العناية الصحية بعد الاصابة

			نعم	كلا *
43	MD_FP	بيلزمك متابعة طبية بسبب اصابتك خلال الحرب؟		
44	MDS	بتاخذ دواء دائم بسبب اصابتك خلال الحرب؟		
45	PHYSI	عم تعمل علاج معين (فيزيائي ...)بسبب اصابتك؟		

*اذا كانت أجوبة 43-44-45 كلها نفي انتقل الى الرقم 50

المتابعة/ العناية الصحية بعد الاصابة(تابع)

			(ضع √ في الخانة المناسبة ، ممكن الإجابة بأكثر من احتمال)				
	COVERAGE	مين بيدفع تكاليف	المصاب او عيلته C1	وزارة الصحة C2	تأمين خاص* C3	تأمين تابع للدولة** C4	المؤسسة نفسها!! C5
46	COVER_D	الطبيب؟					
47	COVER_M	الدواء؟					
48	COVER_T	العلاج ؟ physiotherapy					
49	COST_H	قديش معدل تكلفة العناية الصحية بالشهر من طبابة او دواء او علاج الخ؟	----------ل.ل				

*تأمين خاص: نقابة، شركة تأمين خاصة الخ.
** تأمين تابع للدولة: جيش، درك، بلدية، تعاونية الخ.
!! مؤسسة اعادة تأهيل أو مؤسسة يعيش فيها أو يرتاد اليها

النشاطات بعد الاصابة

50	SA_DAI	هل حدت اصابتك من نشاطاتك الإجتماعية؟(زيارات، اختلاط مع المجتمع....)	1 2	نعم كلا	
51	A_DAI	هل حدت اصابتك من نشاطاتك الحياتية؟(أكل، حمام، مشي...)	1 2	نعم كلا	
52	A_HEL	هل انت بحاجة لحدا يساعدك باحتياجاتك اليومية ؟	1 2 3	نعم كليا" نعم جزئيا" كلا	(انتقل الى الرقم56)
53	HELP	في حدا عم يساعدك؟	1 2	نعم كلا	(انتقل الى الرقم 56)
54	HP_TM	هيدا الشخص متفرغلك	1 2 3	كليا" / دايما" جزئيا" / مش كل الوقت بصعوبة	
55	HP_RL	شو علاقتك بالشخص يلي عم يساعدك ؟	1 2 3 4 5 6 7 8	أمي أبي أختي أخي أبنتي أبني زوجتي/ زوجي غيره حدد	

تقييم ADL –Scale

			كلا	نعم جزئياً	نعم كلياً
		حاليا"			
			0	**1**	**2**
56	ADL1	عندك صعوبة بالإستحمام.؟			
57	ADL2	عندك صعوبة بلبس وشلح التياب؟			
58	ADL 3	عندك صعوبة بإستعمال الحمام؟			
59	ADL 4	عندك صعوبة بان تقعد أو تقوم عن كرسي أو من الفرشة؟			
60	ADL 5	عندك صعوبة بضبط البول؟			
61	ADL 6	عندك صعوبة بالأكل؟			

الحاجة للا جهزة المساعدة حاليا"

62	ASSD_ND	حاليا" هل عم تستعمل اي جهاز مساعد بسبب الاصابة؟	1 نعم 2 كلا	(انتقل الى الرقم64)

مصدر تأمين الجهاز

جيبك الخاص	الدولة	جمعية اهلية	مصدر حزبي	مساعدة من اصدقاء/اهل	غيره حدد
S1	S2	S3	S4	S5	S6

63	شو نوع هالجهاز؟	T1	طرف اصطناعي
		T2	كرسي متحرك
		T3	سرير خاص/ فرشة ماي
		T4	عكيزات /عصا
		T5	جهاز للسمع /سماعة
		T6	غيره حدد

64	ASS_N	هل انت بحاجة هلق لأي جهاز مساعد (و لا تملكه)؟	1 طرف اصطناعي 2 كرسي متحرك 3 سرير خاص/ فرشة ماي 4 عكيزات /عصا 5 جهاز للسمع /سماعة 6 غيره حدد

مساعدات بعد الإصابة

65		بعد الإصابة، هل اندفعلك تعويض مادي من حدا؟	1 نعم 2 كلا(انتقل الى الرقم 67)
66		مين مصدر التعويض؟	حدد
67		حدا عم بيراجع اوضاعك هلق؟	1 نعم 2 كلا

للاشخاص يلي صار عندهم اعاقة بسبب لاصابة

68	DISA_CRD	هل عندك بطاقة معوق؟	1 نعم 2 كلا	(انتقل الى الرقم70)
69	CARD_T	اي نوع من الخدمات بتغطيلك؟	حدد	

أسئلة موجه للمصاب نفسه : استبيان عن الوضع النفسي للمصاب				
هلق حاسألك مجموعة من الأسئلة تتعلق بحالتك الصحية العامة بالاسابيع القليلة الماضية كل سؤال فيك تجاوب واحد من أربع إجابات رح أعطيك ياها.				
70	GHQ01	قادر تركز على شغلك متل العادة؟	1	أكثر من العادة
			2	لا فرق مثل العادة
			3	أقل من العادة
			4	أقل بكثير من العادة
71	GHQ02	مش عم تنام منيح لأنك موتر (عتلان هم)؟	1	لا أبداً
			2	مش أكتر من العادة
			3	أكثر من العادة
			4	أكثر بكثير من العادة
72	GHQ03	حاسس حالك عم تفيد الناس حولك؟	1	أكثر من العادة
			2	لا فرق مثل العادة
			3	أقل من العادة
			4	أقل بكثير من العادة
73	GHQ04	حاسس حالك قادر تاخد قرارات متل العادة؟	1	أكثر من العادة
			2	لا فرق مثل العادة
			3	أقل من العادة
			4	أقل بكثير من العادة
74	GHQ05	حاسس حالك دايماً تحت ضغط؟	1	لا أبداً
			2	مش أكتر من العادة
			3	أكثر من العادة
			4	أكثر بكثير من العادة
75	GHQ06	حاسس حالك مش قادر تتخطى مشاكلك؟	1	لا أبداً
			2	مش أكتر من العادة
			3	أكثر من العادة
			4	أكثر بكثير من العادة
76	GHQ07	حاسس حالك مبسوط انت وعم تعمل شغلك كل يوم؟	1	أكثر من العادة
			2	لا فرق مثل العادة
			3	أقل من العادة
			4	أقل بكثير من العادة
77	GHQ08	بتحس حالك قادر تواجه مشاكلك؟	1	أكثر من العادة
			2	لا فرق مثل العادة
			3	أقل من العادة
			4	أقل بكثير من العادة
78	GHQ09	حاسس حالك مش مبسوط وزعلان؟	1	لا أبداً
			2	مش أكتر من العادة
			3	أكثر من العادة
			4	أكثر بكثير من العادة
79	GHQ10	فقدت ثقتك بنفسك؟	1	لا أبداً
			2	مش أكتر من العادة
			3	أكثر من العادة
			4	أكثر بكثير من العادة
80	GHQ11	بتحس حالك ما ألك فايدة؟	1	لا أبداً
			2	مش أكتر من العادة
			3	أكثر من العادة
			4	أكثر بكثير من العادة

81	GHQ12	حاسس أنك قادر تكون مبسوط برغم كل الظروف المحيطة فيك؟	1	أكثر من العادة
			2	لا فرق مثل العادة
			3	أقل من العادة
			4	أقل بكثير من العادة

82 - لشو انت بحاجة هلق؟

83- في شي بتحب تقوله/ تضيفه؟

هل بامكاننا نعاود الاتصال فيك؟ ☐ **نعم** ☐ **لا**

اذا امكن ناخد رقم تلفون: ----------

شكرا"

References

Brennan RJ and Nandy R (2001). Complex Emergencies: A major global health challenge. *Emergency Medicine*, 13:147-156.

Burkle FM. (2006). Complex humanitarian emergencies: A review of epidemiological and response models. *Journal of Postgraduate Medicine*, 52(2):110-115.

Bruton A. and Breen C (2002). Older refugees in humanitarian emergencies. *The Lancet*, 360:47-48

Chaaya.M, Afifi.R, Yamout.R, (2006). Assessment of Psychosocial status of civilians in Lebanon immediately after the July 2006 war. (unpublished manuscript).

Coupland RM. (1996). The effect of weapons on health. *Lancet*, 347: 450-51.

Dewaraja.R, Kawamura.N, (2006). Trauma intensity and post traumatic stress: implications of the tsunami experience in Sri Lanka for the management of future disasters. *International congress series* 1287: 69-73.

De Goyet. C, (2000). Stop propagating disaster myths. *The Lancet*, 356: 762-764.

Eldar. R, Jelic M,(2003). The association of rehabilitation and war. *Disability and Rehabilitation*, 25 (18): 1019-23.

Fosse E, Husam H, Giannou C. (1988). The siege of Tripoli 1983. War surgery of Lebanon. *J of trauma,* 28: 660-63.

Ghobarah HA, Huth P, Russett B. (2004). The post-war public health effects of civil conflict. *Social Science & Medicine*, 59: 869-884.

Harlem Brundtland.G (2000). Mmental health of refugees, internally displaced persons and other populations affected by conflict. *Acta psychiatr scand* 102(3): 159-161

Holdstock D. (2002). *Morbidity and mortality among soldiers and civilians*. In Taipale et al. (eds) War or Health? Zed Books: London.

Hutton D. (2006). Older people in emergencies: A framing document for policy and program development WHO, Geneva Switzerland.

Karam EG. Howard DB. Karam AN, et al. (1998). Major depression and external stressors: the Lebanon wars. *Eur Arch Psychiatry Clin Neurosci*; 248:225–230.

Kuh. DJL, Wadsworth MEJ, Yusuf EJ, (1994). Burden of disability in a post war birth cohort in the UK", *Journal of Epidemiological community health*, 48, 262-9.

Lawton, M.P., & Brody, E.M. (1969). Assessment of older people: Self-maintaining and instrumental activities of daily living. *Gerontologist,* 9(3): 179-186.

Lebanon under siege, (29/8/2006). Higher Relief Commission Daily Situation Report," http://www.lebanonundersiege.gov.lb. Retrieved on October 10th, 2006.

Rustemeyer J, Kranz V, Bremerich A (2007). Injuries in combat from 1982–2005 with particular reference to those to the head and neck: A review. *British Journal of Oral and Maxillofacial Surgery* 45, 556–560.

Scott. R, (1988). British military surgery, 1945-1985. *Journal of Trauma*, 28, S83-5

Sibai AM, Fletcher A, Armenian HK (1996). Variations in the impact of long-term wartime stressors on mortality among the middle-aged and older population in Beirut, Lebanon, 1983–1993. *American Journal of Epidemiology*, 154(2): 128-137.

Sibai.A, Shaar.N, El Yassir.S (2000). Impairments, disabilities and needs assessment among non-fatal war injuries in South Lebanon, Grapes of wrath, 1996. *Journal of Epidemiology and Community Health,* 54, 35-39.

Sibai AM (2007). *Disability in Lebanon: A statistical Portrait*. For the Youth Association of the Blind-YAB, National Inclusion Project, CDR, Lebanon (64 pp.).

Sider VW & Levy BS. (2002). *The health and social consequences of diversion of economic resources to war and preparation for war*. In Taipale et al. (Eds). War or Health. Zed books: London.

Spiegel.P, (2005). Differences in world responses to natural disasters and complex emergencies. *Journal of American medical association*, 293(15):1915-1918.

Stong GC, Kalenian MH, Hope JW, (1993). Medical evacuation experiences of two 7th Corps medical companies supporting Desert Shield/Storm. *Mil Med*; 158:108-113.

Srinivasa MR. and Lakshminara AR (2006). Mental health consequences of war: a brief review of research findings. *World Psychiatry*, 5(1): 25–30.

Toole MJ and Waldman RJ (1997). The public health aspects of complex emergencies and refugee situations. *Annu. Rev. Public Health.* 18:283–312

Toole MJ, Waldman RJ. (1993). Refugees and displaced persons. War, hunger, and public health. *JAMA*, 270, 600-605.

Utzinger. J, Weiss. M.G, (2007). Editorial: Armed conflict, war and public health", *Tropical Medicine and International Health,* 12 (8): 903–906.

World Health Organization (2004). *The world Health Report 2004: Changing history.* World Health Organization, Geneva.

World Health Organization (2006). *Fact sheet: Older persons in emergencies*. www.int/hac/crises/international/middle_east/Lebanon_older_persons/August 2006. Retrieved September 27th, 2006.

World Health organization (2006). Lebanon Country situation overview (17 July 2006).

Zwi A, Uglade A. (1989). Towards an epidemiology of political violence in the Third World. *Soc Sci Med*, 28, 633-642.