

Child health in man made disasters

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Introduction

War is the biggest violation to human and children's rights. With modification of safe environment, health, education, life style, nutrition. Denying children security, law protection and justice, this is a violation of all civilian rights. The goal of this article is to present the challenges, Lebanese physicians and hospitals face, during the times of war that started in the 1970s and still suffering its consequences till today.

Common problems during war

- I. Lack of Electricity
- II. Lack of Food and Nutrients, Malnutrition
- III. Storing and Acquiring Medications
- IV. Lack of Expertise and Medical Personnel
- V. Environmental Impact

Electricity problems

Lack of fuel, absence of generators may lead, during catastrophes, to an unexpected cut in the supply of electricity. Hospitals are generally not prepared for war or any catastrophic situation.

Lack of power means:

- No operating rooms
- Manual ventilation for hours
- No incubators for premature babies
- No monitoring to prevent apnea
- No pump for perfusions
- No light for appropriate work
- Working in septic conditions
- No sleeping or rest for treating personnel

No cold chain for preserving drugs or vaccines. Normal calendar of immunization cannot be respected because you are no longer sure of the quality of the vaccines. In Lebanon, during the war in the 80's, we had numerous cases of Polio. Routine policy was to give oral Polio vaccine for children every year, starting from 2 months until they reach 15 years of age. Same policy was recommended for other vaccines, and after war, first objective of UNICEF was to create a chain of cold for vaccines.

Malnutrition

Lack of food, of electricity, transport and communications will eventually lead to imbalanced food distribution and quality, leading to malnutrition exacerbated by the spread of diseases.

Storing and acquiring medications

During war or catastrophes, nothing works as usual, for example

there's no more ministry of health or social security. Insurance companies do not give coverage for patients for damage due to war. Absence of blood, plasma, antibiotics, surfactant or special medication has been reported during times of war or crisis.

Case report I

A precious baby born after 7 years of infertility, at 27 WGA, weighting 970gr at birth: Developed RDS, Extubated on day 8, Septicemia at E. Coli on day 10, Was diagnosed with NEC on day 15, Feeding was started on the 27th day, Started gaining weight, On the 44th day, his weight was 1450gr.

Then suddenly, he suffered from poor feeding apneas, respiratory distress. Chest X-ray showed bilateral pneumonia, classical antibiotics started, chest tube and respirator. Blood culture and sputum culture were negative for bacteria, but mycosis heavily grew on special cultures both in blood and sputum. But unfortunately, no anti-mycosis drugs were available. Parents asked relatives in Paris to send the needed drugs. Brain ultrasound was periodically performed and was normal until the last day. Unfortunately the baby died 2 hours before the medication reached the hospital, a total disappointment for the parents, as for the medical team, after 50 days full of hope.

Lack of expertise and medical personnel

Doctors, nurses, and residents could sometimes arrive at the hospital risking their lives during the journey. No on-call list could be respected. Jeopardizing your life during your displacements is a dangerous risk that should not be underestimated. I remember a mortar exploding in front of me killing 2 people, when I tried moving back, another mortar exploded 2 meters behind me, therefore. I was obliged to stay for 3 hours in a shelter.

Environmental problems

An increase in the occurrence of asthma has been related to air pollution following: Heavy shelling and destruction of buildings and

Living in undergrounds and shelters. Lack of hygiene and of clean drinking water also leads to poisoning and dehydration and infectious gastro-enteritis.

Chemicals released from weapons following war may have a negative impact on children's health and may be related to an increased frequency of occurrence for some pathology like leukemia's. We have noted an increase in frequency of malignant diseases in Lebanon. Studies are being currently done to determine if it could be related to the war.

Possible Reactions of Children and Youth to Disasters:

- Preschoolers-thumb sucking, bedwetting, clinging to parents, sleep disturbances, loss of appetite, fear of the dark, regression in behavior, and withdrawal from friends and routines.
- Elementary School Children-irritability, aggressiveness, clinginess, nightmares, school avoidance, poor concentration, and withdrawal from activities and friends.

Table 1 Prevalence of Mental Disorders by Study Periods in the Assessment Sample^{1,2}

	Time Periods		Post – War									
	Pre-War		4 weeks		3 months		6 months		12 months			
	N	%	N	%	N	%	N	%	N	%		
Depression	12	3.13	91	23.58	9	7.44	0	-	8	5.59		
SAD	16	4.15	69	17.88	5	3.73	9	6.52	6	4.20		
PTSD	6	1.55	93	24.09	8	5.67	4	2.84	2	1.41		
Any	32	8.29	152	39.38	19	13.29	11	7.69	13	9.09		

About 10% of all children and adolescents meet full criteria for either PTSD, MDD or SAD one year after war exposure. More children have significant psychiatric symptoms with impairment not meeting full criteria for disorder Pre-war disorders, family violence factors and witnessing war events are powerful predictors of persistence of disorders. Mental Disorders other than PTSD must be investigated and targeted for intervention after traumatic events including wars. Children with specific risk factors such as high war exposure, family violence and pre-war psychiatric disorders should be targeted for interventions.

Sexual abuse

Sexual abuse of children is not a rare occurrence. Abuse is reported in all social levels, in all parts of the world, in all races and cultures. Despite increased public awareness, the true extent of child sexual abuse remains hidden. It has been shown that war and catastrophes increases the risk of sexual abuse due to dislocation, loss of family structures and promiscuity.

Overall estimated children refugees due to war in the Lakes area in Africa estimated by World Vision are 1.4 Million. More than half of these children were at one time subject to sexual abuse, Study were done by "World Vision" that included children aged from 10 – 18 y. living in Burundi, Congo, Uganda, Rwanda, Tanzania with reports of sexual abuses. This study shows that sexual abuses were mainly committed by other refugees, security members, teachers, or medical personnel.³

In Burundi according to Human Rights Watch in 2006 after 13 years of civil war, 400 adolescents from 13 to 18 years were in jail and victim of sexual abuses, torture, and lack of food, of education they are treated like adults and have no right of any kind of help or legal assistance.⁴

- iii. Adolescents-sleeping and eating disturbances, agitation, increase in conflicts, physical complaints, delinquent behavior, and poor concentration.

Manmade disaster: Psychiatric impact

War and catastrophes has certainly a dramatic impact on mental health of children. Karam and Fayyad^{1,2} conducted a Lebanese study on mental effect of war traumas on pediatric population.

The Purpose of Study is to investigate naturalistic mental health outcome and impact of war on children and adolescents.

"The Grapes of Wrath Operation", a military operation in South Lebanon in April 1996 over 15 days. Families in their homes or shelters were exposed to shelling and bombardment by tanks, airplanes and warships. Entire communities were exposed to intensive shelling, resulting in hundreds of fatalities, thousands of casualties, destruction of homes and mass displacement (Table 1).

According to United Nations Office for Drugs and Crime UNODC in Lebanon and figures are almost the same every year since the end of the war, on a total population of 3 million persons, with 38% of them between 0-18 years, (around 1080000 in this period of age).⁵

1. 1650 cases are reported by social workers every year (14%)
2. Only 150 cases of them are reported every year to official authorities (3 cases every week -10%).
3. 58% of them are sexual aggressions.
4. 41% are physical aggressions.
5. 1% is due to negligence.
6. Age of children is in 78% between 13-18years.
7. Aggressor is known by the child in 72% of cases and is part of the family.

Sexual Abuse after July 2006 war against Lebanon

According to a study by Usta and al,⁶ 16.1% of children were victims of any kind of sexual abuse.

- 12.5% were sexually aggressed.
- 4.9% were submitted to sexual movies or pictures.
- 55.8% are aggressed by a relative, a stranger in 27%, and a friend in 21,6%.
- 10.3 is the average age of aggression.

Risk factors are areas of conflicts, absence of parents, divorce mental and physical handicap, drugs and alcohol.

Boys are more frequently aggressed than girls.

- 54.1% have reported the aggression to someone mainly the mother

- 23.2% did not relate the event because they were afraid of revenge by the aggressor.

In India, according to Prayas, on a population of 1 billion people, with 40% of them being below 18 years, 50% of this population was abused 25% of them sexually abused, 40% physically aggressed, the rest economically aggressed.⁷

In conclusion, it seems that war is not a predisposing factor for sexual abuse, while dislocation promiscuity and living in refugees areas seems to increase sexual abuses.

Childhood and terrorism

According to the report of the United Nations Secretary-General, for protection of childhood in armed conflict children are more and more involved in terrorism activity and suicidal attacks mainly in Iraq, Burundi, Congo, Somalia, Soudan, and Tchad. 300,000 children are involved in armed conflicts worldwide. In Lebanon, after a year of the cessation of military acts in august 2006 conflict with Israel, cluster bombs took the lives of 4 children and left 66 severely injured.⁸

Children in jail

In Iraq, 500 children are detained in American military jails, and 1,000 children in military Iraqi jails.

In Israel, 400 children are detained in military jails. All these children are detained without any adequate judgment or trial. 16 countries are using children in armed conflicts.⁸

32 Children have been sentenced to death since January 2005 in 5 countries.⁹

- 26 in Iran.
- 2 in Saudi-Arabia.
- 2 in Sudan.
- 1 in Yemen and 1 in Pakistan.
- 100 children in these countries are waiting in death Corridor for appeal.

Drug abuse

A study done in 2001 by Karam et al.¹⁰ targeted High School Students in Lebanon, revealed lifetime prevalence of 69.1% for alcohol use (M: 74.9%, F: 62.9%). Alcohol abuse of 7.4% (DSM-IV) Mean age of onset of 1st use: 13.26 ± 2.78 yrs. Age of first ever drinking ≥ 12 drinks in one year: 15.00 ± 1.81 yrs. Age of 1st drunkenness: 15.31 ± 1.84 yrs (Table 2).

Compared to other countries in the area figures seems the same, and it seems war is not a predisposing factor for drug abuse, while Religious beliefs and Social Milieu including Family influence and Perception of parents and attitudes towards trying illicit drugs, can all affect the prevalence and abuse of mood regulators of all kinds (Figure 1).

Although Convention of the Rights of Children banned fewer than 18 years old children from working, 200 millions of children are working in developing countries among them 180 million under hazardous work places.¹¹

Table 2 Substances Ever Use (other than Alcohol)

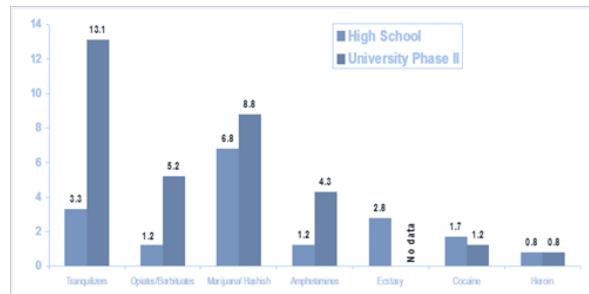


Figure 1 National Awareness Campaign to Prevent Child Labor and Promote Education.

International Labor Organization (ILO) convention number 138 in 1973 defined minimum age for work as 15 years; requirement is finishing minimum level of education required in the country.¹¹

In Lebanon Access-Lebanon fixed the age to 14 years in collaboration with NGO as Rene Moawad Foundation and Cudmos project (Figure 2).



Figure 2 National Awareness Campaign to Prevent Child Labor and Promote Education.

Street child

War and political troubles induces misery and enhance displacement of children from rural areas to urban cities. Hoping

better life, and earning better salary they leave their families and live in the streets. In Arab World, 28000 children were living in the street in Yemen, 4000 in Morocco and 70000 in Khartoum, according to Arab Council of Childhood.¹²

In Afghanistan, according to UNICEF and a local NGO ASCHIANA, in 2005, 30000 children were in the streets in Kabul. In 2007 due to war, 60 to 70000 children are living in Kabul's streets orphans of war earning their life and sometimes giving food to younger brothers.¹³

According to Iraqi Red Cross, more than 33% of handicapped children are victims of war and bad treatments. UNICEF in Iraq said it needs 42 million dollars only to give water and food for Iraqi children. Only 30% of children in Iraq have access to drinking water and cases of Cholera have been declared.¹⁴

In Turkey, according to FAO, more than 40000 children less than 14 years are working in labor force mainly cotton fields. Turkey engaged itself with UNICEF to stop children at work completely before 2016.¹⁵

Street Children and Education in Lebanon: Table (3 & 4).

Table 3 School attendance among Lebanese Children¹⁶

	5-9 years		10-14 years		15-18 years	
	M	F	M	F	M	F
Did not enter school	0.6	0.7	0.7	0.7	1.0	1.1
Stopped school	0.2	0.1	5.1	3.7	30.9	1.1
In school	71.5	67.5	94.2	95.6	68	76.1
Other	27.7	31.7	-	-	0.1	-

Table 4 Lebanese Children Labor Involvement¹⁶

Age	% Working (Labor Force)	Proportion of Girls
<10	0	-
10	0.3	
11	0.4	
12	1.2	9.7%
13	2.6	
14	4.5	
15	6.4	
16	10.7	
17	13.1	12.8%
18	15.1	

History of schooling among Lebanese boys and girls (%) by age and sex.⁹

Boys and girls' involvement in the labor force by age and sex.

War trauma

- I. Blind Shelling
- II. Car bombs
- III. Burns
- IV. Mines and cluster bombs
- V. Child soldiers

In addition to increase septicemia, infections and meconium inhalations due to bad follow-up or bad conditions of delivery, new situations were encountered in ICU. War trauma pathology was the most prevalent (Figure 3).



Figure 3 Patient with multiple injuries due to random bomb shellings.

Case Report 2

A 17 days old baby arrived to the NICU, following blind shelling in a supposed peaceful area. Suffered a Remarkable open head wound and cerebral substance apparent to the exterior environment. Patient was intubated, and CT scan performed showed a shrapnel in the brain. Neurosurgeon suggested that intervention would be more damaging than beneficial. The baby manifested severe brain damage, and psycho-motor retardation. The young parents left Lebanon with their only handicapped child and now live in France refusing to conceive another or to ever return to Lebanon. This example is one of hundreds of newborns we have seen in such situations (Figure 4).

Case Report 3

Another quiet morning in Lebanon following a "cease fire", the silence was broken by 2 subsequent explosions in a school where children were playing peacefully in their playground area 200 meters distance from our Hospital. During the first minute five dead children ages between 5 and 7 years were brought to our ER. Followed by 35 severely injured children of same age group with trauma affecting:

- Brain with severe neurological sequel,
- Extremities leading to amputations,
- Abdomen with open wounds revealing the viscera and intestines,
- Penis and testis, leading to amputation of affected organ



Figure 4 The random bombing of civilian areas taking more innocent casualties.

Three more children died few days after. 20 children were heavily handicapped and have been transferred outside Lebanon for special care (Figure 5).



Figure 5 One of the many innocent children, victims of random bombing.

Same scenario occurs when everything seems to be calm around, you hear a sudden explosion and also in few seconds it turns into hell. Ambulances coming every 5 seconds, 10 or 20 people entering in minutes to ER of all hospitals in the area: people who were sleeping in beds, in homes or in the street, with their only mistake being near the bombed car at the wrong time. A considerable number of the victims are newborns and innocent children.

Just think about consequences regarding structure of those families having to deal with death, destruction of homes, cars and life handicaps of all kind. Also try to think of people's minds. ER physicians, residents, students, and nurses who have to deal with those situations frequently. Hard to say whether there was more blood or tears around Figure (6-8).

Burns

Due to new kinds of bombs (phosphorus, fragmented, Napalm...) there have been several cases of severely burned babies and children reported. Immediate and delayed management lead to a very bad prognosis.



Figure 6 One of the many innocent children, victims of random bombing.



Figure 7 One of the many innocent children, victims of random bombing.



Figure 8 One of the many innocent children, victims of random bombing.

Mines and cluster-bombs

Israeli landmines left in Lebanese territory also claimed children's lives, killing 20 and injuring 48 between 1998 and 2004.¹⁷ Recent conflict in August 2007 has also left 1 million of cluster-bombs that have caused till now the death of many children and will cause more damages for years to come. Only 100,000 of these bombs have been removed till now. Psychosocial programs to help child victims of conflict were offered after the civil war. By 2004 the Social Affairs Ministry had established three centers for the rehabilitation of these children; Services remained inadequate.¹⁸

Child soldiers: Figure 9**Figure 9** Children being raised on the ideas of war since an early age.

United Nations Past Secretary General Kofi Annan released a report to the Security Council that clearly identifies 23 countries, governments and political parties that recruit children to use as soldiers among them: Afghanistan, Burundi, Congo, Liberia, and Somalia....¹⁹

Denied childhood and often subjected to horrific violence, an estimated 200 to 300,000 children are serving worldwide as soldiers for both, rebel groups and government forces.²⁰

A meeting was attended by 58 countries and held in Paris in 2007 organized by UNICEF and France and Principles of Paris were adopted by participating countries actualizing Principles of Le-Cap which were adapted in 1997.²¹

The goal was to:

- Prevent recruitments of minors as soldiers,
- Free all children soldiers from jail, and
- Prevent them from legal pursuits.

10 out of 12 affected countries accepted the terms and conditions set by the UN.

With new weapons that are lightweight and easy to fire, children are more easily armed, with less training than adults. Many of these children, some younger than 10 years old, have witnessed or taken part in acts of unbelievable violence, often against their own families or communities. They are easily manipulated and encouraged to commit grievous acts, which they are often unable to comprehend. Many girl soldiers are expected to provide sexual services as well as to fight.²¹

Child soldiers serve armed revolt groups such as the Khmer Rouge, the Shining Path of Peru, Palestinian groups, and militias of Angola, Colombia, Lebanon, Liberia, Sierra Leone, Sudan, Uganda and Philippines. In Colombia, thousands of children, some as young as eight years old, are forced by guerillas to collect intelligence, assemble and install mines, and participate in ambush attacks as advance troops.²²

In Congo, 30000 children were used as soldiers according to World Bank figures. Mean age of recruitment was 12.07 years

- For 12% of them both parents were deceased.
- For 56%, both parents were alive
- 71% have decided to be engaged by their own will and decision while 11% has been forced.

Average serving was 32 months, 66% have learned using weapons before learning reading, According to the Jesuit Refugee Service, Save the Children, Amnesty International.²²

In Lebanon, children as young as 12 years of age are drafted to certain militia. Those who refuse are at risk for suffering and their families severe unpleasant consequences. A high religious authority has said that there is no specific age when a child becomes an adult and that it depends on the individual Figure 10&11.

**Figure 10** Child Soldiers involved in Lebanese territorial recent conflict between Tebbaneh and Jabal Mohsen areas in 2014.**Figure 11** Child Soldiers involved in Lebanese territorial recent conflict between Tebbaneh and Jabal Mohsen areas in 2014.

Lebanese resistance did claim responsibility for several armed attacks carried out by minors. Some Lebanese party involves children in political rallies in 2002 and 2003, running a social group for under-15s called the Muhdi brigades... Child human shields have been also used in conflicts. Recently Israeli's organization for Human Rights B'Tselem has reported the case of an 11 years old girl used as human shield to enter in a suspect house and this against Israeli's Army orders.

A new kind of war: block us

In the last Israeli- Lebanese war we were confronted to a new kind of war, bloc us. More than 78 bridges relying different areas of Lebanon together and major roads and high-ways were bombarded and destroyed in a way that all transport of injured people were impossible. We were in a situation where hundreds of children were injured but they died before reaching hospitals, main hospitals did not treat injured children for they could not reach them.

Transport of injured children

In war even Red Cross is useless, many ambulances were bombed, many Red Cross volunteers were killed in duty, one thing is sure: Geneva Convention is either forgotten or not applied...Figures 12-14.

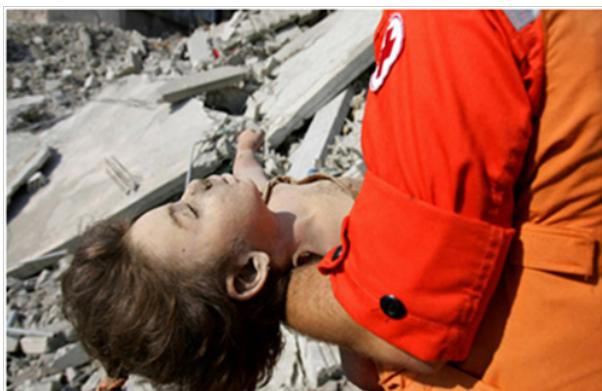


Figure 12 Children victims of random bombing.



Figure 13 Red Cross volunteers victim of targeted bombing during the 2006 war with Israel.



Figure 14 Red Cross Volunteers saving children under the worst war circumstances putting their lives at risk.

New perspective

Military pediatrics is a new prospect that has been applied in US army recently and has shown benefits in war times like in Kuwait, Iraq, Afghanistan, Bosnia or Kosovo. Military pediatricians are included in the army and it has shown improvements in health of populations and specially pediatric population in war areas.

Stories of hope

N. B. from Lebanese Red Cross on 22 May 1985 removing a baby after the explosion of a bombed car in Sin-el-fil area. 80 people died and 172 were wounded. The grand-mother of the baby, 2 brothers and the aunt died, the father lost one arm, and the mother was severely burned third degree. 21 years after, baby J.G. got married. The god-father N.B. of the wedding was the young N.B. from Red-Cross who saved the baby. P.B. the photographer who took this picture from A.F.P. won an international prize for his picture and he was asked to take the picture of the wedding. Three of them are now best friends and let us hope their troubles will end and they will have a new life in peace in their country.

Conclusion

We hope that all International organizations working for the sake of children will make everything to withdraw children from violence and we hope that all countries in conflict will make their best to avoid damage to children and protect them as much as possible according to the Convention of the Rights of Children. Many international and national organizations have laws to neutralize children, innocent lives and medical institutions from the consequences of war. The International Humanitarian law has clear statements to limit the side effect of armed conflicts and protect the people that are not directly involved.²³

Acknowledgments

None.

Conflicts of Interest

None.

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