RESEARCH STUDY

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Quality of Life among People Survived from Terroristic Explosions: A Retrospective Cohort Study

Article Information

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Abstract

Background: Increasing interest in quality of life (QoL) is the new approach for understanding and improvement of health care. Although there are many studies about quality of life, there is deficiency of data about quality of life of peoples survived from terroristic explosions.
Objectives: To study the QoL for peoples survived from terroristic explosions and compare it with that of a controlled people.
Methods: This study was conducted between, 1st of July till 31st of December 2013. The sample of this study was collected from peoples attending the outpatient clinics in four primary health care centers, Baghdad city (2 from Rusafa and 2 from Karkh). 183 individuals proved to be exposed to terroristic explosion and 199 individual not exposed to such event were recruited and Arabic version of the World Health Organization (WHO) self-reporting questionnaire (WHO-QoL-BRIEF) was used to assess the QoL.
Results: This study revealed that peoples exposed to event of terroristic explosion show a serious defect in all domains of QoL (physical, psychological, social and environmental) as compared with that for non exposed peoples to such accidents in the same areas of the study.
Conclusions: This study showed that peoples survived from terroristic explosions have a low QoL indicators as compared with those not exposed to such trauma .

Introduction:

The word terrorism was first used in France to describe a new system of government adopted during the French revolution (1789-1799). The regime de la terrear (reign of terror) was intended to promote democracy and popular rule by ridding the revolution of its enemies and thereby purifying. However, the oppression and violent excesses of the terror transformed it into a feared instrument of the state. The word, however, did not gain wider popularity regarding this event until late 19th century when it was adopted by a group of Russian revolutionaries to describe their violent struggle against Tsarist rule. Terrorism then assumed the more familiar antigovernment associations it has today and since before the end of the Cold War, terrorism acts have had major effects on tourism destinations. As a result, the 'shadowy, mobile, and unpredictable' forces of terrorism are becoming an unfortunate part of the travel and tourism landscape. [1]

Since 2003 till nowadays Iraqi cities from time to time exposed to frequents types of terrorist acts (explosions) especially poor and over crowded cities, this lead to different types of harm among exposed populations to such acts (death, physical disability , psychological disability, loss of property, loss of loved subject). In the period between 2003 and 2010 there were more than1000 suicide bombings in Iraq, resulting in more than 12 000 civilian deaths [2] The constitution of the WHO defines health as "A state of complete physical, mental, and social well being not merely absence of disease or infirmity" …"It follows that the measurement of health &the effects of health care must include estimation of well-being and quality

of life related to personal view. WHO defines quality of life as an individual's perception of their position in life in the context of the culture &value systems which they live in [3]

Quality of life (QoL)has been defined as a broad-ranging concept affected in a complex way by such things as physical health, psychological state ,level of independence ,social relationships and relationship with the environment[4] The subjective nature of quality of life allowed e researchers all over the world to use the WHO derived instrument, which was translated to almost 30 languages across cultures ,proved credibility. Translation and back translation to Arabic language and implementation of the WHOQOL-BRE took place in 2000[5] .

This study implemented the Arabic version of WHO-QOL-BREF questionnaire which is derived from the primary WHO-QOL-100 originally developed by the world health organization. It included 26-item consisting four domains: Domain 1 concerning with physical capacity, Domain 2 psychological , Domain 3 social, relationships and Domain 4 environment, while two items cover the overall quality of life and general health profile[3,5].

Physical injury is significantly correlated with both higher disability and lower quality of life, while disability has significant negative correlation with quality of life. Physical injury causes several health problems that negatively affect not only the patient's physical condition but all aspects of their lives including their goals and communications, and more importantly their health-related quality of life[6,7]

There has been an increasing focus on the patients' perceived health-related quality of life (HRQOL) as an outcome after trauma [8] . HRQoL is an important outcome measure in people with serious injuries since they do not always return to their reinjure roles and activities [9,10]. And there is a growing evidence that patients with trauma have impaired HRQoL after trauma compared with reported pre-injury levels and with HRQoL in general populations [11,12,13]

The aim of this study is to quantify the QoL among peoples survived from terroristic explosions and compare the finding with that of apparently healthy individuals not exposed to such event, and highlight the significant of gender and presence of permanent disability in QoL among exposed persons.

The WHOQOL - Brief

This is a 26 - item self - administered generic questionnaire, being a short version of the WHOQOL - 100 scale [14] . The response options range from1 (very dissatisfied/very poor) to 5 (very satisfied/very good). It emphasizes the subjective responses rather than objective life conditions, with assessment made over the preceding two weeks. It consists of domains (or dimensions) and a facet (or sub - domain). The items on "overall rating of QOL" (OQOL) and subjective satisfaction with health, are not included in the domains, but are used to constitute the general facet on OQOL and general health (general facet). The more popular model for interpreting the scores has four domains, namely:

1. Physical health (consists of 7 items: Activities of daily living, Dependence on medicinal substances and medical aids, Energy and fatigue, Mobility, Pain and discomfort, Sleep and rest, and Work Capacity).
2. Psychological health (consists of 6 items: Bodily image and appearance, Negative feelings, Positive feelings, Self-esteem, Spirituality / Religion / Personal beliefs, Thinking, learning, memory and concentration).
3. Social relationships (consists of 3 items: Personal relationships, Social support, Sexual activity).
4. Environment (consists of 8 items: Financial resources, Freedom, physical safety and security, Health and social care: accessibility and quality, Home environment, Opportunities for acquiring new information and skills, Participation in and opportunities for recreation / leisure activities, Physical environment and Transport). Our analysis was based on this model. The domain scores of the WHOQOL-Brief can be computed in three ways. The first is a summation of the raw scores of the constituent items. The second and third ways consist of transforming the raw scores. In the second way, the raw scores are transformed into scores that range from 4-20, to be in line with the WHOQL -100 Instrument. The third way, which is the percentage scale maximum (% SM) is a standardized conversion of Likert scale data projected onto a 0-100 scale. The WHOQOL Group has provided guidelines for these conversions, the value of the later transformed score method (i.e., % SM) is that it can be used for making comparison with other scales[15] .

Methods:

This longitudinal, retrospective cohort, study was conducted in four primary health care centers in Baghdad city (2 from Rusafa and 2 from Karkh) between the first of July and 31st of December 2013. The centers were selected from Baghdad districts on the basis of vulnerability of these districts to terroristic attacks. The approval for this study was taken from the ethics committees in Rusafa and Karkh health directorates.

The records of the primary health care centers were used to assure the exposure status for participants. Subjects were eligible for the study and considered as exposed group if they were recorded in primary health care center as a victim for terroristic explosion, for at least 6 months period, and came for fallow up. The control group were selected from apparently healthy attendees came to the primary health care center as companions proved to be not exposed to terroristic explosions and matched with cases for age and gender. A verbal consent for the interview from each subjects was taken before data collection.

During the study period, 214 subjects were recruited as exposed and 214 age and gender match subjects as not exposed. The assessment

of their quality of life was done by using the Arabic version of the self-reporting questionnaire WHO-QOL-BRIEF for both groups. The questionnaires were completed by participants at the same day of interview.

Data was introduced into PC and checked for completeness. Only 188 exposed persons and 200 non exposed person data were full submitted to analysis. MINITAB V16 software were used for statistical analysis. Descriptive statistics as number, percents, tables and graphs were used and two sample T-Test and Chi-Square Test were used as inferential statistics. P-value < 0.05 was considered as level of significance for comparison between related variables

Results:

The results of this study were based on the analysis of 183 individuals exposed and 199 individuals not exposed to terroristic explosion. The exposed group was consisted from 109 (60%) males and 74 (40%) females, their ages ranged between 18 to 66 years with mean age of 39.6 years (± 0.94 SE), the mean age of male and female in this group was 38.5 years (± 1.2 SE) and 41.2 years (± 1.5 SE) respectively.

The non exposed group was consisted from 108 (54%) males and 91 (46%) females, their ages were extended from 18 to 64 years with mean age of 37.8 years (± 0.63 SE).The mean age of male and female in the control group was 35.8 years (± 0.77 SE), and 40.13 years (± 0.98 SE) respectively. Age and gender and distribution among exposed and non exposed individual in this study were statistically not significant. (Tables 1 &2)

Table 1: Distribution of 382 PHC centers attendants according to gender and exposure to terroristic explosion

	Male No (%)	Female No (%)	Total No (%)	
Exposed	109 (60%)	74(40%)	183 (100%)	P value=0.297 Chi sq=1.9 Df=1
Not exposed	108 (54%)	91(46%)	199 (100%)	
Total	217	165	382	

QoL among terroristic accident exposure persons was found to be significantly (P < 0.05) reduced in comparison to the QoL among those individuals selected as non exposed in all domains. It was interesting to note that even environmental domain reported significantly (P < 0.05) less QOL scores than did the non exposed individuals.

In the exposed group, the highest QoL score was observed in the environment domain (62.1 ±1SE) followed by social relationships (58.3 ±1.7 SE), physical domain (50.5 ±1.2 SE), and psychological health QOL scores (49.9 ±1.6 SE). (Table 3).

Table 3: QoL domains among people with and without history of exposure to terroristic accident.

QoL Domains	State	N	Mean	SD	SE	t-value	P-value	95% CI
Physical health	Exposed	183	50.5	16.6	1.2	17.98	0.001	-30.24,-24.28
	Not exposed	199	77.8	13.4	0.95			
Psychological health	Exposed	183	49.9	21.9	1.6	14.47	0.001	-30.61,-23.28
	Not exposed	199	76.8	13.1	0.93			
Social relationships	Exposed	183	58.3	22.9	1.7	7.85	0.001	-19.26,-11.54
	Not exposed	199	73.7	13.9	0.99			
Environmental	Exposed	183	62.1	13.8	1	5.84	0.001	-10.98, -5.45
	Not exposed	199	70.3	13.6	0.97			

Regarding the question about the overall QoL, it was found that 67% (n=123) of exposed individuals gave the response bad and very bad as compared to 13% (n=24) responded as good and very good. The differences in frequency of response was statistically significant as it compare to those non exposed (Table 4).

About the same findings were observed for the responses about overall health satisfaction (Table 5)

Table 4: Overall view for QoL responses among civilian exposed to explosion in comparison with those not exposed

View of overall QoL	Exposed No (%)	Not exposed No (%)	Total No (%)	
Very bad	61(33%)	6(3%)	67(17%)	Chi-Sq = 162.3 DF = 4 P-Value= 0.001
Bad	62(34%)	8(4%)	70(18%)	
Acceptable	36(20%)	58(29%)	94(25%)	
Good	22(12%)	107(54%)	129(34%)	
Very good	2(1%)	20(10%)	22(6%)	
Total	183(100%)	199(100%)	382(100%)	

Table 5: Overall of health satisfaction among civilian exposed to explosion in comparison with those not exposed

View of Overall of health satisfaction	Exposed No (%)	Not exposed No (%)	Total No (%)	Chi-Sq = 60.968, DF = 4
Very bad	78(43%)	22(11%)	100(26 %)	

Bad	49(27%)	47(24%)	96(25%)	P-Value = 0.001
Acceptable	35(19%)	72(36%)	107(28%)	
Good	15(8%)	42(21%)	57(15%)	
Very good	6(3%)	16(8%)	22(6%)	
Total	183(100%)	199(100%)	382(100%)	

QoL domains among exposed individuals when thy classified according to gender (Table 6):The results showed that female significantly affected more than male when they exposed to terroristic explosion for the domains of Physical health and Psychological health .

Table 6: Relationship between QoL Domains and gender among people exposed to terroristic accident.

QoL Domains	Gender	N	Mean	SD	SE	T-value	P-value	95%CI
Physical health	Male	109	52.7	15.5	1.5	2.22	0.028	0.58, 10.09
	Female	74	47.4	16.3	1.9			
Psychological health	male	109	51.5	21.8	2.1	2.3	0.022	1.01, 13.05
	female	74	44.5	19.1	2.2			
Social relationships	Male	109	59.7	22.2	2.1	0.99	0.32	-3.46, 10.3
	Female	74	56.3	23.9	2.8			
Environmental	Male	109	62.7	12.9	1.2	0.73	0.465	-2.68, 5.83
	Female	74	61.1	15.1	1.8			

The QoL among exposed individuals showed further more reduction in score if this individual have permanent disability during the terroristic exposure. There was significant difference in QoL domains among those with permanent disability as it compared with those not having such disability among exposed group. The sequence of significance level was psychological, physical, social , and environmental (Table 7).

Table 7: Relationship between presence of disability and QoL domains among people exposed to terroristic accident

QoL Domains	Disability	N	Mean	SD	SE	T-value	P-value	95%CI
Physical health	**Yes**	80	41	11.3	1.3	-8.63	0.001	-20.79,-13.03
	No	103	57.9	15.3	1.5			
Psychological health	**Yes**	80	34.7	17.1	1.9	-10.48	0.001	-32.04,-21.88
	No	103	61.6	17.5	1.7			
Social relationships	**Yes**	80	44.2	21.3	2.4	-8.51	0.001	-30.90,-19.26
	No	103	69.3	17.6	1.7			
Environmental	**Yes**	80	59.5	13.2	1.5	2.24	0.027	-8.52, -0.53
	No	103	64.1	14	1.4			

Discussion:

This longitudinal, retrospective cohort, represented two community samples of people living in the same areas but, they differ in history of exposition to trauma of terroristic explosion. They were recruited to find the effect of such trauma on their quality of life on both of them.

In reviewing the different domains of QoL for both study groups, QoL scores were significant higher in non exposed groups in all domains. With respect of the physical domain: the exposed group significantly affected more than control, this is expected from the fact that the net results of exposure to such trauma of explosion end with different type of injury from superficial wound to more serious injuries and permanent disability, the poor physical health among injured people is due to musculoskeletal effects and pain secondary to the trauma,

Kirsti Tøien,etal [16] in their study on quality of life in trauma patients compared with the Norwegian general population: The main findings in this study of trauma patients with different degrees of injury severity were that the mean scores for all subscales of health related QOL, were significantly lower than those observed in the Norwegian general population.

With respect with the psychological domain: the poor psychological health for traumatized group may be due to direct effect of trauma experiences and the reaction to its consequences (reaction to loss of loved subject, loss of previous functioning ,memory of trauma ,living with permanent disability ,..etc), this result in the line with the finding noticed by Mohammed J. Abbas, etal [17] , who study the prevalence rates of post-traumatic stress disorder (PTSD) and sub threshold PTSD (SPTSD) in the survivors of two suicide bombings in Karbala, Iraq, were they found that (43.4%) of exposed peoples ended PTSD and (22.9%) ended with SPTSD.

Michaels AJ , and coworkers ,[18] Studying the impact of psychological distress on health related QOL 12 months after a mixed trauma population with different levels of injury severity thy conclude that psychiatric morbidity (mainly post-traumatic stress disorder (PTSD) and depression) predicted worse health related QoL after injury.

With respect with social relationships domain: people with history of trauma significantly had reported poorer social

functioning as compared with that for non traumatized population, this is expected from poor physical and psychological health among people with history of exposure to trauma of explosion as compared with non exposed peoples which negatively affect social role functioning .

With respect of environmental domain, still people with history of trauma significantly had reported environmental health as compared with that for non traumatized population, as majorly of the victims who survived from such experiences still perceive their environments as unsafe after 6 moths and above of the trauma.

Regarding overall QoL score, it was found that 68.2% (n=128) of exposed individuals gave the response bad and very bad as compared to 12.7% (n=24) responded as good and very good. The differences in frequency of response was statistically significant as it compare to those non exposed. The same findings were observed for the responses about question about the overall health satisfaction, as Physical injury of explosion causes several health problems that negatively affect not only the patient's physical condition but all aspects of their lives including their psychological health, social functioning, environmental heath, and more importantly their perceived QoL and quality of health .

Physical health and Psychological health were significantly affected more for female than male when exposed to trauma of explosion, (Table 6) this may be due to that the body built of male more tolerable to physical trauma also female had high emotional reaction to trauma accident than male . Christensen MC,..etal[19] : in their study three months after severe trauma injury, report that female gender predicts poorer physical and mental functioning . The QoL among exposed individuals showed further more reduction in score if this individual have permanent disability during the terroristic exposure. There was significant difference in QoL domains among those with permanent disability as it compared with those not having such disability among exposed group. The sequence of significance level was psychological, physical, social, and last, environmental, this results may be due to that the disability used in this study is synonymous to loss of previous ability to work and consequently to more financial and social role functioning which make them suffering more and more perceiving life in black .

Conclusions:

This study showed that Iraqi peoples survived trauma of terroristic explosions , had poorer quality of life than people not exposed to direct trauma of exposed, female gender more affected than male, and the worst quality of life, and health satisfaction among people exposed to injury and end with permanent disability and losing the previous ability to work than controls who were not exposed to direct effect of such trauma .

Recommendation:

More attention need to pay from policy maker for those people survived from such major trauma especially those end with disability and loss of previous ability for functioning or loss of property need support in many areas e.g. (financial support, establishment of specialized center with multidisciplinary team work groups (specialized trauma center for rehabilitations) to deal with both physical and psychological disabilities .

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