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Research Article

Traffic Accidents: Their Impact on a Quality of Life Evaluation

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Abstract

Objective: Traffic accidents have increased in recent years, presenting a specific epidemiological profile therefore it becomes important to evaluate the General Quality of Life and Quality of Life Related to Health of individuals that have sequels resulting from traffic accidents, this is the objective of this research.

Methods: This is a census research and of transversal cut, using as instruments for evaluation of the quality of life the questionnaires WHOQOL-100, SF-36 and also the Social demographic Questionnaire, with a sample of 100 participants.

Results: 66% of males; 42% not married; 52% possess high school level of education; 86% between the ages group from 18 to 49 years old; 65% of injuries were located on inferior limbs, and 46%, on superior limbs. Using the WHOQOL-100 the average scores are obtained for all aspects, with the exception of Spirituality / Religion / Personal Beliefs. Using the SF-36 however, the smallest scores were collated for Physical Aspects, Emotional Aspects and Functional Capacity, and the largest for General Health Conditions.

Conclusion: Individuals with accident sequels present a damaged perception of their quality of life and the spiritual factor is seen as having an important bearing on their improved quality of life.

ABBREVIATIONS

TA: Traffic Accidents; QL: Quality of life

INTRODUCTION

In order to place the object of study in a context, Quality of life (QL) and Traffic Accidents (TA) some concepts are here presented. The term "Quality of life" has been often discussed in several research fields and is an extremely wide-ranged and subjective topic, and can be evaluated by means of both objective and subjective criteria. The World Health Organization (WHO) by means of the WHOQOL Group [1], considering the need to create instruments of evaluation and promote studies in the area (OMS), adopted a more generic concept and defined as: the individual's perception of their position in life, in the context of the culture and value system in which they live in relation to their personal objectives, expectations, standards and worries. It is a wide-ranged concept, affected in a complex way by their physical health, psychological state, level of independence, social relations with other individuals and also by their relation with specific characteristics of the environment.

In this definition, it is understood that the concept we refer to aims to study how the individual perceives the intrinsic aspects of his life. These can be identified as: family, social, environment and aspects of affection [2]. It is a subjective approach influenced by cultural, social and environmental contexts [3]. It is a more ample view with potential contributions for sociologic studies without referring to dysfunctions or other problems [4]. For the WHOQOL Group, the study of (QL) is based on three aspects: the subjectivity, which studies the individual's own perception in regards to [3]; his own health conditions and the non-medical aspects of his life [4]; multidimensionality and bipolarity, which are important aspects for this study. Considering all these factors, it becomes clear that QL can only be evaluated by the individual himself. Multidimensionality of course implies that QL includes various dimensions of the individual's life [3]; it acknowledges the different aspects existing in someone's life [4] and, in the evaluation, it is a vital factor to be considered. As for the bipolarity aspect, it stands for the presence of positive and negative elements, such as pain and mobility.

MATERIALS AND METHODS

This research has as its' objective, the evaluation of the General Quality of Life and Quality of Life related to an individuals' Health that present sequels as the result of a traffic accident (TA), using these instruments for evaluation: Social demographic Questionnaire, World Health Organization Quality of Life-100 (WHOQOL-100) Questionnaire and the Medical Outcomes Study-36-item Short-Form Health Survey (SF-36).

A quantitative method with transversal cut was used in an explorative descriptive study to probe the individual's social demographic characteristics and the QL of those who have sequels from TA. The questionnaires were applied in three clinics of physiotherapy, all of which were participants of the United Health System (SUS – Public health system supported by Brazilian government). The study group was composed of 100 people and the experiment resource used was both convenience and non-probability sampling. It is notable that this project was subject to the Committee of Ethics in Research of the Dom Bosco Catholic University (UCDB, Brazil) and all participants signed an Informed Consent Agreement.

RESULTS AND DISCUSSION

For the statistic analysis of the results obtained, the methods used in this study were: statistics tests, Student's T test, for category variables in relation to the field range of the questionnaires SF-36 and WHOQOL-100, Pearson's Linear Correlation Test for continuous variables and the Analysis of Variance (ANOVA). The level of significance adopted for the statistic tests was 5%, which means p<0, 05 (Table 1-3).

Considering that in the sample studied, the average time required for recuperating from lesions is 24.79 months for individuals in average age of 36.77 years old and the average length of a hospital stay was 16.27 days, with an average of R$ 1.580,70 (Reais: Brazilian currency) of family monthly income before TA, and after the accident, income is reduced to R$ 1.152,40 which is considered too low to supply basic family needs since such income is also the source of payment for medical treatments, rehabilitation therapies as well as the support expenses such as transportation to medical centers, medication, wheel chairs, clutches, medical visits and other medical sessions necessary for the recovery from lesions. Lesions resulting from TA require a relatively long-term hospital admission. The patient is classified as a polytraumatized victim requiring a hospital stay length similar to patients with chronic diseases [5]. For the WHOQOL-100, individuals with sequels resulting from TA showed a worse QL in the Independence level, both environmental and physical aspects; which means they perceive their QL in more or less terms (not good / not bad) when it comes to their level of independence related to their mobility, activities of daily life, dependence on medication and / or treatment, capability to work and related to their physical safety, home environment, financial resources, health and social care: availability to acquire opportunities to learn new information and abilities (Table 4).

These results can indicate that the TA event and pathological conditions acquired with it, limit the individual greatly when it comes to their daily activities, and represent loss of the most basic and important actions and human characteristics such as: mobility, work, health, and autonomy in regards to everyday routine (getting dressed, showering, eating, etc.). In addition, the perception of such an individual regarding his own protection is compromised due to the TA experience, since this individual now experiences financial loss and depends, in most cases, on government help. In this context, it is understandable how a reduction of the opportunity to acquire new knowledge and abilities as well as a visible decrease in participation in leisure activities can impact the QL evaluation of an individual.

Table 1: Sampling of the Social Demographic Profile.

Variable	n	%
Gender:		
Female	34	34.00
Male	66	66.00
Marital status:		
Married	33	33.00
Single	42	42.00
Other	25	25.00
Education level:		
Illiterate	2	2.00
Elementary School Incomplete	24	24.00
Elementary School Completed	18	18.00
Middle school/High school	52	52.00
College Degree	2	2.00
Post-graduation Degrees	2	2.00
Age (years):		
< 20	4	4.00
20 – 29	32	32.00
30 – 39	27	27.00
40 – 49	23	23.00
50 – 59	6	6.00
60-69	5	5.00
≥ 70	3	3.00
Family income before TA:		
0 – 500	3	3.13
501 – 1.000	32	33.33
1.001 – 2.000	38	39.58
2.001 – 3.000	18	18.75
3.001 – 4.000	1	1.04
4.001 – 5.000	3	3.13
> 5.000	1	1.04
Family income after TA:		
0 – 500	12	12.37
501 – 1.000	49	50.52
1.001 – 2.000	24	24.74
2.001 – 3.000	8	8.25
3.001 – 4.000	2	2.06
4.001 – 5.000	1	1.03
> 5.000	1	1.03

Table 2: Accident Profile from the Sample Study.

Variable	n	%
Type of accident:		
Trampling/run over	16	16.00
Violent impact	17	17.00
Collision	37	37.00
Rolling over	3	3.00
Fall from motorcycle	24	24.00
Other	3	3.00
Individual status at the moment of the TA:		
Driver	66	66.00
Passenger	13	13.00
Pedestrian	10	10.00
Other	1	1.00
Did the driver have a driver's license:		

Yes	54	83.00
No	11	17.00
Blank	1	1.00
Vehicles involved in the TA:		
Truck	6	6.00
Car	52	52.00
Bicycle	5	5.00
Motorcycle	77	77.00
Other	4	4.00
Benefits resulting from TA:		
Yes	43	43.00
No	57	57.00
The accident happened when the individual was in the course of:		
Study	2	2.00
Leisure	52	52.00
Work	36	36.00
Travel	5	5.00
Other	5	5.00

Table 3: Profile of Sequels Resulting from TA in the Sample Studied.

Variable	n	%
Type of lesion:		
Marrow lesion	6	6.00
Inferior members	65	65.00
Superior members	46	46.00
Cranioencefalic trauma	9	9.00
Other	12	12.00
Use of prostheses, plaques or orthopedic screws:		
Yes	66	66.00
No	34	34.00
Hospital admission:		
Yes	89	89.00
No	11	11.00
Hospital admission length (days):		
1-10	47	52.81
11-20	16	17.98
21-30	15	16.85
31-40	4	4.49
41-50	2	2.25
51-60	3	3.37
> 60	2	2.25
Time required for recuperation of lesion (months):		
1 – 6	37	37.00
7 – 12	29	29.00
13 – 24	18	18.00
25 – 36	3	3.00
37 – 48	3	3.00
> 48	10	10.00

Table 4: WHOQOL-100 General Score for the Sample Studied by Aspects.

Aspect	n	Média	dp	F	P
Physical	100	57.69	19.17	42.78	< 0,001
Psychological	100	67.05	14.00		
Independence Level	100	52.91	19.60		
Social Relations	100	69.35	13.24		
Environment	100	56.76	12.09		
Spiritual	100	81.31	16.77		

Similar results were found in the QL evaluation and importance given to spirituality / religion / personal beliefs in adults with and without chronic health problems and it was observed that the presence of a chronic condition can be associated with the worsening of most aspects studied, except for the spirituality / religion / personal belief aspects. In this study the higher scores belong to sick individuals [6]; QL and lessons [7] and QL and physical traumas after 6 months of hospital discharge, with the WHOQOL-BRIEF, physical aspects being the most affected although psychological and environmental aspects presented scores far from expected for the general population [8].

It is observed that in the WHOQOL-100 the aspects with the highest scores were spirituality / religion / personal beliefs (median=81,31), which might indicate that personal beliefs give life meaning and strengthen individuals to be able to face and understand difficulties in life. Currently, there are already studies regarding the association between QL and the variable Coping representing the use of religion / spirituality to cope with stress and the problems in life, and it is stated that Coping by means of religion / spirituality can be classified as a positive strategy in overcoming problems [9]. It can be stated that this last aspect demonstrates that the spiritual factor has relevance for the participants of this research and indicates that a better QL might be related to acquiring spiritual support to cope with life's difficulties or even the search for a cure by faith [10].

The individuals by means of their personal beliefs interpret the events in their lives, from such interpretation they find meaning in what happens, and spirituality appears to give them a sense of hope, perseverance; psychological well-being which ultimately promotes a better QL. This is a very interesting aspect found in the sample study because there seems to be a common tendency of individuals to attribute TA to a 'superior force', divine punishment, curses, with religious sayings such as: "it was God's will", "that's what God wanted for us", "God does not love me because he took my son away" or "God is teaching us a lesson" [11-13]. Still though, the study shows that spirituality does contribute for a better QL. The SF-36 demonstrated the compromising of QL in the Physical, Emotional and Functional capability Aspects. It means that the participants have some type of limitation in the amount of work they are capable of accomplishing as well as a shared experience of interference in their daily activities and / or personal productivity, which shows there are obstacles impeding the individual's wellbeing and physical capacity limitations.

In a study of motorcycle TA victims in Maringá city (Paraná state: Brazil) the Questionnaire SF-36 was used to evaluate the QL and concluded that not only in the group of individuals with cranioencephalic trauma but also in the group without this type of lesion, the higher median scores were for the Functional Capability Aspect (median=88.53 and 85.23 respectively), and the lowest scores were for the Vitality Aspect (median=73.53 and 64.66 respectively) [14]. It is safe to state that variable quality of care offered by the health system, type and severity of lesions, number of surgical interventions, degree of sequels, pain, access to rehabilitation treatments and social economic conditions can influence the QL greatly after the trauma [8]. As for the emotional aspects of the accident victims, a research found that the participants in that study attributed the cause to their anxiety

to the long recovery time and to prolonged hospital treatments, postponing of surgeries and difficulties in making appointments for medical sessions [5]. Similar results were found in another piece of research studying pre-surgery patients with coronary disease, with smaller scores Physical, Emotional, Functional Capability and Pain Aspects. After surgery, the results were different, presenting higher scores for Physical and Emotional Aspects [15] (Table 5).

The SF-36 results can be related to the fact that the individual with TA sequels, in most cases, experiences a long period of physical limitation, with their amount of productivity reduced and experience interference in routine daily activities as well as psychological effects on their well-being resulting from abrupt changes in life-style due to the lesions sustained.

Nevertheless, the TA lesions and the severity of trauma dictate the duration of the hospital stay, the type of sequels and the possibility, or lack of possibility, of the decrease in functional capability, reduced participation in occupational activities, dependency on medication, medical treatments and loss of social interaction. In the sample studied, although physical limitations and reduced functional capability are strongly present, the individuals with TA sequels still perceive their health as being good, which promotes a good QL.

CONCLUSION

In the sample of this research a predominance of single males was found, with a high school level of education, averaging 36.77 years old, who experience an average recovery time of 24.79 months, a hospital duration average of 16.27 days, with monthly family income before the TA of R$ 1.580,70 and after the TA, a reduced income of R$ 1.152,40. The research found similar results to the field literature, showing that individuals with TA sequels studied are mostly young males during their most productive phase of life and present reduced income after the TA.

The WHOQOL-100 results showed assertively that what the population studied undergoes as well their QL resulting from lesions, temporary or irreversible, generating medication and / or treatments, a limitation of daily and occupational activities, a compromising of financial resources, promotes negative feelings. That is why the lowest scores were found for the aspects of Independency level and Environment in this research instrument.

An important aspect of using the WHOQOL-100 was the fact that the highest scores found were for Spirituality / Religion / Personal beliefs, which demonstrates how the spirituality factor does impact the participants of the research promoting an improved QL.

Table 5: General Score for SF-36 in the sample studied, by aspects.

Aspects	n	Median	dp	F	P
Functional capability	100	41.35	37.58	58.94	< 0,001
Physical aspects	100	11.00	26.43		
Pain	100	50.01	26.18		
General health condition	100	76.71	19.60		
Vitality	100	66.35	20.80		
Social aspects	99	61.74	28.28		
Emotional aspects	100	31.00	40.27		
Mental health	100	67.92	23.24		

Beginning with the SF-36 results, it can be concluded that for individuals with sequels resulting from TA, there is clear evidence of interference in their daily activities and / or personal productivity as well as psychological issues that result from their physical limitation. In this evaluation the highest score presented refers to the General Health State Aspect, which means that although there is a sequel presented, the participants in this group perceive their general health condition as good and that fact in itself promotes good QL.

It is safe to conclude that sequels resulting from TA compromise the individual's perception of his own life conditions, psychological well-being, capability to work and other physical limitations that promote a decrease in the QL. It was observed that an event such as TA and the sequels left behind by it also compromise the individual's daily routine such as taking care of his own health and other basic actions (getting dressed, showering, eating among others) as well as cause abrupt changes in his life-style in order to adapt to the limitations he now has because of his injuries.

The results obtained in this research confirm the importance of studying QL and TA related to individuals with sequels and the changes and problems which arose because of them. It is important to highlight that the population studied in this research experiences important specificities that impact their QL after an accident. This study can be a beginning toward the improvement of programs that aim to assist TA victims and lay the foundation for future proposals of programs for prevention, intervention and educational actions inserted in the education, health systems and programs for traffic safety.

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