

Dimensions of Quality of Life in Spinal Cord Injured Veterans of Iran: a Qualitative Study

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Abstract- The purpose of this study was to shed light on the identification of themes and sub-themes of the quality of life (QOL) in Iranian veterans with spinal cord injury (SCI). Studies have reported decreased QOL in SCI patients which encompass all aspects of their life. Little is known about QOL in SCI veterans from Iran. The aim of this qualitative study was to identify related aspects of such patients through in-depth patient interviews. The present study was a qualitative study of content analysis. Sampling took place in the Veterans Department of Khatam-Al-Anbia Hospital and was objective focused in accordance with qualitative studies. The participants were 11 SCI veterans and 4 veteran spouses. The data was collected by means of in-depth interviews and the use of the constant comparison method. The five themes of QOL included social, economic, cultural, medical, and environmental resulted from 7530 primary codes. We noted 29 QOL sub-themes. This article addresses different dimensions of QOL for SCI veterans. The current study suggests that the main aspects that should be evaluated in SCI veterans are the social, economic, cultural, medical, and environmental issues which affect their QOL. Moreover, participants put the most weight on their financial situation.

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Introduction

Spinal cord injuries (SCIs) are one of the most debilitating injuries (1) and cause the poor health-related quality of life (QOL) (2). The prevalence of traumatic SCI in Tehran ranges from 1.2 to 11.4 per 10,000 people (3). SCI patients experience many physical, psychological and social function difficulties, which limits the ability to perform common self-care daily activities (4).

Besides physical limitations, SCI patients experience multiple economic, emotional, psychological, and environmental stressors (5,6). Following SCI, their new dependent state necessitates modification and reassessment of all aspects of their life (6,7). Therefore, understanding the QOL in SCI patients can help health care workers provide better health services.

QOL is the ultimate rehabilitation following a

disability and also, the final outcome to be used in determining the efficacy of rehabilitation (8). Numerous definitions exist for QOL in rehabilitation researches carried out with multiple instruments (9,10). Many of previous researches into QOL following SCI were mainly quantitative in nature (11). Because of a quantitative approach, they could only reveal veteran's poor QOL (2,12,13). Saadat *et al.*, (2) in their study indicated that veterans with SCI experienced lower QOL than their non-veteran counterparts. They could not explain the reason since their study was a quantitative one. A qualitative study was essential to evaluate this finding.

Although many studies are conducted in QOL field of research, the main problem is a lack of having a fixed definition of QOL (14). Quantitative research is inevitably driven from the hypothesis and requires identifying variables that are pertinent and essential to

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the issue in advance. This limitation prevents from finding unknown factors (15). Qualitative methods are therefore an appropriate approach because they provide an exploratory, rather than a hypothesis-driven approach. Also they support a greater depth of insight into factors that contribute to QOL (11,15).

During Iraq-Iran war between 1980 and 1988, 2012 of more than 400,000 injured soldiers (16) were veterans with SCI. The SCI lasts for the rest of veterans' lives (17). SCI causes a considerable lifelong change because of physical disruptions such as pressure ulcer and mental problems which have a high burden on the society (18,19). This lifelong change causes problems that affect their QOL (20,21). Using the 36-item Medical Outcomes Short-Form Health Survey (SF-36), studies have shown that QOL is low among SCI patients of Canada (13), Sweden (22), Norway (23), and Iran (2). Moreover, researches have shown that veterans experience poorer QOL compared with their non-veteran counterparts (2,24). Therefore, a qualitative study is essential to discover the perception of QOL among people with SCI (11).

Due to Iraq-Iran war, there are many Iranian veterans who are under the close support of the Foundation of Martyrs and Veterans Affairs as one of the governmental authorities. The government support veterans by monthly payments depending on the situation of them and their families, as well as facilities such as the easier entrance to universities for them and their children. In addition, there are no costs of treatment for veterans in special centers in our country. Because of their aging, a health network for veterans with spinal cord injury would be needed in the country. However, limited centers such as Khatam-Al-Anbia Hospital are considered for once-a-year checkups of veterans with SCI. Besides the governmental support, SCI veterans are living in difficult situations because of their limitations and inability to work. In this study, we identified QOL-related factors that veterans with SCI perceive in their life. Also, to add a richness of understanding to the veterans QOL, veteran's partners were also included in this study (25). The purpose of the study was to conduct a qualitative study to gain insight into the life experiences of Iranian veterans with SCI to identify factors that influence their QOL.

Materials and Methods

This qualitative study was done with the purpose of exploring Iranian SCI veterans' dimensions of QOL using a conventional content analysis approach.

Study design

The SCI veterans were enrolled using a purposive convenience sampling method, appropriate for qualitative studies that continued from the point of data. The data were collected by semi-structured in-depth interviews. To facilitate the interviews, open-ended questions were asked. Finally, researchers extracted themes and sub-themes by analyzing qualitative data. Developing the semi-structured interview, questions were based on the review of the literature on QOL in persons with SCI (2,11,15).

Participants

This study was a survey of combat veterans of Iraq-Iran war, recruited from different provinces of the country which provided a varied ethnic and geographic sample from across Iran. The participants were approached randomly from those asked to be visited and hospitalized in the Veterans Department of Khatam-Al-Anbia Hospital for yearly health check-up and investigations of any past medical history of diseases. Khatam-Al-Anbia Hospital is located in the center of Tehran and annually hundreds of Iraq-Iran war veterans with SCI from across Iran are routinely checked-up. The hospital has the profile of these patients and regularly makes an appointment to hospitalize them for about a week in the hospital. Specialists in different medical fields are available to consult with for developing a pressure ulcer, urinary tract infections, depression, and other medical issues. Although the subjects of our study were chosen from the department in which SCI veterans come from all cities in the country, they were not a good sample for the whole country. In addition, given that all participants were male, the results may not be the same in female veterans. The demographic information and sample quotations from participants are presented in Table 1. Eleven SCI veterans and four veteran spouses aged between 45-63 years participated in the study.

Data analysis and credibility

To facilitate transferability, we provided a clear description of the context, selection and characteristics of the participants, data collection and the process of analysis throughout the text. To ensure rigor and trustworthiness in this qualitative approach, the following were performed. To perform member checking, interpretations of the transcripts were delivered to three of the veterans to obtain their feedback.

To ensure anonymity, numbers were assigned to each participant. Codes were generated by the answers

that marked a point related to QOL. The interviews, codes and derived categories were evaluated by the researchers separately to assess the accuracy of the coding process (internal check). By having the first three patients told the story of their QOL without any intervention in their narrations, major themes were obtained. These interviews were pilot-tested for clearness and comprehensibility prior to the main interviews. The rest of the participants were encouraged to explain their QOL in detail according to the major themes suggested by the first three interviews. The interviewer, the first author who was a medical intern at the time of the study, made the scheduling of the interview totally flexible.

Within each interview, the interviewer's relationship with the participants further developed, with more interview sessions conducted to assure data accuracy. We used methods such as prolonging engagement, devoting enough time and developing a good relationship (26). Additionally, a peer debriefing method in which the transcripts and findings from the data were given to experts for their comments was used, and then, non-correlated occasions were omitted, and comments were added to confirm the obtained results (external check). The length of the interviews ranged from 45–80 minutes and was later transcribed verbatim. The interviews were scheduled at a time convenient for the SCI veterans and were held at the patient's private room. In all cases, veterans and their spouses were interviewed separately. The data were triangulated with the two forms of data collection including verbal interviews and precise observation of veterans for any special gesture, crying, laughing, or behavior during their interviews. Also, interviews with the veterans and their wives represented two independent sources. Data analysis was used to extract codes, themes, and sub-themes by qualitative content analysis. In the current study, qualitative content analysis as the process of organizing qualitative data with regard to emerging different themes was conducted.

Initially, all audiotaped interviews were transcribed verbatim and relevant statements such as pauses, laughs, cries, etc. were noted. Each interview was listened again and compared with transcripts by another researcher as a check for accuracy and completeness. Therefore, all errors were corrected, and no part of the speeches was missed.

Following the review of transcripts and coding, themes and sub-themes were formed. Different codes were compared with each other, and the formulated meaning units were arranged into different classes

according to similarities and differences in meaning.

Interview transcriptions, as well as all codes, themes, and sub-themes were reviewed several times. The constant comparison was performed to study the relationship within and across codes and classifications. As a result, the comparison of each patient's statement with the rest of the data led to creating categories and finally, the meaningful theme and sub-themes were emerged (26). All divergent coding was discussed by the investigator until consensus was reached.

The interview process

Initially, during the first day, the interviewer, the first author of the article, interviewed the first three veterans with focusing on our main question "what are the main factors of QOL in SCI veterans?" Each sentence of the participants equaled one code, without considering the content of the sentences. Then, following evaluations of the codes, we categorized the relevant codes into five main themes including social, economic, cultural, medical, and environment. Then, each code was placed under one of these themes. On the second day of our interview, we again asked the main questions of the current study. The interviewer did not direct them toward any of the themes; but, he listened carefully and wrote down their quotations. If any statement was not clear, the interviewer would ask them to clarify it. General interpretive questions with open answers were designed to create a semi-structured interview with an answer to each question leading to the next question. Questions such as 'Can you tell me what affects your everyday QOL?', 'Can you tell me more about this factor that you just mentioned?' and 'What would you tell another person without SCI about QOL?' were used to encourage the veterans to narrate their feelings and experiences. Regularly, the authors reflected on the main goal of the study asking 'what are the dimensions of QOL in spinal cord injured veterans of Iran?' Again, after the interview was finished, all the quotations were classified as codes. Each code was placed under each of five main themes. The authors of the study then reviewed all the codes in each theme and classified theme in sub-themes. Each interview was conducted in the same way, codes were generated, and placed under themes, and sub-themes, or if that code was something new regarding the previous sub-themes, it was classified under a new sub-theme. The interviewer collected data until he reached a point of data saturation compared to all previous quotations, and until he no longer heard new information.

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Ethical considerations

All participants gave their informed written and verbal consent. Guarantee of confidentiality and anonymity in reporting the findings was given to all

participants. Approval for this study was given by the ethical review board of Sina Trauma and Surgery Research Center, affiliated with Tehran University of Medical Sciences.

Table 1. Characteristics of each participant and sample quotations from participants

| Participant (Number) | Age (year) | Years of Education* | Marital Status | SCI Location | Years passed since SCI |
|---|------------|---------------------|----------------|----------------|------------------------|
| Veteran | | | | | |
| 1 | 58 | 22 | Married | T11-T12 | 26 |
| Social Theme: "I am in a good relationship with people. I have a good relation with the society, and the society has a good relation with me." "I believe this good behavior of agencies is related to their religious beliefs. Those who work for God's sake have more insight and can better understand us." | | | | | |
| Cultural Theme: "One can easily obtain a university degree by spending [2000\$].but what will happen if one gets higher degrees from university?" | | | | | |
| Environment Theme: "In order to escape from my pain and problems, I try to involve myself in amusing activities in the society to forget them." | | | | | |
| 2 | 49 | 20 | Married | T8-T9 | 24 |
| Social Theme: "People can't understand veterans because they are not physically handicapped to feel us." "...Veterans are not active in the society because of their limitations, but it should not be a barrier to stop them from participating. There is always a solution to this...." | | | | | |
| Economic Theme: "...Really high expenses...as an example, going in the city is possible only with a taxi for me....Do you know how much money do I spend on this each month? I can't work, but the same person without my disease works many shifts per month... We spend more money; we earn less...." | | | | | |
| Cultural Theme: "University degree is useless. People use it as a way to show themselves. We don't have such time." | | | | | |
| 3 | 50 | 18 | Single | T11-12 | 22 |
| Social Theme: "...Television can clearly introduce veterans to the society. It has struggled to do it, but it was never enough or sufficient." "The government has a key role. They should help more because if they don't care, who else is responsible for veterans' problems?" "Family of veterans is their everything." | | | | | |
| Economic Theme: "My children's education needs a lot of money. We need other sources to provide them." | | | | | |
| Cultural Theme: "Not all of veterans could continue their education. Their living problems were major factors that stopped them from continuing. Overall, being handicapped was a big barrier to the educational progress of the veterans. At the moment, the situation has changed, and there are opportunities for them to restart and overcome their disabilities." | | | | | |
| 4 | 55 | 18 | Married | T8-T9 | 23 |
| Social Theme: "...they pretend in the media, as if veterans have everything in their life, they are wealthy, and they are without any problem. They show as if veterans are only spending the government's properties. That's just some people's politics behind it...." | | | | | |
| Cultural Theme: "Everyone loves veteran families. The pleasure and kindness that exist in a veteran's house are not found anywhere else. They are the healthiest group of people [in cultural aspect], I believe." | | | | | |
| Economic Theme: "One of my children's private taxi to school is more than [300\$] a year. How can I afford these expenditures with this low income?" | | | | | |
| Environment Theme: "Each summer, I go to my village to see my relatives. That makes me fresh and energetic." | | | | | |
| 5 | 50 | 18 | Married | L1-L2 | 30 |
| Social Theme: "...Even if there is a program for veterans, it is just a very shallow overview of their life. There is no time to show their problems or limitations in life...." | | | | | |
| Cultural Theme: "Those veterans who married and had partners to take care of them live so much easier than the rest." | | | | | |
| Environment Theme: "When street pavements are not suitable to go with a wheelchair, we have no choice but to go on the street. That's very dangerous, but we have no other choice. Many government buildings do not have an elevator." | | | | | |
| 6 | 54 | 20 | Married | T10-T11 | 30 |
| Social Theme: "...Long queues are for daily works at offices. A veteran cannot stand in the queue. People help us go ahead out of the queue, but it is not the same for authorities. No one else can do our works instead...." | | | | | |
| "...A veteran's partner has a very impressive role. She is the only person who lives with him for years and understands his limitations and stands beside him all his life. In fact, she sacrifices her life for him." | | | | | |
| Environment Theme: "How can I travel with this knee-ache, incontinence and these high prices?" | | | | | |
| 7 | 62 | 18 | Married | T12-L1 | 27 |
| Social Theme: "Most agencies are very slow in doing our affairs. They do not pay attention to a veteran's status. Such a long time should be spent in the office while the veterans are not able to handle this situation." | | | | | |
| Economic Theme: "...when prices increase each year, it's expected that our salary increases with the same rate. But it has not happened at all. In order to have a normal life, veterans or their partners should work as an adjunctive financial support." | | | | | |
| Medical Theme: "Sometimes all of my body aches. Aging increases the problem. This pain and immobility have destroyed my life." | | | | | |
| 8 | 63 | 22 | Married | L1-L2 | 26 |
| Social Theme: "...People spend many hours on media. Therefore, it is an effective tool to reflect the veterans' situation, their life and their problems to the government. But, unfortunately, it was never satisfactory." | | | | | |
| Economic Theme: "People are speaking just about the credits offered to veterans. I don't use it at all. My children study themselves and never used the credits. Our problems are really more severe than these credits." | | | | | |
| Cultural Theme: "I can't go to these places even once a year. That's all because of my disability." | | | | | |
| Medical Theme: "15 years ago, I had a severe pressure ulcer. I had intermittent infections in different parts of my body. At that time, hygiene was so poor compared to today. Medicine has hopefully developed very fast." | | | | | |

Continues of Table 1.

| 9 | 52 | 18 | Married | L1-L2 | 25 |
|--|----|----|---------|-------|------|
| Social Theme: "Most agencies are very slow in doing our affairs. They do not pay attention to a veteran's status. Such a long time should be spent in the office while the veterans are not able to handle this situation." | | | | | |
| Economic Theme: "Although many people have problems with their housing and rentals, I hopefully have a house for myself. However, this house is not suitable for me. For example, tall cupboards make problems for me, and somebody else should help me." | | | | | |
| Cultural Theme: "Most of the veterans are now over 60, there is no time for them to marry." | | | | | |
| Medical Theme: "Incontinency in urine and stool has limited my hygiene. Although a nurse is changing diapers daily, it is my biggest problem. I should spend a lot of money for my diapers each month." | | | | | |
| 10 | 60 | 22 | Married | L1-L2 | 25 |
| Environment Theme: "When a father has a disability, it makes limitations for children. When children have problems they cannot study well, so that makes another problem for the family." | | | | | |
| Economic Theme: "Normal people have a problem finding a suitable job. This problem is worse for us. I cannot work continuously for several hours each day." | | | | | |
| Medical Theme: "If a veteran could overcome his physical disabilities, he will not have any mental problem." | | | | | |
| 11 | 57 | 18 | Married | T6-T7 | 30 |
| Cultural Theme: "...[culture] That's a very difficult part of our life." | | | | | |
| Medical Theme: "There are no good nursing homes available. Private nurses are very expensive. The government is weak in this regard." "There should always be someone to help me, whether my mother, my wife, neighbors or relatives." "I am always worried about affording my drugs because they are expensive, they are not easily available, and some of them have many side-effects." "All of us have a kind of physical problem that affects our mind." | | | | | |
| Veteran's Spouse | | | | | |
| 1 | 50 | 14 | Married | ---- | ---- |
| Economic Theme: "The importance of working outside shows itself when one becomes disabled. The day after Day, problems increase." | | | | | |
| Cultural Theme: "Limitations veterans have put their marital status in danger. Because of this, many of them never tend to marry." | | | | | |
| 2 | 53 | 22 | Married | ---- | ---- |
| Economic Theme: "...After my husband had been handicapped, I started working in the Sewing workshop. That's because of high expenditures, low veterans' income, and my husband's limitation to work." | | | | | |
| Medical Theme: "My husband is aggressive. He takes mental pills but still is very angry. Many times he fights with me or his children. He always sleeps a lot and has complaints of dry mouth because of these pills." | | | | | |
| 3 | 47 | 11 | Married | ---- | ---- |
| Social Theme: "Because of my husband's disability, I try to help him in his works in governmental agencies, but agencies insist that my husband should go. They don't understand that my husband can't stand in line for a long time. My husband should go to agencies with no elevator, and that is a big trouble." | | | | | |
| Cultural Theme: "Many of these places [Cultural places] exist in the capital but, they are not used appropriately. Everyone [veteran] is just thinking of money, living, and treatments. No time for culture remains." | | | | | |
| 4 | 45 | 18 | Married | ---- | ---- |
| Social Theme: "...A veteran's spouse has more effect on veteran's life than himself. Also, she has donated her life, too..." | | | | | |
| Economic Theme: "Comparing to previous years, the government is really supporting better, but the expenses have increased so much that the situation is not improved." | | | | | |

* In the educational setting of Iran, 8 years of education represents a guidance school education, 12 years of education represents a high school education, 16 represents a bachelor's or associate degree, 18 represents master degree, and more than 18 equals doctorate degree depending on the field of study.

Results

The interviews resulted in 7530 primary codes which fell into 5 QOL categories including social, economic, cultural, medical, and environmental themes, and 29 sub-themes.

Transcript coding revealed a range of important concerns that can be explained in terms of 29 separate sub-themes (Table 2).

Sub-themes

Social theme

The social theme consisted of eight sub-themes, including general public's role, understanding of authorities and governmental agencies, government's role, media's role, respecting veterans in the society, veteran's role in the society, veteran spouse's role in the

society, and family of veterans. In our country, the social structure mainly consists of people and government connected together as one big family. In this gathering, the media has a very great effect in connecting government and people. Within this system, people try to be in touch with each other and respect this relation a lot. What the rest of people think about them is important for veterans, and that is why media programs have an invaluable role in our society. Authorities and agencies try to understand the situation of the veterans and support them by different types of facilities. The limitation of activity in the society seems to be an important point that the patients are suffering from. Respect to the veterans, people's attitude towards veterans, understanding of the authorities and agencies, and media's role show that veterans seek more respect and are trying to absorb more attention in the society. It

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seems that feeling of inattention is a vital factor that should be more considered.

General public's role: All participants identified general public's role as a sub-theme of QOL. Some

believed that most people understand veterans' situation and respect them. But some had a different idea and complained about people's perception of veterans.

Table 2. Dimensions of quality of life in veterans with spinal cord injury.

| Social | Economic | Cultural | Medical | Environment |
|---|-----------------------------|--|-------------------------------------|-------------------|
| General public 's attitude towards veterans | income and expenditures | Cultural places | Access to drugs | Traveling |
| Understanding of the authorities and agencies | Treatments and expenditures | Marriage | Access to medical care | Hobbies |
| Government Support | Family and expenditures | Association between veterans and current culture | Nursing and dependency to others | Barrier-free city |
| Media's role | Government and expenditures | Education and culture | Psychological status | |
| Respect for the veterans | Insurance | | Hygiene SCI-related difficulties | |
| Ability to communicate in the society | Housing and Expenditures | | | |
| Veteran spouses' role in the society | Credit to veterans | | | |
| Family of veterans | Occupation | | | |

Media's role

Almost all participants verified the invaluable role of media in QOL. Although the participants mentioned all types of media including newspaper, radio, and television in this section, the main and the most effective media in our country is TV. The reasons that participants were dissatisfied with the media were showing an incomplete or incorrect portrait of veterans' life by media, unstated facts of problems in a veteran's life, poor management of programs, declaring financial matters of veterans negatively, and an inadequate number of programs about veterans.

On the other hand, some acknowledged the media for its struggles, especially the recent years' broadcast.

Understanding of authorities and agencies

Most respondents had a kind of complaint from service offices. Some noted that some authorities had a good communication and acceptable understanding of veterans' situation.

Government's role

In Iran, authorities and agencies are different from government. The government is changing every four years in our country and is mainly referred to the president and his system, but the authorities and agencies are a constant part of Iranian political setting.

Respect veterans

Another QOL sub-theme emerged from data analysis

was respecting the veterans. The participants believed that, in order to have an appropriate QOL, the society should respect them. Most of the participants believed that they receive enough respect from the society and authorities. But some believed differently due to their weak conception.

Veteran's role in the society, Veteran' spouses' role in the society

The participants believed that a veteran's partner has a very effective role in their QOL. They actually have a difficult life, since they should tolerate all of the veteran's limitations in life. Some partners have divorced or left their lives because of these high pressures. However, all partners declared that they are proud of their husbands.

Family of veterans: They believed this factor including children and the spouse is the most important and critical one. The family of a veteran was identified as a valued feature of QOL. Many participants emphasized the role of the family in their life.

Economic theme

The economic theme consisted of sub-themes, including income and expenditures, treatments and expenditures, family and expenditures, government and expenditures, insurance, housing and expenditures, offering credit to veterans, and occupation. The economic theme was the most commonly mentioned attribute of QOL among the veterans. All themes

including social, cultural, health and even traveling and hobbies are all dependent on the economic situation of the patients. However, because of their disabilities they are mostly unable to provide all the costs of life, and that is why they were more concerned about the compensations and the available credits of the government to veterans.

Veterans have a higher income, increased access to equipment and medications in the society compared to non-veterans SCI patients. However, veterans voluntarily participated in Iraq-Iran war, sacrificed their health, and now expect an acceptable life, mainly from the government, based on their own anticipations. As a result, veterans experience lower QOL than non-veterans.

Income and expenditures: They agreed that income is the basic if they want to feel good about or be satisfied with their life. The veterans' income is lower than the normal population because of their limitations. Moreover, they have higher expenditures. Economic problems force even veteran partners to work because of their low income. They shared stories of how income affected their life. The common idea here was that low-income prevented them from coping with their disabilities, which in turn, worsened the quality of their life.

Treatments and expenditures: Veterans mentioned that access to medical treatments was essential to their QOL because the suitable medical remedy would prevent their physical problems from becoming serious. Although treatment expenditures are high, the government covers them completely. However, the veterans complain about the high price of drugs like some non-domestic drugs, especially those for which the government does not maintain any coverage.

Family and expenditures

They believed that most of their expenditures were spent just for veterans. Their income is not sufficient for the needs of the family.

Government and expenditures

Participants asserted that a veteran's self-income is not sufficient for their daily expenses, and they expect more financial support from the government.

Insurance

Insurance was another related factor that veterans noted during their speaking of financial issues related to QOL. They were satisfied with the current insurance and believed that insurance has decreased their expenses.

Housing and expenditures

The housing of veterans was not a major issue for them since most of the participants have afforded a house until now. However, they were more concerned about their children's accommodation.

Offering credit to veterans

Some participants were satisfied with all credits from authorities. Some believed that no appropriate credit is offered to veterans. Some said it was not enough. Some informed that the given amount is so much lower than the amount the government says. Some reject any credit from the authorities.

Occupation

If veterans become able to work, many of their problems would be solved. When they are involved in out-of-home activities, they can tolerate the situation better.

Cultural theme

The cultural theme comprised four sub-themes: cultural places, marriage, the association between veterans and current culture, education and culture. The association between veterans and the current culture of the society is the current cultural concern which is the representative of conflicts of previous traditional and current western-like culture which exists in the society.

Cultural places

Cultural places refer to museums, parks, and every place that manifests the culture to people. Five participants identified cultural places as a sub-theme of QOL. These participants tended to have higher levels of education compared to those in the other groups. The participants declared that there has been no enough foundation, and people do not have time to use cultural places.

Marriage

Marriage was evidently an important QOL sub-theme for the participants. Veterans discussed this issue differently. Because veterans are disabled, many of them remained single or divorced. Also, they said that there is no time for them to marry now. They believed that marriage is a tool for their improvement. On the other hand, they announced that people like to marry a veteran's family.

Association between veterans and current culture

Veterans repeatedly mentioned the importance of the

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association between veterans and the current culture as a factor influencing QOL.

There are factors that affect the association between veterans and the current culture including the education level, cultural status, integration of domestic culture with a foreign culture and the change of ambitions in the current society.

Education and culture

Because of veterans' limitations, they could not continue their education. There was a different opinion regarding the effect of education over veterans' QOL. Some believed that higher education leads to higher QOL. However, some had a different idea.

Medical theme

Under this theme, there were six sub-themes: Access to drugs, medical services availability, nursing, and dependency on others, mental status, hygiene, SCI-related difficulties.

Access to drugs

Drugs were evidently a sub-theme of QOL. Providing drugs is of critical value for veterans. Non-domestic drugs are much better and have lesser side-effects. However, they are more expensive and are sometimes rare in the market. An example comment includes:

Medical services availability

During the interviews, some were satisfied and believed that best doctors are available to veterans free of charge and the current situation such as equipped hospitals, and free health screening is acceptable. However, some were complaining about access to medical services.

Nursing and dependency to others

Nursing and dependency to others were identified as valued ingredients of QOL. The amount of help is related to each individual's disability. However, some of the veterans did not need any help at all.

Mental status

Mental status was also identified as a QOL sub-theme. The majority of the participants commented that healthy mental status is an effective factor to QOL. Many of them suffered from the pain and other physical disabilities that influence their mental status. They are obliged to take sedative drugs day and night.

Hygiene

Another sub-theme was hygiene. Lack of hygiene leads to many health problems such as pressure ulcer or pulmonary infection.

Difficulties related to the SCI

Many participants pointed out how medical problems such as a pressure sore or respiratory tract infections had affected the quality of their life. They mentioned that pain is one of the main complications related to their SCI. They also emphasized that their motion limitation was another factor. They declared other difficulties such as urine incontinence and sexual disorders.

Environment

Three sub-themes contributed to this theme. They include traveling, cities, and hobbies.

Traveling

They considered traveling a sub-theme related to QOL. However, most veterans cannot have enough travel because of financial or physical problems or lack of suitable places for veterans to travel

Cities

Being able to enter the city was identified as a QOL sub-theme for the participants. Many of them expressed a strong desire to get out of the home, to be present in the community easily or to contribute to parties by themselves. The construction of cities is not suitable for veterans. This makes movements difficult for them.

Hobbies

The majority of the participants agreed that participation in social hobbies should be a part of QOL. They mentioned that hobbies were so much related to their QOL. However, they mentioned that due to their limitations, they cannot have enough hobbies. On the other hand, many were satisfied.

Discussion

Although veterans have a higher income as well as increased access to equipment and medications in the society, they have lower QOL than non-veterans (2). In fact, Iranian veterans with SCI voluntarily participated in Iraq-Iran war, sacrificed their health, and after the war expected an acceptable life based on their own anticipations. This study provided insight into the life experiences of Iranian veterans with SCI, to identify

factors that contribute to QOL of these veterans. Using a qualitative method, we collected a level of rich descriptive detail about the current QOL of the participants.

One of the frequently discussed themes by veterans regarding their QOL was the social theme. This finding is consistent with Hammell's research which revealed that dissatisfaction with life following injury arises primarily from social disadvantage (11). Similar to Hampton's study (27), making a contribution to the society was considered a sub-theme of QOL in the current study.

In this study, opportunities to work were aspects of QOL similar to other studies which emphasized the point that without occupation, life would be boring (28), occupation is a need to be productive (29), or occupation is a way to be busy (30). The dissimilarity in the ethnic diversity and race of the population of the study are the reasons for variations in results of different qualitative studies (31,32). The abstract of findings of this qualitative study is the reflex of the race of people living in our country.

Also, in other studies, pain (29), pressure ulcers (33), spasticity (34), living with a new body (28), and also complaints such as no control over body (29), everything is difficult (29), and always waiting for help (29) are the mentioned body problems in QOL of SCI patients. In congruence with these studies, present study confirmed that because of the problems associated with an impaired body, health is inevitably related to the QOL of veterans with SCI.

In agreement with studies that mentioned environmental factors such as access to equipment (30), transportation (29,30), social barriers (28), urban infrastructure (29), and living costs (29,30) are associated with QOL, the environment had a vital effect on the QOL of veterans. Beside all these limitations, they found hobbies as a solution to escape from pain, fatigue, always waiting for help and all other limitations associated with SCI.

One of the steps to strengthen a qualitative study is to collect converging evidence from different sources, namely triangulation (35). In this study, besides the interview with the veterans, we interviewed with the veterans' spouses to understand better the QOL of veterans. The reason is that the partners should face with all difficulties of their husbands, and they are more involved in their QOL than anyone else. This involvement to the limitations of the veteran can also encompass the QOL of the partners. For example, studies have shown that because of adversities in living

with and caring for the veteran husbands, the partners have poor psychological and physical health (36,37). Partners of veterans with mental illness experience less satisfactory intimate relations and poorer psychological adjustment (38). All mentioned difficulties for the partner of the veteran may lead to approximately 20 % of the cases to leave their job to care for them full time (25).

Taken together, because the veteran, the partner, and care provider are all elements of one team, and understanding the whole idea or an idea from three different points strengthen clinical insights and practical strategies regarding QOL of veterans, we included the idea of veteran's spouse in the present study.

This article addresses different dimensions of QOL for SCI veterans. The current study suggests that the main aspects that should be evaluated in SCI veterans are the social, economic, cultural, medical, and environmental issues which affect their QOL. Moreover, participants put the most weight on their financial situation. These issues are central for policy makers who wish to promote QOL in veterans.

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