

Research Article

Relationship between coping strategies and quality of life of persons with spinal cord injury: a cross-sectional study in Iran

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ABSTRACT

Background: Spinal cord injury causes a lifetime of disability therefore, it is considered as a tragic disaster that can affect all aspects of quality of life. Appropriate coping strategy is a key factor in improving the quality of life of injured people. Therefore this study was performed in Yazd city in 2015 aimed to determine the relationship between coping strategies and quality of life of persons with spinal cord injury.

Methods: The present study was conducted with cross-sectional method on 102 people with SCI in Yazd / Iran. Tools for data collection were demographic characteristics, standard SIP-68 and SCL CSQ questionnaires that was completed self-administered. Banville method was used to translate the questionnaires. Data were analyzed with SPSS statistical software.

Results: The results showed that generally, there was no significant relationship between coping strategies and quality of life of spinal cord injured. There was a negative correlation between strategy of accepting disability and emotional stability aspect of quality of life. The mean and standard deviation of quality of life of the subjects was 33.09 ± 1.08 which was evaluated at a moderate level.

Conclusion: Effective rehabilitation programs for the SCI disabled and equipping them with coping strategies can improve the quality of life and thus the life expectancy in these subjects.

Keywords: Spinal Cord Injury (SCI), Coping strategies, Quality of life

INTRODUCTION

Spinal cord is a super vital part of the central nervous system and, even a small injury can lead to severe disability [1]. Traumatic spinal cord injuries damage almost 750 people out of every

million people worldwide and the annual incidence is increasing [2]. About 50% of all deaths from trauma are associated with spinal cord injury and it has traumatic and non-traumatic

causes [3]. More than 70% of disabled with spinal cord injury are male and 2/3 of spinal cord injuries occur in persons under 30 years [4]. SCI can be the result of traffic accidents, sports injuries, natural disasters and even simple collapse and, following that, a variety of sensory and motor disabilities as varying degrees of paralysis and loss of sensation below the level of the lesion [5].

Given that most of these people are young, this issue increases the psychological and economic pressure on the society [6]. People with spinal cord injury may live a long time with this injury and face with numerous problems such as financial problems, lack of social support and the secondary health problems like heart disease, urinary tract infections, pressure ulcers, arm and shoulder lesions; Appropriate coping strategy is considered as a key factor in successful compliance with serious disability, people disabled with spinal cord injuries in the face of occurred disaster may use coping styles such as fighting, social reliance and acceptance [7]. SCI as a costly disability that is associated with several physical and psychological tensions and all aspects of a person's life are affected. Compatibility along with dramatic changes in performance, lifestyle, roles, entertainment, family and social relationships is a unique process that continues throughout the life of the affected person [8]. Because SCI can lead to a lifetime of disability it may have adverse psychological consequences on people's quality of life. Coping is a factor affecting the welfare of spinal cord injury disabled persons and understanding the factors that influence their compliance and its challenges from the perspective of the participants helps to develop the body of knowledge, understanding care team members and families and improving the quality of care [9].

Quality of life as defined by the World Health Organization is the perception of the situation in the field of culture and value system in which they live related to their objectives, criteria and expectations. Haran (2005) states that SCI impacts on quality of life. In this group suicide, divorce

and drug abuse can be seen in abundance, so profound and extensive impact of SCI on the physical, social and psychological welfare reveals the need to review patient-centered interventions [10]. However, factors such as flexibility and social support affect the quality of life [11]. According to Tate's study (2002), disabled persons with spinal cord injury who reported excellent quality of life, satisfactory communication, social support, participation in social activities and enjoy of leisure time were also observed [12].

Results of the Elfström's study (2007) showed that disability acceptance strategy, which means the reform of life values and setting new priorities which was associated significantly with better quality of life [13]. van Koppenhagen (2008) stressed the need for further studies to investigate the effect of individual factors such as coping styles, self-efficacy and environmental factors such as social support in patients with SCI. Participants in this study have presented reduced satisfaction with their current life [14]. Development of coping skills leads to satisfaction of life and better behavior. People who are able to adapt themselves to the new situation have less dependent behavior and better quality of life conversely, people with poor psychological adaptation with SCI show negative coping styles [15]. Experts in neuroscience and rehabilitation emphasized attention to the quality of life of disabled people with spinal cord injury and coping this issue but unfortunately Iranian Studies in this area are limited. So the researchers tried to fill this gap through study aimed to determine the relationship between coping strategies and quality of life for the disabled SCI in Yazd-Iran in 2015. It is hoped that the results will be used by the government and NGOs to provide disability-friendly infrastructure environments so that spinal disabled people can feel there and have comfort.

MATERIAL & METHODS

This study was conducted cross-sectionally on 102 disabled people with spinal lesions in Yazd

selected by convenience sampling method. Inclusion criteria included the following: passing of the acute phase of injury (12 weeks after the injury for up to 3 years) and discharge from the hospital, Yazd native and a member of the Association of Disabled SCI of Yazd, desire to participate in the study, the ability to communicate in Farsi, age at least 16 years. The reason for limiting the injury period according to the existing studies such as Kennedy's study (2011) suggesting the acute phase of injury 12 weeks after [8] that is the fact that the more time passes the more coping has been created [16]. People who are undergoing psychiatric treatment or use of psychoactive drugs were excluded.

For data collection, following the permission steps to enter the Association of Disabled SCI of Yazd, while introducing himself to the research community and obtaining permission to do research, the researcher ensure the research unit that all information will remain confidential.

Data collection tools have included three questionnaires as follows:

1. Demographics. Demographic characteristics were age, gender, marital status, educational level, work status, cause, type, and level of injury.

2. Sickness Impact Profile (SIP-68). A valid tool designed to measure quality of life of people with spinal cord injury and has widely been used, this tool was designed in 1976 by Marilyn Bergner and measures the changes created by disability in activities of daily living and behavior [17, 18]. SIP-68 has 68 items set in 6 physical independence aspects (17 items), mobility control (12 items), Psychological autonomy and communication (11 items), social behavior (12 items), emotional stability (6 items), and mobility range (10 items) [16, 17]. Questions were completed with Yes (score 1) and No (score 0) by samples in self-administered manner and in some cases through an interview. According to the guidelines of SIP-68, total score is between zero representing the best quality of life and 68 representing the worst quality of life. To rank the quality of life of persons with SCI, 68 was rated to

the questions in this section and according to the scores people were classified into three categories of quality of life: good (0-22), moderate (23-45), and weak (46-68).

3. SCL-Lesion Related Coping Strategies Questionnaire (SCL CSQ) Version10. The tool consists of 12 items adjusted in 3 dimensions of acceptance (4 items), fighting spirit (5 items), and social reliance (3 items). The questions were graded based on 4-item Likert scale, scoring range was from 1 "minimum agreement", to 4 "maximum agreement" completed by the samples and in some cases with interviews. The average of all the items has been used to calculate the dimension score, and range of each dimension varied from 1 to 4 that higher scores indicate higher agreement [13]. Psychometry was conducted for Iranian version of the questionnaire by Saffari et al. (2015) and the revisions that had been provided by them, were considered in this study [19].

In the present study Forward-backward method introduced by Banville (2000) was used to translate the questionnaires [20]. Thus, in the first phase the original version was translated into Farsi separately by two translators with native Farsi language, then two other translators with native Farsi language evaluated the provided Persian version in terms of quality translations including clarity, the use of a common language and conceptual equivalent. For validation, the questionnaire were given to four members of the faculty. Then the final questionnaire developed by two professors of English was retranslated in English and compared with the original version that had similar concepts.

Internal consistency method was used to determine the reliability of questionnaires. So that reliability of the questionnaires was assessed by Cronbach's method during the pilot study between 30 spinal disabled with similar conditions with samples (Cronbach's alpha coefficient for the whole SIP-68 questionnaire was 0.91 and for each of the dimensions was in the range of 0.78-0.89, Cronbach's alpha for the whole SCL CSQ

questionnaire was 0.89 and for each of the dimensions was in the range of 0.70-0.82).

Data were analyzed using SPSS-16 software. Descriptive and inferential statistical tests such as the Mann-Whitney U test, Kruskal-Wallis and correlation coefficient were used to investigate the relationship between the variables. Significance level of the tests was considered 0.05.

RESULTS

The results showed that among 102 spinal disabled people participated in the study 70.6 percent of them were male, 66.7% were married and 52 percent had diploma or higher level of education. The demographic characteristics of the study samples are summarized in Table 1. The mean and standard deviation of the quality of life of persons with spinal disabilities were 33.09 ± 1.08 and it was evaluated at the moderate level. In the relationship between demographic characteristics and quality of life of persons with disabilities of spinal cord injury, Mann-Whitney and Kruskal-Wallis tests did not show any significant statistical relationship between gender and employment status of research samples, and their quality of life ($p < 0.05$); But according to the

same tests, marital status, educational level, cause, type and level of spinal cord injury and age group were significantly correlated with some aspects of quality of life ($p < 0.05$) (Table 2). The findings show that in general there is no significant statistical correlation between coping strategies and quality of life for people with spinal cord injury ($p < 0.05$); but a significant correlation was observed between the strategy of accepting with emotional stability ($p < 0.05$) (Table 3). Investigating the relationship between demographic characteristics and their coping strategies, Mann-Whitney and Kruskal-Wallis tests showed that there is a significant statistical correlation between marital status and social reliance strategy and also between the age group and, acceptance and social reliance strategies ($p < 0.05$). Results also showed that the social reliance strategy is negatively correlated with acceptance strategy and positively correlated with fighting spirit ($p < 0.05$); as in the samples studied with higher social reliance the acceptance of this incident was reported at a lower level and they were fighting with spinal cord injury more (Table 4).

Table 1. Demographic characteristics of people with spinal cord injury (n=102)

Variables	n [%]
Age, years	
≤35	50 [49]
> 35	52 [51]
Gender	
Male	72 [70.6]
Female	30 [29.4]
Marital Status	
Single	30 [29.4]
Married	72 [70.6]
Education status	
School diploma	49 [48]
Higher education	53 [52]
Work status	
Employed	21 [20.6]
Unemployed	37 [36.3]
Cause of injury	
Traumatic	59 [57.8]
Non-traumatic	43 [42.2]

Type of injury	
Complete tetraplegia	15 [14.7]
Complete paraplegia	72 [70.6]
Incomplete paraplegia	15 [14.7]
Level of injury	
Cervical	24 [23.5]
Thoracic	22 [21.6]
Lumbar	56 [54.9]

Table 2. Relationships between demographic characteristics of people with SCI and quality of life

Quality of life Variable		Somatic autonomy	Mobility control	Psychological autonomy/ communication	Social behavior	Emotional stability	Mobility range	Total quality of life
Gender	Female	10/46±4/46	4/5±2/40	2/66±2/60	7/70±2/86	1/70±1/53	6/36±2/51	33/45±9/56
	Male	9/54±4/13	5/01±2/51	3/37±2/90	7/06±3/14	1/88±1/89	6/08±3/02	32/97±11/39
Mann-Whitney Test		Z=922/00 P=0/244	Z=946/50 P=0/323	Z=934/50 P=0/281	Z=962/00 P=0/383	Z=1064/00 P=0/904	Z=1047/00 P=0/807	Z=1070/50 P=0/944
Age group	≤35	9/36±4/60	5/26±2/41	2/44±2/45	6/56±2/98	1/88±1/83	6/12±2/92	31/62±10/56
	> 35	10/25±3/83	4/48±2/50	3/86±2/99	7/92±3/02	1/78±1/76	6/21±2/85	34/51±11/01
Mann-Whitney Test		Z=1155/00 P=0/33	Z=10/14/00 P=0/05*	Z=927/500 P=0/012*	Z=919/00 P=0/010*	Z=12/83/00 P=0/90	Z=12/84/50 P=0/91	Z=10/93/00 P=0/165
Marital Status	Single	10/53±4/62	4/83±2/036	3/43±3/37	7/40±2/41	1/60±1/84	7/10±2/82	34/9±10/48
	Married	9/51±4/05	4/87±2/54	3/05±2/58	7/19±3/31	1/93±1/77	5/77±2/82	32/34±10/96
Mann-Whitney Test		Z=927/50 P=0/261	Z=10/77/0 P=0/982	Z=1077/00 P=0/982	Z=10/48/50 P=0/816	Z=936/50 P=0/278	Z=768/50 P=0/021*	Z=931/50 P=0/275
Education status	School diploma	10/06±4/66	5/08±2/22	4/12±3/18	7/75±2/84	2/04±1/91	6/71±2/35	35/77±9/77
	Higher education	9/58±3/82	4/66±2/70	2/28±2/11	6/79±3/21	1/64±1/66	5/66±3/22	30/62±11/27
Mann-Whitney Test		Z=1181/00 P=0/429	Z=1144/50 P=0/299	Z=858/00 P=0/003*	Z=1081/50 P=0/143	Z=1151/50 P=0/311	Z=1077/50 P=0/136	Z=988/50 P=0/038*
Work Status	Employed	9/45±4/13	4/81±2/75	2/64±2/12	6/83±3/38	1/83±1/62	5/48±2/74	31/08±11/41
	Unemployed	10/33±4/07	4/95±2/57	3/28±2/95	6/61±3/18	2/28±2/21	6/04±3/10	33/52±10/85
Mann-Whitney Test		Z=339/000 P=0/418	Z=365/50 P=0/708	Z=351/50 P=0/544	Z=369/50 P=0/757	Z=357/00 P=0/603	Z=349/00 P=0/520	Z=349/00 P=0/522
Cause of injury	Traumatic	10/56±4/62	5±2/70	3/03±2/82	7/71±2/84	1/86±1/80	6/57±2/76	34/25±11/00
	Non-traumatic	10/69±3/06	5±2/21	3/13±3/10	7/21±3/32	1/39±1/94	6/91±2/87	34/34±9/26
Kruskal-Wallis Test		$\chi^2=4/313$ P=0/116	$\chi^2=1/256$ P=0/534	$\chi^2=1/290$ P=0/525	$\chi^2=4/816$ P=0/09	$\chi^2=4/327$ P=0/115	$\chi^2=14/17$ P=0/001*	$\chi^2=4/38$ P=0/112
Type of injury	Complete tetraplegia	9/38±3/76	4/68±2/39	3/12±2/99	6/79±2/96	1/55±1/74	5/79±2/92	31/33±10/75
	Complete paraplegia	7/13±4/25	6/53±2/79	3/26±2/91	7/46±3/22	2/86±1/72	6/53±2/58	33/80±10/44
	Incomplete paraplegia	14/56±2/64	4/06±1/90	3/26±1/86	9/26±2/68	2/13±1/76	7/60±2/55	40/86±8/45
Kruskal-Wallis Test		$\chi^2=25/707$ P=0/000*	$\chi^2=9/578$ P=0/037*	$\chi^2=0/774$ P=0/679	$\chi^2=9/885$ P=0/007*	$\chi^2=8/244$ P=0/016*	$\chi^2=5/543$ P=0/063	$\chi^2=11/43$ P=0/003*

Level of injury	Cervical	12/83±4/49	4±1/88	3/75±2/70	8/66±2/64	2/45±2/02	7/33±2/72	39/04±10/17
	Thoracic	8/63±3/95	5/09±2/58	2/59±2/71	7/90±2/38	1/72±1/95	6/04±2/68	32±8/89
	Lumbar	9±3/97	5/07±2/58	3/10±2/92	6/32±3/20	1/60±1/59	5/63±2/88	30/74±10/99
Kruskal-Wallis Test		$\chi^2=17/845$	$\chi^2=2/752$	$\chi^2=2/892$	$\chi^2=10/49$	$\chi^2=3/374$	$\chi^2=6/595$	$\chi^2=10/181$
		P=0/000*	P=0/253	P=0/236	P=0/005*	P=0/185	P=0/37	P=0/006*

Table 3. Correlation matrix between quality of life and coping strategies among people with SCI

Variables	Somatic autonomy	Mobility control	Psychological autonomy/ communication	Social behavior	Emotional stability	Mobility range	Acceptance	Fighting spirit	Social reliance
Somatic autonomy	1	--	--	--	--	--	--	--	--
Mobility control	-0/15	1	--	--	--	--	--	--	--
Psychological autonomy/ communication	0/18	0/19*	1	--	--	--	--	--	--
Social behavior	0/39*	0/19	0/34*	1	--	--	--	--	--
Emotional stability	0/07	0/15	0/27*	0/24*	1	--	--	--	--
Mobility range	0/50*	0/17	0/29*	0/75*	0/26*	1	--	--	--
Acceptance	-0/09	-0/07	-0/02	-0/08	-0/23*	-0/11	1	--	--
Fighting spirit	0/10	-0/06	0/07	0/09	0/08	0/11	0/18	1	--
Social reliance	-0/09	0/10	0/02	-0/12	-0/07	-0/14	-0/36*	0/19*	1

* significance level • 0.05

Table 4. Relationships between demographic characteristics of people with SCI and coping strategies

Coping strategies Variables		Acceptance	Fighting spirit	Social reliance
Gender	Female	2/74±0/61	2/40±0/36	1/97±0/59
	Male	2/61±0/74	2/3±0/39	2/10±0/63
Mann-Whitney Test		Z=976/50 P=0/444	Z=985/50 P=0/480	Z=945/50 P=0/315
Age group	≤35	2/48±0/74	2/38±0/43	2/23±0/61
	• 35	2/82±0/63	2/33±0/33	1/90±0/59
Mann-Whitney Test		Z=965/00 P=0/02*	Z=1175/00 P=0/395	Z=238/000 P=0/01*
Marital Status	Single	2/52±0/70	2/46±0/37	2/41±0/54
	Married	2/70±0/70	2/31±0/38	1/92±0/60
Mann-Whitney Test		Z=939/000 P=0/297	Z=868/000 P=0/113	Z=616/00 P=0/001*
Education status	School diploma	2/75±0/65	2/37±0/36	2/05±0/64
	Higher education	2/54±0/75	2/33±0/40	2/08±0/60
Mann-Whitney Test		Z=11/50 P=0/198	Z=1227/50 P=0/62	Z=1226/50 P=0/62

Work Status	Employed	2/66±0/68	2/35±0/33	2/09±0/42
	Unemployed	2/38±0/86	2/28±0/39	2/17±0/72
Mann-Whitney Test		Z=311/50	Z=358/50	Z=324/50
		P=0/21	P=0/62	P=0/29
Cause of injury	Traumatic	2/60±0/71	2/35±0/40	2/13±0/61
	Non-traumatic	2/72±0/58	2/37±0/30	1/97±0/54
Kruskal-Wallis Test		$\chi^2=0/393$	$\chi^2=0/181$	$\chi^2=1/75$
		P=0/822	P=0/914	P=0/417
Type of injury	Complete paraplegia	2/72±0/70	2/36±0/38	2/13±0/61
	Incomplete paraplegia	2/58±0/65	2/24±0/45	1/86±0/58
	Complete tetraplegia	2/36±0/73	2/44±0/26	1/91±0/67
Kruskal-Wallis Test		$\chi^2=3/205$	$\chi^2=1/469$	$\chi^2=3/603$
		P=0/20	P=0/48	P=0/165
Level of injury	Cervical	2/57±0/66	2/39±0/32	1/98±0/60
	Thoracic	2/79±0/74	2/36±0/38	2/04±0/74
	Lumbar	2/61±0/71	2/32±0/40	2/12±0/58
Kruskal-Wallis Test		$\chi^2=0/758$	$\chi^2=0/373$	$\chi^2=1/313$
		P=0/684	P=0/83	P=0/519

DISCUSSION

This study aimed to determine the relationship between coping strategies and quality of life of people with spinal cord injury. The results showed that the quality of life of people with spinal cord injury participating in the study was determined at moderate level. In this regard, the results of Shahandeh et al. (2005) and Moghimian et al.'s studies (2015) showed that 73.3% and 54.7% of disabled persons with spinal cord injury assessed their quality of life moderately [9, 21]. But since the disability can create limitations for victims therefore it can affect their quality of life compared to their healthy counterparts; As Bakhtiari et al.'s study results (2012) showed that people with disabilities obtained lower score of quality of life than healthy individuals [22].

In the present study the relationship between quality of life for disabled people with spinal cord injuries and the gender and their employment status was not statistically significant, which is consistent with the results of Barker et al.'s study [23]. One of the interesting results in this study was the observation of a statistical correlation

between level of education and the quality of life of people with spinal cord injury so that persons with disabilities at a lower education level than high school degree have gained higher quality of life score, which in this case it is argued that people with lower education have less understanding of the situation and do not have enough knowledge of the potential consequences, so they had better psychological autonomy and communication and higher quality of life [14]. One of the results of this study was that the relationship between the cause of the accident and the mobility range was statistically significant, as people with non-traffic accidents had higher mobility that is not consistent with the results of Shahandeh's study [9], that these results may imply feeling of guilt and in some cases reckless and careless driving.

In this study, the type of injury had significant statistical correlation with all areas of quality of life with the exception of two areas of psychological autonomy/ communication and mobility range; as disabled people with incomplete paraplegia had higher quality of life

score compared to full paraplegia and tetraplegia group. Results of van Leeuwen's study (2011) showed that quality of life is correlated with factors such as higher mobility, better understanding of the physical health, social support, psychological functioning and self-efficacy in communication [24].

In this study social reliance strategy had significant statistical relationship with marital status as single people had more reliance, it may be argued that single people feel a greater need for reliance to their surroundings due to receiving less social support. Social support is significantly correlated with mental and physical health, coping, adaptation and life satisfaction among people with spinal cord injury [25]. In this study, disabled people with spinal cord injuries who were older than 35 years were more accepting. In Stensman's study (1994), one of the factors related to unsatisfactory coping, was age more than 35 years at the time of spinal injury that is incompatible with the results of the current study. The author argued that older age at time of injury creates problems in compliance, because with increasing age there is a lack of energy to cope with life changes [26]. According to Chen et al's study (2011) there was no relationship between the characteristics of disabled people with spinal cord injury (demographic and disease) and coping behaviors therefore, all persons with spinal cord injury are expected to be able to lead with any specifications of their injury toward coping behaviors, provided they receive optimal rehabilitation care [16]. Nasiripour et al. (2013) with an intervention concluded that, quality of life, daily living skills, motor skills, social interaction and participation in social life for disabled people is significantly enhanced after the implementation of the rehabilitation program. So, for reflecting the quality of life for people with disabilities of spinal cord injury, factors such as life satisfaction, and impact of disability should be considered [27].

In general in this study, no significant correlation was observed between coping strategies and

quality of life of people with spinal disabilities but there was a significant negative correlation between the strategy of accepting disability and quality of life, emotional stability. This means that the samples which accepted spinal cord injury had less emotional stability; it seems this kind of acceptance was not real and they have accepted the injury in appearance and in the backend have not yet achieved a deep understanding of acceptance and the fight it still in secret. Dijkerso's study results (2007) showed that people with spinal disabilities have lower mental health than non-disabled [28]. Wijesuriya et al. (2012) in their study reported that about 40 percent of persons with SCI are at risk for psychological disorders like depression and anxiety and this group are people who think they have no power to influence their lives and have poor efficacy. Then attitudinal factors such as self-efficacy affects the quality of life more than disability-related factors (e.g. injury level and partiality or completeness of it). Clearly challenges associated with spinal cord injury are extensive and there is need to an ongoing rehabilitation program to help the affected people for creating personal and social compatibility [29]. The results of van Leeuwen et al.'s study (2011) showed that life satisfaction will be improved in the early stages after injury but in the number of victims it may take considerable time to adapt to the new situation. Monitoring life satisfaction in beginning of active rehabilitation and 3 months later is considered as a useful method to identify individuals at risk for poor long-term compatibility [24]. Elfstrom et al. (2007) concluded that quality of life is significantly correlated with coping and in situations where people can re-evaluate their values and life events and reduce his tendency to their dependence treat, their quality of life will be improved [13]. Martz (2005) states that SCI can lead to permanent changes in the physical performance and the logical consequence is that the injured person can cope with his disability with psychological efforts, hence the SCI coping process is considered an important issue whose

achievement is the promotion of the quality of life of these individuals [6].

In this study, some aspects of quality of life were significantly correlated with each other. For example, mobility range was positively correlated with dimensions of somatic autonomy, psychological autonomy/communication, social behavior and emotional stability as, disabled persons with spinal cord injury with higher average score of mobility range had experienced those aspects at higher levels. Various factors can affect the mobility range of the samples for example, communication method of other people with this group of people is one of the factors referred by disabled people in their oral negotiations. Gelis (2011) also stated that healthy people avoid of close communication with persons with disabilities and this reduces the mobility of persons with disabilities in their personal and social life [30]. Criag et al. (2012) in their study to determine the relationship between fatigue and other factors such as mood states and self-efficacy in spinal disabled people concluded that psychological factors cause elevated levels of fatigue in this group. SCI disabled people not only face restrictions on their mobility which prevents participation in social activities but also most of them, especially those with tetraplegia need support from caregivers (health team / family) to do their work. Therefore, designing strategies to reduce social barriers and improve their mobility seems obvious [31].

Emotional stability in the subjects is positively correlated with psychological autonomy/communication and social behavior; this means that the subjects who had more emotional stability had higher psychological autonomy/communication and social behavior. The results obtained by Kumar (2012) on Indian people with spinal cord injury who had undergone rehabilitation showed that quality of life is significantly correlated with social participation and social participation is associated with increased score of somatic autonomy and social behavior [32]. If the conditions will be provided

for the active participation of people disabled with spinal cord injury in society to play role like before then their mood states have been improved by increasing the self-efficacy, and achieve emotional stability, of course, in this context they should be supported by family members and their health care team. In the present study the social behavior had direct and significant relationship with physical and psychological autonomy, so that people who had better social behavior, showed better physical and mental autonomy and better communication. Silver et al. (2012) conducted qualitative research to determine barriers for people with spinal cord disabilities who aimed to return to the society. Participants in the study presented health problems such as depression and reduced quality of life associated with returning to work or school, compatibility with new roles in the community and obtaining individual independence [33].

The obvious finding in this study was the observation of significant and positive correlation of psychological autonomy and communication with the mobility control so that, persons with disabilities with higher average score of psychological autonomy, also had better control over their movements. The results obtained by Coleman et al. (2015) suggest that two variables of quality of life and mental health in disabled people with spinal cord injury are interconnected with each other and, people who use less energy to perform self-care activities and have lower general health experience more anxiety [34].

In this study, subjects were only selected among members of the Association of SCI Disabled of Yazd city because access to them at the community level for their participation in research is difficult. Disabled people who passed the acute phase of injury (12 weeks up to 3 years) were enrolled in the study that it can make the generalizability of the study difficult. Due to limited Iranian studies in the field of quality of life and coping styles used by people with disabilities of spinal cord injury, it was not possible to efficiently compare the results. Therefore, it is

suggested to conduct internal studies through qualitative methodologies to be able to design and conduct health promotion interventions by explaining the perception of the disabled people with spinal cord injury of their living conditions.

CONCLUSION

Irreversible SCI is one of the most catastrophic events that may happen in the life of a human being. Compliance with such a situation needs to try and rush and spend vast energy for searching for a new values in the life. In this regard, full support from relatives and society is needed for this group of victims not to feel alone and powerless. When disabled people with SCI have sense of physical autonomy in self-care activities, achieve mental emotional stability, actually accept their disability and do not fight with it, their quality of life will be certainly improved. Strengthening the rehabilitation system in the country and predicting the facilities required for disabled people in the community can ensure their self-efficacy and mental health.

FINANCIAL DISCLOSURE

This study was approved by the Research and Ethics Committee of Shahid Sadoughi University of Medical Sciences with IR.SSU.REC.1394.200 Code.

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