

**Exploring Facilitators of Post-traumatic Growth in Patients with Spinal Cord Injury: A Qualitative Study**Mohammad Saeed Khanjani<sup>1</sup>, Seyed Jalal Younesi<sup>2</sup>, Hamid Reza Khankeh<sup>3</sup>, Manouchehr Azkhosh<sup>4</sup>

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**Type of article:** Original**Abstract**

**Introduction:** There is increasing evidence regarding people's reactions to life stressors in which people also may show positive experiences following a traumatic event. The aim of the present study was to explain the facilitators of post-traumatic growth based on the experiences of patients with a spinal cord injury.

**Methods:** This was a qualitative study conducted on 16 Iranian patients with a spinal cord injury using semistructured, in-depth interviews, and content analysis in 2015. These participants, despite their spinal cord injury, were successful in their lives and were considered successful members of society. A purposive sampling method was used until reaching data saturation, and then the collected data were analyzed using a content analysis method.

**Results:** The study revealed several factors as facilitators of post-traumatic growth in the patients. The extracted facilitators were put into seven categories of main concepts, including existence of support resources, contact with spinal cord injury associations, spiritual beliefs, positive attitude toward injury, access to proper facilities, enhancement of knowledge and awareness, and active presence in society.

**Conclusion:** Different factors may facilitate post-traumatic growth in patients with a spinal cord injury. Understanding these facilitators may help us in designing educational, support, and consulting programs for patients and their families as well as to the correct the support programs.

**Keywords:** Post-traumatic Growth, Spinal Cord Injury, Iran

**1. Introduction**

Traumatic events always threaten human beings, and most people will face at least one traumatic event or another kind of life crisis in their lives (1). Psychological studies on people's reactions to life stressors have mainly focused on negative consequences, but increasing evidence shows that people may have positive experiences following traumatic events (2). The positive changes resulting from traumatic events are called post-traumatic growth or stress-related growth (3). Post-traumatic growth is one's experience of a significant and positive change resulting from struggle against a major life crisis (4). Although post-traumatic growth may not completely eliminate the psychological effect of trauma, some people may find new meaning and purpose after a traumatic experience that leads them to positive personal changes (5). One of the fatal and common traumatic events in all societies is spinal cord injury, and people with this injury are vulnerable to stress and severe mental suffering, due to experiencing rapid debilitating changes and facing numerous challenges (6). Spinal cord injury can have overwhelming consequences and affect different parts of one's life. Spinal cord injury is a disability with a significant impact on

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the lives of patients and may create numerous problems for them (7, 8). Several studies have shown the negative psychological consequences of spinal cord injury, such as depression, anxiety, fatigue, anger, PTSD, and suicide (6, 8, 9). Spinal cord injury that is caused by trauma to the spinal cord can lead to destructive outcomes; the result of spinal cord injury is often permanent paralysis of the muscles below the injury level, reduced mobility, and impairments in social and professional activities and may have negative impacts on the body systems, such as respiratory, cardiovascular, urinary, digestive, and sensory situation (10). There have been many studies on the prevalence and incidence of a spinal cord injury. For example, in a study by the National Spinal Cord Injury Statistical Center (2014), the incidence of spinal cord injury, in the United States, was reported as about 40 cases per million population or 12,000 new cases each year (10). In a study by Rahimi Movaghar, which examined the epidemiology of spinal cord injury in developing countries, including Iran, between the years 1989 and 2012, the results showed that the incidence of spinal cord injury in developing countries was 25.5 per million people a year. In another study, the incidence of spinal cord injury in Iran was reported as 72.4 cases per million, and the causes of spinal cord injury in Iran were estimated as follows: motor vehicle accidents (64%), falls (12%), and other causes (24%) (11). Spinal cord injury as a common traumatic event has some consequences, one of which is post-traumatic growth (12). Overall, there could be three different mental reactions to a traumatic event, including stress, resiliency, and growth. Post-traumatic stress disorder (PTSD) is a reaction to trauma that involves a lot of stress; resiliency occurs when a person returns to his/her normal life, without any serious mental trauma (13), but post-traumatic growth not only includes returning to a normal condition that existed before a traumatic event and adjusting to it, it also includes a personal experience of growth and development that is beyond one's normal philosophy of life that existed before the event (14). In recent decades, due to an improvement in medical care, the average life expectancy of patients with spinal cord injury has increased significantly (6). Nevertheless, spinal cord injury remains as an important event in the lives of many people, which may lead to serious physical disabilities, medical problems, and secondary psychological problems that may affect the life quality of patients and their families (9, 15). With regard to the high prevalence of spinal cord injury, especially in Iran, it is necessary to pay special attention to the life condition of patients with a spinal cord injury and factors that can be helpful in the improvement of their quality of life, especially their mental health. This can help them have better and more positive experiences after a spinal cord injury along with increasing their life expectancy. The aim of the present study was to explore the factors that can facilitate post-traumatic growth in these patients. The facilitators are extracted from the experiences of the patients with a spinal cord injury who are successful and have experienced post-traumatic growth.

## **2. Material and Methods**

### **2.1. Study design**

This qualitative study was conducted using a content analysis method on 16 Iranian patients with a spinal cord injury using semistructured, in-depth interviews in 2015. Because the aim of this study was extraction of facilitators based on real experiences of participants from the phenomenon of post-traumatic growth, a qualitative approach can be appropriate because qualitative methods can provide deep insights into people's experiences and perceptions and, moreover, details of the phenomena that are difficult to show by quantitative methods (16, 17). Content analysis is a qualitative method to linking data to a main theme, and its final product is concepts and categories describing the phenomenon under study. Therefore, this study, which sought to provide descriptive categories from the facilitator of post-traumatic growth, was proper. (18).

### **2.2. Sampling method**

Participants were selected using a purposive sampling method from different age and education groups, and they had different experiences and roles in their lives. Despite their spinal cord injury, they were successful in their lives and were considered successful members of society; based on clear evidence, they had different achievements, including a full-time job, success in sports, invention and innovation, or permanent voluntary activities. The reason for purposive sampling was selection of cases that had rich experience of growth and success after a spinal cord injury. Sampling was continued until data saturation, and further data collection failed to provide additional information.

### **2.3. Data collection and analysis**

An in-depth semistructured interview was used to collect data. In the present study, the data were collected directly and without any presupposition, from the study participants. Codes and categories were obtained using an inductive process, and concepts were extended based on their characteristics and dimensions (17, 19). Before conducting the interviews, the aim of the study was explained to the participants, and their written consent for participation in the study was obtained. All interviews were recorded completely and were transcribed verbatim. The interviews lasted for 39 to 87 minutes, and one to two interviews were conducted for each participant. For several participants, who

had successful experiences after the injury and did not have enough time to continue the interview in a session, the second interview was conducted for complete information. Overall, 21 interviews were conducted. The interviews began with general questions, such as “describe your life after spinal cord injury” or “what factors helped you accept the injury and become successful after that.” The next questions were designed based on the previous questions and gradually became deeper and more specific. The purposeful sampling continued until reaching saturation in every concept, so that further data did not lead to new information about the concepts. In this qualitative study, a qualitative content analysis, as a research method, was used to analyze data, and a systematic categorization was used to code and identify concepts. The processes of interviews and data analysis were done simultaneously. Before coding, the interview content was read several times in order to understand its general meaning; then the content was divided into meaning units hidden in that. Then the following procedures were carried out: meaning units were abstracted and codes were assigned to them, primary codes were attached to subcategories and main categories based on similarities and differences. After completion of coding, assuring precision of coding, and categorizing them, concepts were identified (16, 20, 21). Interviews were conducted and analyzed in Persian, and then the categories and quotations were translated into English.

#### ***2.4. Validity and reliability of findings***

The following measures were taken to increase validity and reliability of the findings (16, 22, 23):

- 1) The researcher was involved with the data for a long time, until reaching data saturation
- 2) The research team members reviewed the data independently, and then coding, categorizing, and finally compared them with each other (peer check)
- 3) A summary of the primary results was given to the participants to ensure the matching results with their experience (member check)
- 4) The coding and categorization processes were controlled by the experts who guided the study (expert check)
- 5) Documenting all stages of investigation to make usability for other researchers

#### ***2.5. Ethical considerations***

The present study was adapted from the first author’s PhD thesis and was approved by the ethics committee of the University of Social Welfare and Rehabilitation Sciences (Ref.: IR.USWR.REC.1394.42). The aim and procedures of the study were explained to the participants, and informed written consent was obtained. The participants were assured that their personal information would remain confidential, and quotes would be selected in a manner that would not disclose their identity. Moreover, participants were allowed to leave the study at any time.

#### ***2.6. Data analysis***

Qualitative content analysis was used to analyze the data. For data analysis: first, recorded interviews were transcribed verbatim, then the interview content was read carefully in order to understand its general meaning; after that, the content was divided into meaning units. Codes were extracted by an inductive process via open coding by reading line by line of the meaning units and devoting relevant codes to it. Then, subcategories and categories emerged by constant comparison of codes. Peer check and constant comparison were used to reach a consensus in coding. Finally, with completion of coding, assuring accuracy of coding, and categorizing them, various concepts were identified.

### **3. Results**

Study participants included 16 patients (nine men and seven women) with a spinal cord injury who were successful in their lives after injury. They were aged between 26 to 63 years, and their average age was 46.6 years. The participants were different in terms of the time passed after injury; the average of this time was 20 years. Table 1 shows in detail the demographic characteristics of the samples. The results from the data analysis regarding the facilitators of post-traumatic growth in patients with a spinal cord injury, revealed seven main concepts. These concepts and other related concepts are shown in Table 2. The concepts are as follows.

#### ***3.1. Existence of support resources***

According to the participants, one of the most important facilitators of post-traumatic growth is existence of proper support resources after injury. In fact, many patients stated that, without these supports, they would not be able to develop and become successful. From the perspective of these patients, the most important support resources were their family members, friends, and acquaintances who helped them overcome the primary problems. The patients also emphasized on the importance of the continuity of support. In this regard, one participant stated: “I wouldn’t

have achieved anything without the help of my family. I would've been, probably, cooped up in the house, just the same as I was in the first year after the injury. My families were sympathetic to me, and they didn't react negatively to my suggestions or things that I wanted to do. Even if they thought something was not good for me, they talked to me about that and stood by my side as much as they could; it was their support that motivated me and helped me reach this level of success." Beside support from family, organizational support was also considered as an important factor in the post-traumatic growth of the patients. This kind of support was especially important in their returning to work and in their physical and mental adaptation to their new condition in the workplace. Regarding receiving help, one of the participants stated: "The organization that I worked for prepared me, mentally, to continue my work; they told me that I had to enter my workplace again, and they said that they needed me; therefore, I really felt that, despite my condition, they needed me and wanted me. The organization also created a ramp for me. When I saw these supports, despite all of my problems, my motivation to work in the organization increased." Therefore, the availability of proper support and continuity of support are among the main facilitators of post-traumatic growth in patients with a spinal cord injury.

### ***3.2. Contact with spinal cord injury associations***

One of the effective factors in the lives of patients with a spinal cord injury is having successful interactions with other patients with this injury, especially through spinal cord injury NGOs. The participants stated that interaction with other patients had helped them gain experience needed to deal with problems, change their attitude toward injury, and also become aware of their capacities to start the process of empowerment. Furthermore, patients with post-traumatic growth stated that they had received great sympathy from other patients with a spinal cord injury because they had common problems. Regarding the positive outcomes of such relationships, one participant explained the issue as "after some years, I learned about an association for patients with spinal cord injury. I saw many problems there, but I felt I could continue, and this was a very good event in my life. There were some personal problems that every patient with a spinal cord injury experiences. With the help of the experiences of other patients in the association, I learned how to deal with my problems in a better way." Another participant mentioned "in the spinal cord injury association, I discovered some of my capacities that I was not aware of before. It was after this that I started to continue my education."

### ***3.3. Spiritual beliefs***

One of the facilitators of coping with injury and achieving success was spiritual beliefs—the belief that the injury is divine destiny and one should accept that. Spirituality helped participants find meaning in their lives after injury. This meaning helped them create a better life for themselves after injury and had an important role in making their lives purposeful. According to their spiritual beliefs, God helped them tolerate difficulties and move toward progress. They also believed that, in times of problems and difficulties, doors of opportunities were opened to them. They also believed that God would compensate their sufferings in other areas of life. One participant said, "I believe in fate and the will of God, but we have also control over many things. It comforts me a little to think that life continues, this is God's will, and I should accept my fate." Another participant stated, "Maybe I didn't think like this before, but now I have reached the conclusion that I have a mission here; I constantly think that God chooses some people for some situations. I know that this injury happened to us because we were needed to do big things with this condition." One participant noted, "I think God really helps; sometimes when I become really helpless, suddenly things happen that I didn't expect; sometimes suddenly, a door opens for me."

### ***3.4. Positive attitude toward injury***

Experiences of the participants indicated that one of the factors that can have a role in patient's reaction to injury is their attitude toward it. The attitude toward their injury can play an important role in their life after injury. These successful patients did not consider their injury as the end of their lives and did not see their limitations as barriers to being active and achieving success. They had a correct understanding of their condition and had accepted their limitations. They considered the spinal cord injury as walking with a wheelchair and were always hopeful that their condition would improve. They had a positive view of being active after injury and considered that as a necessity to remain healthy in the face of their injury. With regard to having a positive attitude, a participant stated: "There are other people like me; it's not the end of the world. They can continue their lives, and it is up to them. It is all dependent on our mindset and beliefs. If we have correct beliefs, nothing is a limitation. These are barriers and limitations that we make for ourselves, and none of them can be an excuse for not being active." The participants had positive attitudes toward being active after injury and believed that the least result of being active is becoming healthier. One of these successful participants said, "The least result of being active is that you won't get depressed, you won't get other diseases, and your spirit will be boosted; this is good both for you and your family." They had

positive attitudes toward the future and were hopeful that their condition would improve in the future. One participant noted that, "I see a bright future; I'm not worried about the future; at first, I was very concerned; I constantly feared that, God forbid, if my mom didn't look after me, what could I do, but now I'm not worried at all, because I can solve all my problems; I can, even maybe, look after my mom."

### ***3.5. Access to proper facilities***

According to the experiences of the participants, in addition to personal qualities, access to proper facilities have an undeniable role in the success of patients with a spinal cord injury. In fact, having access to proper facilities had an important role in the empowerment of the patients, improved their independence, and reduced the burden of care provided by their families. The patients also believed that the financial strength was a necessity for access to proper facilities, being independent in the house, being active in the society, and moving toward growth. A participant said, "New rehabilitation aids are very helpful. Being well-equipped with rehabilitation aids is very important in your success in life. For example, my wheelchair has foam-filled tires, so I can safely move on all surfaces, without having a flat tire. But, if my wheelchair's tires were air-filled, I would be worried, every time I went outside." Referring to the fact that patients must be able to afford the costs of proper facilities, another participant stated, "If you are poor, and if you don't have suitable elevator or go outside with a low-quality wheelchair or with shabby clothes, society may not accept you, so financial aspects are important."

### ***3.6. Enhancement of knowledge and awareness***

According to the participants, an important principle for correct exposure with a spinal cord injury is to have understanding and awareness of how to comply with this injury and its complications. They stated that the following outlines important factors in the adjustment to injury: an increase in one's awareness of the injury, focusing on one's intact capabilities, and knowing the consequences of a lack of change in a situation after injury. Regarding the role of awareness in the adjustment to injury, a participant stated, "Given that I was a student familiar with research, I started researching and reading books and learned about the consequences of my problem; I was not able to walk, had urinary and fecal incontinence, had lost completely my sexual desire, as if I had become a new creature. I understood that I had to deal with my problems. I think finding correct information about my injury helped me a lot. After that, every time I wanted to do something, I tried to find relatively comprehensive information about that. Despite my injury, this awareness helped me very much to be able to succeed in my life." Another participant said, "When I thought more about my condition and found more information about that, I recognized that I had only lost my legs, but my brain was healthy, my mind was healthy, my hands were healthy. Therefore, I realized that it is not just your legs that are useful, but your mind is also very important."

### ***3.7. Active presence in society***

Their presence in society and social participation had a significant role in the post-traumatic growth and success of these patients. Social activity in the form of participation in self-help groups of people with disabilities, sports and entertainment activities, working, and finding an active role in society were important factors leading to a sense of usefulness in the patients. The participants described their presence in society as a turning point in changing themselves after their injury and stated that it enabled them to turn the feelings of being a burden to others into the feelings of usefulness. According to the participants, the most important factor in having a sense of growth was a feeling of usefulness, and they believed that social participation was necessary to have this feeling. They also stated that, after finding an active presence in society, due to an improvement in their physical and mental health, in addition to being able to change their own condition, they could significantly reduce the burden of care provided by their families and have an effective role in society. In this regard, one participant said, "I realized that if I stayed at home, it would become hard for me, and I would get bed sores and other problems. I realized that, in that way, I would harm both myself and my family; therefore, I decided to begin an activity and started to work. It's better for you, mentally, to be in society; it doesn't let you think negatively." Another participant stated, "Work, activity, and entertainment, together, can help us, mentally, especially if we do these things with people who are like us because we have a better understanding of each other, and this mutual understanding can be very helpful." One of these successful patients said, "I didn't like that they look at me as an ineffective disabled person, especially my family, because when you are disabled, no matter how kind your family members are, they still look at you as a disabled person who can't work; this really annoyed me, and I didn't want to be this viewpoint toward me. So, I went looking for a job, and after I started working, I felt better about myself, and I didn't feel as a burden anymore. My family were also less troubled by looking after me in the house."

**Table 1.** Demographic characteristics of participants

Participant no.	Age (year)	Education	Cause of injury	Location of injury	Injury duration (year)	Marital status	The main activity
1	39	High school diploma	Accident	Thoracic	22	Single	Association board of spinal cord injury
2	40	B.Sc.	Accident	Thoracic	11	Married	Manager of comprehensive rehabilitation clinic
3	37	M.Sc.	Accident	Thoracic	9	Married	Military
4	60	M.Sc.	War damage	Thoracic	32	Married	Inventor of rehabilitation equipment; entrepreneur
5	62	M.Sc.	Spinal cord tumor	Thoracic	8	Married	Design and manufacture of rehabilitation equipment
6	63	B.Sc.	Accident	Cervical	10	Married	Association board of spinal cord injury
7	41	M.Sc.	Accident	Thoracic	22	single	Managing director of spinal cord injury association
8	52	Physician	War damage	Thoracic	32	Married	Medical
9	34	University student	CSF infection	Thoracic	17	single	Association board of spinal cord injury
10	53	M.Sc.	War damage	Thoracic	32	Married	Attorney
11	55	B.Sc.	War damage	Thoracic	32	Married	Military
12	26	B.Sc.	Accident	Thoracic	5	single	National team member of archery
13	45	B.Sc.	Bullet strikes	Thoracic	22	Married	Civil engineer
14	34	M.Sc.	Accident	Thoracic	27	single	Musician, bandleader
15	48	B.Sc.	Accident	Cervical	29	Married	Association board of spinal cord injury
16	57	Physician	War damage	Thoracic	31	Married	Medical

**Table 2.** Outline of the identified facilitators and their subcategories

Extracted concepts (categories)	Related concepts (subcategories)
Existence of support resources	1) Family support and continuity of this support, 2) Organizational support, 3) Friends help in passing the problems
Contact with spinal cord injury associations	1) Using other people's experiences, 2) Helping to change attitude toward injury, 3) Recognizing their talents and capacities, 4) Receiving proper empathy
Spiritual beliefs	1) Accepting one's fate, 2) Believing in God's help for achieving success, 3) Believing that god will compensate for one's suffering compensation for endure hardships by God, 4) Finding a meaning for the injury
Positive attitude toward injury	1) Believing that life continues after injury, 2) Not considering limitations as barriers to activity and success, 3) Hope to improve conditions
Access to proper facilities	1) Using proper rehabilitation aids, 2) Living environment that promotes more independence, 3) Financial resources to obtain the necessary facilities
Enhancement of knowledge and awareness	1) Knowing one's injury for a better adaptation to condition, 2) Attention and recognition capabilities healthy parts of the body, 3) Understanding the consequences of the injury that help acceptance and change
Active presence in society	1) The role of social activity in health, 2) Reduce the burden of caring for family, 3) Gaining a sense of usefulness

#### 4. Discussion

The results of this study, which were based on the experiences of successful patients with a spinal cord injury, revealed some factors as facilitators of post-traumatic growth. These facilitators included existence of support

resources, contact with spinal cord injury associations, spiritual beliefs, positive attitude toward injury, access to proper facilities, enhancement of knowledge and awareness, and active presence in society. The concepts observed in the present study show the facilitating role of personal factors, such as attitude, beliefs, and effort and also external factors such as support, relationships, and having access to different facilities in post-traumatic growth. Having access to support resources was one of the main concepts extracted from this study. The participants considered support from family, friends, and also organizations as an important facilitator of post-traumatic growth, and stated that the continuity of support had increased their motivation to move toward success; this finding is comparable with some previous findings. For example, the study of Joy Wee showed that the availability of support resources can contribute to activity and participation of people with disabilities. Existence of support resources such as organizational systems, including rehabilitation teams that provide instrumental, practical, and informational support, machinery transportation, and income can be effective in increasing activity and participation in people with a disability (24). Muller showed that social support is positively related to physical and mental health, pain, coping, adjustment, and life satisfaction of patients with a spinal cord injury (25). The study results of McDonough suggested that social support predicts higher levels of post-traumatic growth and well-being in women with cancer (26), but, another study by Teixeira, on the factors related to post-traumatic growth in the adult offspring who their parents were being treated for cancer, showed no significant relationship between social support and post-traumatic growth (27). Having contact with other patients with a spinal cord injury, especially through spinal cord injury organizations, was one of the main findings of the present study; this kind of relationship provided a good source of empathy and also useful experiences for patients. In this regard, the study of Babamohamadi showed that having access to support networks, including having contact with other patients with a spinal cord injury, was a significant factor in coping with a spinal cord injury (28). In another study by Morris et al., on the development of post-traumatic growth in cancer patients, the patients considered their compassion for people like themselves as one of the positive outcomes of their illness, through which they could have more empathy for and a better understanding of the people diagnosed with cancer (29). In a study by Chun, patients with spinal cord injury considered the experience of meaningful interactions in activities as one of the positive outcomes of their injury that had helped them know their personal strong points and experience strengthened social relationships and positive feelings (30). Having spiritual beliefs was also an important personal facilitator of post-traumatic growth in participants. It helped them find a meaning for their injury and their life after that, tolerate difficulties, and achieve positive consequences after the injury. The positive effects of spirituality in people with disabilities have been shown in different studies. For example, Preti showed that religious coping is an effective strategy for post-traumatic growth (31). Babamohamadi also found the facilitating role of spiritual beliefs in coping with a spinal cord injury (28). Mactavish indicated that reconnecting with spirituality is one of the important strategies for coping with different life stressors in people with physical disabilities (32). In another study by Chan, positive relationships were found between post-traumatic growth and positive religious coping, including asking for spiritual support or making well-intentioned religious appraisals, such as “God may be trying to strengthen me in this situation” (33). Participants of the present study also stated that their spiritual beliefs had helped them find a reason for their injury. They also believed that a feeling of receiving help from God had been helpful in their success.

The positive attitude of the study participants after their injury not only protected them from psychological problems, such as depression and anxiety, but also facilitated their coping with limitations. Moreover, not considering their injury as a disaster helped them enhance their health despite limitations and remain hopeful for an improvement in their condition. Different studies have examined the relationship of positive attitude and optimism with other variables in people with disabilities, including the study of Kortte et al., which indicated that hopefulness and positive affect were positively associated with life satisfaction in patients with a spinal cord injury (34). Babamohamadi also showed that positive thinking and optimism are significant factors in coping with a spinal cord injury (28). Joseph and Linley found that acceptance and coping, along with a positive interpretation, are related to positive outcomes after trauma (35). Having access to proper facilities was another important and effective factor in the lives of the study participants and, along with personal characteristics and beliefs, was a significant facilitator of independence in the environment and moving toward success. According to study participants, access to proper rehabilitation equipment, such as high-quality wheelchairs that provide more mobility, lifts, or access to proper health facilities, had an undeniable role in helping them reach this level of performance and efficiency. On the other hand, financial issues were also important in the participants’ ability to access proper facilities; therefore, we can argue that financial ability has an important role to success. In a study by Rimmer et al., examining the barriers and facilitators of participation of patients with disabilities in physical activities, three important factors were identified: the cost of participation in activities, having access to facilities, and availability of resources (36). Wee and Paterson also found that having access to proper equipment and facilities and an adequate income to obtain these equipment

and facilities were important factors in the physical activity and social participation of people with disabilities (24). Having a proper understanding of the injury, its consequent limitations, and especially understanding the complications of the injury significantly helped participants accept their injury and begin a positive change. According to the experiences of participants, access to correct information about the injury had a significant role in learning how to cope with it. In addition, they considered the unavailability of comprehensive information about the injury as a barrier delaying a patient's relative stability after passing the critical period of injury.

Correct information about the permanent, primary, and secondary complications of the injury and about what can be done to prevent or reduce these complications were some of the essential needs of the participants. Rimmer et al. showed that access to proper information was one of the important factors in the participation of people with disabilities in physical activities (36). Mullre and Peter found that informational support, such as peer counseling, is part of social support for disabled people (25). Babamohamadi also showed that lack of knowledge and understanding about the injury is a barrier to coping with this (28). According to study participants, active presence in society was one of the facilitators of the beginning of a change in a situation and then growth after trauma. Participants described their leaving home as the first step in changing their lives and stated that their presence in society gradually increased their activity, reduced physical complications and the burden of care, improved their mental condition, and, most importantly, removed the feeling of being a burden to others and enhanced the feeling of usefulness. Many studies have been conducted on the social participation of people with disabilities, especially patients with a spinal cord injury; most of these studies have focused on the factors influencing this participation. For example, Wee and Paterson and Rimmer et al. examined the facilitators and barriers of participation in physical activities in people with disabilities (24, 36). In an examination on the impacts of participation of patients with a spinal cord injury in leisure activities on their health, Chan and Lee found that participation in such activities may create opportunities to discover one's abilities and potential, create companionship and meaningful relationships, deal with the injury more reasonably, and find meaning in one's life (37). Given that the goal of the present study was to extract facilitators of post-traumatic growth, based on the real experiences of successful patients with a spinal cord injury, the study findings can be used in designing support, educational, rehabilitation, and counseling programs.

## **5. Conclusions**

The results of the present study indicated that some factors may facilitate the process of post-traumatic growth in people with a spinal cord injury. The findings showed seven categories of facilitators, including existence of support resources, contact with spinal cord injury associations, spiritual beliefs, positive attitude toward injury, having access to proper facilities, enhancement of knowledge and awareness, and active presence in society. Although the study results may not be generalizable to all countries and populations, they may be used in similar cultures and situations. Given that patients with a spinal cord injury are often faced with common basic problems, the findings of the present study show the necessity of special support for this group of patients, after their injury, and also the importance of personal beliefs and attitudes in experiencing post-traumatic growth. This result can be useful for counseling interventions in spinal cord injury patients and their families to accept, cope, and move toward post-traumatic growth.

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## **Conflict of Interest:**

There is no conflict of interest to be declared.

## **Authors' contributions:**

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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