The Role of Social Support, Life Meaningfulness, and Centrality of Religiosity in Posttraumatic Growth and Life Satisfaction of People with Spinal Cord Injury

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Abstract

Background: Spinal cord injury (SCI) is a type of chronic disease with physical and psychological effects on the individual's life. The disease can have a devastating effect on the life and well-being of patients with SCI. The current study aimed at investigating the role of social support, life meaningfulness, and centrality of religiosity in posttraumatic growth and life satisfaction of people with SCI.
Methods: The current study was conducted on 157 subjects with SCI selected by convenience sampling method in the Welfare Organization of Khorramabad city, Iran in 2016. The subjects completed the centrality of religiosity scale, the posttraumatic growth inventory, satisfaction with life scale, the meaning in life questionnaire (short-form), and multidimensional scale of perceived social support. Data were analyzed with stepwise regression method (F test and t test).
Results: The obtained results indicated that the most important predictor of posttraumatic growth was family support and the most important predictor of life satisfaction was friends support. In sum, all predictor variables explained 62% of posttraumatic growth and 38% of life satisfaction.
Conclusions: The current study findings showed that social support, meaningfulness, and religious believes can help people with SCI to adapt with problems related to their illness.

Keywords: Social Support, Life Meaningfulness, Centrality of Religiosity, Posttraumatic Growth, Life Satisfaction

1. Background

People face many damage events throughout their lives. Damage events such as attacks or violence are investigated as traffic or work accidents and natural disasters such as earthquakes, floods, or storms (1). Spinal cord injury (SCI) is a condition that has severe health, social, and psychological consequences and as a trauma to spinal cord; it can happen through traumatic and non-traumatic events (2). Patients with SCI have motor and sensory impairment and impaired digestive and intestinal function, which cause disability in everyday activities (3). One of the main challenges for people with SCI is to adapt to the devastating physical and psychological consequences of SCI (4). However, literature shows that people with SCI can experience personal growth in this disease (5). Kleiber, Hutchinson, and Williams introduced a concept of positive transformation following negative life events. They conceived the potential functions of leisure time in negative life events and discussed leisure time to gain positive

consequences following damage events known as posttraumatic growth (PTG). PTG refers to a positive change that individual experiences as a result of the fight against trauma (6). Previous studies showed that spinal cord injury is effective on life satisfaction (7). Satisfaction with life is defined as a tendency to change a person's life, satisfaction with the past, satisfaction with the perspective of the future, and the life of the individual (8). Neugarten at al. (9) discussed two definitions of life satisfaction. One refers to clear behavior that uses social norm of success or merit, and the second refers to the individual's assessment of his past and future life. SCI causes a long, overwhelming, and debilitating change in an individual's life that certainly changes the individual's satisfaction with life. Therefore, identifying features that increase the trend of positive change, and the fact that people with SCI can experience life satisfaction is an interesting and valuable discussion. As well, in order to improve the quality of life of patients with SCI, health care providers help patients to care

themselves and cope with stressful situations. Due to the importance of PTG and life satisfaction subjects in people with SCI, it is necessary to find these variables. Social support in the process of coping with SCI is significant (10). Several studies show that more social support is related to PTG (11-13) and life satisfaction (14, 15). Social support is defined as the process of interaction in relationships, which improves coping, esteem, respect, love, belonging through actual or perceived exchanges of physical or psychosocial resources, which can reduce the pressure on people (15). Religiosity is referred to different areas of religious activity and belief. This definition is based on religious beliefs formed by religious dependence or divine authority (16). The deepest beliefs and faith of persons strongly affect their health at the physical and mental levels. Researchers noted that faith increases body resistance to psychological problems. Researches in this field showed that religiosity is a positive and significant predictor of mental health (17). Studies showed that religiosity and spirituality play an important role in mental regulation, life satisfaction, and PTG (17-20). Finding the meaning and purpose in life for people with SCI is a challenging topic. Psychologists developed two philosophical traditions to develop ideas about what constitutes health hedonic or subjective view as the first tradition claims that health consists of mental understanding of joy and experience. Hedonic from a psychological point of view, when it feels that the desired effects of satisfying the needs are fulfilled physically, rational, and socially. Eudemonic or psychological view as the second tradition, expresses personal growth and meaningful life. This tradition expresses concepts such as independence, personal growth, the purpose of life, merit, and positive relationship as a significant resource for understanding health (21). From the subjective view, a sense of purpose in life can lead to psychological well-being; therefore, the person achieves health. Some studies indicate that having a meaning and purpose in life is associated with life satisfaction and PTG (22, 23).

2. Objectives

The current study aimed at evaluating the role of social support, life meaningfulness, and centrality of religiosity in PTG and life satisfaction of people with SCI.

3. Methods

3.1. Study Plan

The current correlational non-experimental study employed stepwise regression analysis to determine the most important dependent variable predictors.

3.2. Population and Statistical Sample

The statistical population of the current study included all the people with SCI referred to Welfare Organization of Khorramabad city, Iran, in 2016. In the current study, marriage and gender were not considered for sample selection. However, considering the inclusion and exclusion criteria, a sample of people above 17 years old with SCI for at least two years were selected. Some authors discussed that a significant topic to predictor ratio is 30:1, while others suggest that a ratio of 10:1 is sufficient (24). In the current study all the predictor variables were 9; therefore, minimum 90 ($9 \times 10 = 90$) and maximum 270 ($9 \times 30 = 270$) participants were sufficient to perform regression analysis. In sum, 157 individuals were selected by the convenience sampling method (106 males, 24 females, and 27 subjects did not provided their personal information). The mean age of the study subjects was 33.68 years.

3.3. Instruments

The current study employed four instruments to measure the variables.

3.3.1. Satisfaction with Life Scale

Diener et al. (8), developed this scale. This scale has five questions, which examine life satisfaction from different aspects. The items are scored based on a seven-option Likert scale (from completely agree to the completely disagree); total score ranges 5 to 45. Diener et al. (8), also confirmed the validity and reliability of the scale. In the current study, the validity of the scale was tested using confirmatory factor analysis. Results showed that factorial load for all the items was sufficient (> 0.30). The fitness indices for χ^2/df, GFI (goodness of fit index), AGFI (adjusted goodness of fit index), comparative fit index (CFI), and RMSEA (the root mean square error of approximation) were respectively 0.05, 0.99, 0.99, 0.99, and 0.00. Also, in the current study the Cronbach's alpha coefficient was 0.94.

3.3.2. Meaning in Life Questionnaire, Short-Form (MLQ-SF)

The questionnaire was developed by Steger and Samman in six items and two subscales: search (for example, I am looking for a goal or mission for my life) and presence (for example, my life has a clear sense of purpose). The items are scored from 1 (not at all correct) to 4 (absolutely correct). The MLQ-SF of the National Surveillance Survey was conducted in the United States, which demonstrates the great reliability of the samples (21). In the current study, the validity of the scale was tested using confirmatory factor analysis. Results showed that factorial load for all the items was sufficient (> 0.30). The fitness indices for χ^2/df, GFI, AGFI, and CFI were 3.96, 0.94, 0.83, and 0.96,

respectively. Also in the current study, the Cronbach's alpha coefficient was 0.90.

3.3.4. Posttraumatic Growth Inventory, Short-Form (PTGI-SF)

The PTGI-SF is a 10-item questionnaire that evaluates the degree of positive perceived change after a damage event (for example, I changed my important choices about what's worth in life). The items are scored based on the six-option Likert scale and the total PTGI-SF score ranges 10 to 60. The PTGI-SF has internal reliability ([25]). In the current study, the validity of the scale was tested using confirmatory factor analysis. Results showed that factorial load for all the items was sufficient (> 0.30). The fitness indices for χ^2/df, GFI, AGFI, CFI, and RMSEA were 1.84, 0.93, 0.88, 0.97, and 0.07, respectively. Also in the study, the Cronbach's alpha coefficient was 0.90.

3.3.5. Centrality of Religiosity Scale

This scale measures five dimensions: general practice, private practice, religious experience, ideology, and intellectual dimensions of religiosity. CRS-15 is a 15-item instrument with three items per dimension (see Appendix A). Items are scored based on a five-option Likert scale; higher scores represent a high level of religiosity. The total score is the sum of scores in all dimensions; the total mean score represents the level of religiosity. The reliability value of each dimension ranges 0.80 to 0.93, and for the total CRS-15 ranges 0.92 to 0.96 ([26]). In the current study, the validity of the scale was tested using confirmatory factor analysis. Results showed that factorial load for all the items was sufficient (> 0.30). The fitness indices for χ^2/df, GFI, AGFI, CFI, and RMSEA were 1.75, 0.90, 0.84, 0.96, and 0.07, respectively. Also in the current study, the Cronbach's alpha coefficients for public practice, private practice, religious experience, ideology, intellectual dimensions and general scale were 0.83, 0.86, 0.89, 0.59, 0.83, and 0.92, respectively.

3.3.6. The Multidimensional Scale of Perceived Social Support (MSPSS)

The MSPSS is used to examine significant others (SO) (items 1, 2, 5, and 10), family (FA) (items 3, 4, 8, and 11), and friends (FR) (items 6, 7, 9, and 12) ([27]). The MSPSS is a short and easy questionnaire, which includes 12 items scored based on a seven-option Likert scale from completely disagree (1) to completely agree (7). From the psychometric point of view, MSPSS has good reliability and validity ([28]). In the current study, the validity of the scale was tested using confirmatory factor analysis. Results showed that factorial load for all the items was sufficient (> 0.30). The fitness indices for χ^2/df, GFI, AGFI, CFI, and RMSEA were 1.68, 0.90, 0.86, 0.98, and 0.07, respectively. Also in the current

study, the Cronbach's alpha coefficients for family, friends, and couple support were 0.87, 0.92, and 0.99, respectively.

3.4. Ethical Consideration

The objectives of the current study were explained to the participants. The participants were assured about the confidentiality of their information they are free to attend the meetings. Subsequently, subjects were asked to complete the questionnaires. In the case of obscure questions, additional explanations were provided to individuals. The explanation is presented to avoid any ambiguity.

4. Results

The descriptive results related to the mean, standard deviation (SD), kurtosis, and skewness scores of the subjects for the variables in the current study are given in Table 1. Before analysis of the proposed model, structural equation modeling assumptions were tested. Therefore, in the first step, the normal distribution of data was analyzed using numerical detection methods. Kurtosis and skewness of the variables in Table 1 are all in the range of -2 to 2 that confirms the normality of variables in this research. Also, as tables 2 and 3 show, the Durbin-Watson test (1.85 and 2.02) confirmed the independence of observations.

Results of the application of stepwise regression analysis in Table 2 show that the most important predictors of life satisfaction were respectively friends support ($\beta = 0.21$, P = 0.007), meaningfulness ($\beta = 0.22$, P = 0.003), family support ($\beta = 0.25$, P = 0.001) and religious experience ($\beta = 0.18$, P = 0.014). Also, contents of Table 2 showed that the most important predictors of PTG were respectively family support ($\beta = 0.30$, P = 0.000), religious experience ($\beta = 0.19$, P = 0.002), meaningfulness ($\beta = 0.25$, P = 0.000), public practice ($\beta = 0.25$, P = 0.000), and friends support ($\beta = 0.19$, P = 0.002). The f-value was related to the prediction equation significance and t test results showed the beta coefficients significance for each of the variables. Overall, all predictor variables in regression model 1 explained 38% of life satisfaction variance and all predictor variables in regression model 2 explained 62% of PTG.

5. Discussion

The current study aimed at investigating the role of social support, life meaningfulness, and centrality of religiosity in PTG and life satisfaction in people with SCI. Therefore, 157 subjects with SCI were selected from Welfare Organization of Kharramabad. Results of analysis by stepwise regression method showed that among predictor variables, friends support, meaningfulness, family support, and religious experience were the most important

Table 1. Descriptive Findings of the Research Variables[a]

	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
Couple support	4.00	20.00	10.10	6.61	0.530	-1.41
Friends support	5.00	25.00	15.49	5.98	-0.242	-0.96
Family support	5.00	25.00	19.43	5.57	-0.943	-0.15
Social support	15.00	70.00	45.01	13.63	-0.138	-0.79
Meaningfulness	6.00	24.00	17.66	5.27	-0.598	-0.60
Intellectual	3.00	15.00	9.02	3.65	-0.138	-1.12
Ideology	3.00	15.00	11.95	3.31	-1.040	0.42
Public practice	3.00	15.00	7.80	3.42	0.161	-0.86
Private practice	3.00	15.00	9.54	4.02	-0.296	-1.28
Religious experience	3.00	15.00	11.71	3.62	-1.090	0.19
Religiosity	15.00	75.00	50.02	14.34	-0.473	-0.53
Posttraumatic growth	10.00	45.00	30.90	8.70	-0.300	-0.74
Life satisfaction	4.00	28.00	14.82	6.79	0.148	-0.94

[a] N = 157

Table 2. Results of Variables Regression Model Analysis for Life Satisfaction

Model	Beta	T	Sig.	R	R Square	F	Sig.	The Durbin-Watson Test
1	0.21	2.74	0.007	0.47[a]	0.22	43.16	0.000[b]	
2	0.22	2.99	0.003	0.55[b]	0.30	33.59	0.000[c]	1.85
3	0.25	3.30	0.001	0.59[c]	0.35	27.40	0.000[d]	
4	0.18	2.48	0.014	0.61[d]	0.38	22.78	0.000[e]	

[a] Predictors: (constant), friends support.
[b] Predictors: (constant), friends, meaningfulness.
[c] Predictors: (constant), friends, meaningfulness, family support.
[d] Predictors: (constant), friends, meaningfulness, family, religious experience.
[e] Dependent variable: life satisfaction.

Table 3. Results of Variables Regression Model Analysis for Posttraumatic Growth

Model	Beta	T	Sig.	R	R Square	F	Sig.	The Durbin-Watson Test
1	0.30	5.11	0.000	0.56[a]	0.32	71.89	0.000	
2	0.19	3.16	0.002	0.69[b]	0.48	69.89	0.000	
3	0.25	4.31	0.000	0.73[c]	0.54	59.60	0.000	2.02
4	0.25	4.30	0.000	0.77[d]	0.60	55.80	0.000	
5	0.19	3.09	0.002	0.79[e]	0.62	49.06	0.000	

[a] Predictors: (constant), family support.
[b] Predictors: (constant), family, religious experience.
[c] Predictors: (constant), family, experience, meaningfulness.
[d] Predictors: (constant), family, experience, meaningfulness, public practice.
[e] Predictors: (constant), family, experience, meaningfulness, public, friends support, dependent variable: posttraumatic growth.

ones in predicting life satisfaction, and family support, religious experience, meaningfulness, public practice, and friends support were the most important ones in predicting PTG.

A previous study indicated the role of family support in life satisfaction (29) and PTG (30). The results of the study by McDonough et al. (31) suggested that social support predicted higher levels of PTG and well-being in females with

cancer. Social support from others is important, which has a significant impact on the possibility of PTG. Social interaction with others creates support, a chance to self-assertive, and acceptance in a social network (5). Calhoun and Tedeschi (6) discussed that people are willing to find new value and get in touch with other remarkable people who offer a lot of support during the process of improvement or adaptation.

The common effective factor in predicting life satisfaction and PTG was religious experience as a dimension of centrality of religiosity. The positive effects of religiosity and spirituality in people with disabilities are shown in different studies (17-20, 32-34). For example, Prati and Pietrantoni showed that religious coping was an effective strategy for PTG (32). Babamohamadi et al. (33) also found the facilitating role of spiritual beliefs in coping with a SCI. In another study by Chan and Rhodes, positive relationships were observed between PTG 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" (34). One dimension of religion is that religious people are expected to have a direct contact with the final reality (26), which affects them emotionally. Personal religious system indicated patterns of religious understanding and religious experiences and emotions. In the case of private practice, two forms of excellence of experience are distinct, individual experiences associated with a dialectical spiritual pattern, and experience in a component related to a cooperative company. Religiosity can influence on distress of mental health and physical health (16). Newman (35) explained that religion helps people to cope with life events, feel close to others, intimate with God, and reach self-actualization and transcendence. Spirituality and religion are considered as effective factors to confront life-threatening events (36). Possession of spiritual beliefs was also an important personal facilitator of PTG 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.

One of the common variables to predict life satisfaction and PTG was life meaningfulness. Traumatic experiences make important changes such as evaluating the meaning of life, a different definition of priorities, and improved relationships (37). Life meaningfulness helps individual to find the reason for their life traumatic event. Linley and Joseph found that acceptance and coping, along with a positive interpretation, are related to positive outcomes after trauma (38). One of the most important benefits of meaning is that it is not limited to the current stimulus environment. A meaningful thought makes people think of the past, the future, and even the opportunity that they can deal with events over time. The purpose is that people can take the meaning of current events from the future. To find meaning through life and the current unpleasant conditions, it should be tried to achieve a goal in the future; hence, the outcomes are favorable in the future. Consequently, meaningfulness may often be the perception of one's life beyond here and now, combining the future and the past. People think that commuting, talking on the phone, cooking, cleaning, home maintenance, meditation, email, social networking, prayer, listening and reading for joy make their lives more meaningful (39). The issue of PTG in early human history is the topic of all trainings that there is a relationship between the experience of suffering and the question of the meaning of life. For example, the assumption of Buddhism is that all existence is suffering and shows concrete and final ways to escape from these endless lines of suffering that every human experience (40). From the point of view of Islam, this world is a place that we live in for a short while. Human beings attend the Divine Court after death. Acceptance of death and afterlife beliefs can reduce anxiety and stress, it makes a person wait patiently for the consequences of his life and as a result, people feel calm and confident and deal with the problems of this world with patience .

5.1. Conclusion

The current study emphasized the importance of social support, especially family and friends support, meaningfulness, and religious experience to improve life satisfaction and PTG in people with SCI.

5.2. Strengths and Limitations

The current study faces limitations in generalizing its results. Since the correlational design was employed in the current study, proving causal relationships among variables should be done cautiously. The subjects of the current study were the patients with SCI in Khorramabad; therefore, one should be cautious about generalizing the results to other populations. Another limitation of the study relates to the fact that using a single method for a research can cause bias. Due to the application of self-reporting questionnaires, respondents' dishonesty, their carelessness, and slackness in responding to the questionnaires reduce the constructive validity of the study. The current study, for the first time, examined the centrality of religiosity and its dimensions in patients with SCI. Also, the current study clarified which dimensions of social support and centrality of religiosity were more important to determine PTG and life satisfaction, thus, giving a more accurate insight to patients, families, and their advisers.

5.3. Practical Implications

The findings of the current study showed that 38% of life satisfaction variance and 62% of PTG variance were affected by social support, life meaningfulness, and centrality of religiosity. The current study findings have implications at the applied level. Therapeutic teams, counselors, and families that deal with SCIs should not ignore the important role of family and friends to recover their patients, help to treat them by therapies with a logo therapy approach, and encourage them to promote religious beliefs and experiences. Therefore, individuals with SCI should repeatedly interact with therapists with logo therapy approach and religious clerics that affect the positive trend of improvement, adaptability, and life satisfaction for them. It has long-term implications for mental and social functioning of SCIs and creates better situations for their families.

Acknowledgments

Footnote

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