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# Perceived Stress and Quality of Life in Spinal Cord Injured Individuals

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**Abstract:** Background: Spinal cord injury (SCI) involves severe physical, social, but also psychological consequences. The risk for major depression, anxiety disorder, post-traumatic stress disorder, substance abuse and suicide is elevated for people with SCI compared with the general population. The objective of this study was to evaluate the quality of life and stress variation among spinal cord injured Individuals. 100 subjects in the age group OF 30-60 YEARS, including both males and females. The questionnaire was used by asking questions to the subjects regarding their stress and limitation in their activities of daily living. Some were filled by telephonic conversations and some by person. The present study was to evaluate the perceived stress and quality of life in spinal cord injured patients using “The Perceived Stress Scale and short form - 36 Questionnaire”. The questionnaire comprised of Health Screening Questions and questions that related with their life styles and emotional and physical limitations in daily activities after spinal cord injury. In Conclusion, spinal cord injury affects many facets of individuals life. Often spinal cord injured patients are of often younger age group. The physical, personal, financial and social impact of spinal cord injury is such that most patients are lost in follow up to life threatening complication associated with Spinal cord Injury.

**Keywords:** SCI, Pain, Stress, QOL

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## 1. Introduction

SPINAL CORD INJURY (SCI) is the injury to the spinal cord from the foramen magnum to the caudaequina which occurs as a result of compulsion, incision, or contusion. As a result of the injury, the functions performed by spinal cord are interrupted at the distal level of the injury. SCI causes serious disability among patients [1]

Spinal cord injury (SCI) can be a sudden and devastating event that can changes the person’s life. It often leads to permanent neurological injury and range of associated consequences such as paralysis, loss of sensation, change to bowel, bladder and sexual function, and loss of functional abilities such as walking [2].

Injury is usually caused by flexion, compression, hyperextension or flexion-rotation injury

Mechanisms. This is called “primary damage” that occurs as a result of these mechanisms. The responses of the body in order to overcome the primary damage, such hemorrhage, inflammation and the release of various chemicals, are

described as secondary damage [3].

Spinal cord injuries are classified by the American Spinal Injury Association (ASIA) by considering the motor and sensory functions [4]. There is a strong relationship between functional status and whether the injury is complete or not complete, as well as level of the injury. A complete injury means full loss of motor and sensory functions at the distal level of injury [5]. In complete injury defines partial preserving of sensory and motor functions below the neurological level and in the lower sacral segments.

The most common causes of SCI in the world are traffic accidents, gunshot injuries, knife injuries, falls and sports injuries. There is a strong relationship between functional status and whether the injury is complete or not complete, as well as the level of the injury. The results of SCI bring not only damage to independence and physical function, but also include many complications from the injury. Neurogenic bladder and bowel, urinary tract infections, pressure ulcers, orthostatic hypotension, fractures, deep vein thrombosis, spasticity, autonomic dysreflexia, pulmonary and

cardiovascular problems, and depressive disorders are frequent complications after SCI [6].

Functional outcome differs according to the location of the lesion. A description of outcome thus needs a classification of spinal cord injury according to the level of the lesion:

- (1) ultra-high tetraplegia (above C4)
- (2) high tetraplegia (C4-C5)
- (3) low tetraplegia (C6-C8)
- (4) high paraplegia (above D4)
- (5) low paraplegia (below D4)

The outcome as well as the therapeutic aims largely depend on this level of lesion [7]. The improvement of function leads to a reduction of dependency and often causes a better social integration as well.

An interdisciplinary approach is essential in rehabilitation in SCI, as in the other types of rehabilitation. The team is led by a physiatrist and consists of the patients' family, physiotherapist, occupational therapist, dietician, psychologist, speech therapist, social worker and other consultant specialists as necessary. The expression "Quality of Life" (QL) was first used by the president of the United States Lyndon Johnsons, in 1964, when he stated that "these goals cannot be measured by the size of our balances. They can only be measured in the quality of the lives that our people lead [8].

ACCORDING TO THE WHO FACT SHEET:--

Quality of Life as a 'individual' perception of their position in the life in the context of the culture and value system in which they live and relation to their goals, expectation, standards, and concerns"[9].

Quality of life is held to be the ultimate objective of rehabilitation and a sustainable body of research has sought to evaluate the QOL. Spinal cord injury frequently leads to the alteration in the ambulatory, cardiovascular, hand, and many other bodily function that affect the QOL.

Most early measures of health status, as well as some contemporary quality of life instruments, were designed to measure objectively the adequacy of individuals' functioning across life's various domains— physical, occupational, and interpersonal.

Quality of life represents the widest range of human experience and is made up of all the things individuals value. [13, 14]. Dependent upon an individual's subjective evaluation of what is of value, material well being, functional capacity, relationships, health, respects from others, family and work to name but a few are possible areas.

Occupational therapy is an important part of the rehabilitation process. In developed countries, occupational therapy is carried out by the occupational therapist in the rehabilitation team. Occupational therapists assess the patient's limitations and plan the occupational activities. Occupational therapy is planned and implemented depending on the social and cultural characteristics of individuals, level of education, personality traits, interests, values, attitudes and behaviors before and after the injury. Pictures, music, crafts, ceramic work and a variety of activities (for example, sports)

and entertainment are implemented and planned to focus on the purpose in the occupational treatment.

Such health issues include the propensity to chronic pain and stress and reduction in perceived quality of life. Three broad approaches to the operationalization of QUALITY OF life can be found in the literature:

- (1) by equating QoL with health,
- (2) by equating it with subjective well-being (SWB) and
- (3) by treating QoL as a super ordinate construct.

The ways in which the concept of stress has been assessed in research can be classified broadly into three perspectives:

- (1) environmental, focusing on stressors or life events;
- (2) Psychological, assessing subjective stress appraisal and affective reactions; and
- (3) Biological, assessing the activation of the physiological systems involved in the stress response (Cohen & Kessler, 1997; Kopp et al., 2010). Another problem a primary caregiver has to deal with is the negative effects of this catastrophic event on the psychological health of the patient such as depression and attempted suicide.

Moods and emotions are considered more variable over short periods than life satisfaction. Mental health, in this manuscript used as a general term covering mood, emotions and distress, and life satisfaction can be considered as two different, but related, Subjective well being outcomes of SCI. Elsewhere we have shown that mental health influences well-being, but not the reverse.

Spinal cord injury (SCI) involves severe physical, social, but also psychological consequences. The risk for major depression, anxiety disorder, post-traumatic stress disorder, substance abuse and suicide is elevated for people with SCI compared with the general population. 2–7 Activating their inherent psychological resources may protect people with SCI from negative secondary consequences of the injury.

A more precise measure of personal stress can be determined by using a variety of instruments that have been designed to help measure individual stress levels. The first of these is called the Perceived Stress Scale. The Perceived Stress Scale (PSS) is a classic stress assessment instrument. The tool, while originally developed in 1983, remains a popular choice for helping us understand how different Situations affect our feelings and our perceived stress.

## 2. Materials and Methods

Study Design: Survey Study

Total 100 subjects include in the study age group of 30-60 years both males and females. The informed consent was filled by the subjects. Then, the questionnaire was used by asking questions to the subjects regarding their pain. Some were filled by telephonic conversations and some by person. Then, the questionnaire was used by asking questions to the subjects regarding their stress and limitation in their activities of daily living. The whole procedure takes 5 to 6 minutes in filling the complete questionnaire.

### 3. Result

There were 100 subjects included in the study. Perceived Stress among the spinal cord injured patients. 100 out of 69 patients having moderate stress, 19 patients having mild stress and 12 patients having severely stress after injury.

Represents the mean variation in the limitation of activity and mental health among the spinal cord injured patients 45.3% have difficulty in physical health and 45.3% also having alteration in emotions and energy. And least affected area is emotional health problem (15.6%).

#### PERCEIVED STRESS SCALE

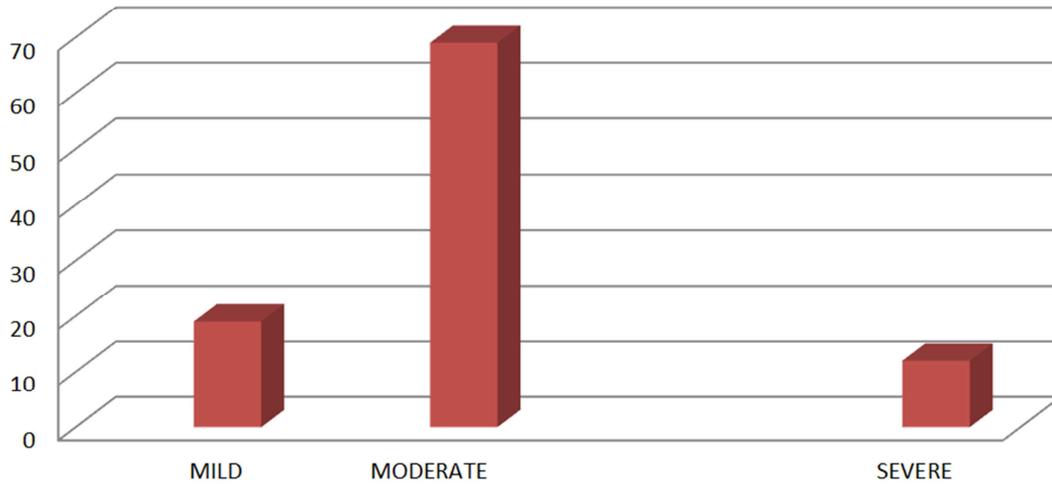


Figure 1. This figure indicates types of Stress.

Table 1. Perceived Stress Scale.

PERCEIVED. STRESS. SCALE		
MILD	MODERATE	SEVERE
19	69	12

Table 2. SF -36(General, Physical, Emotional, Social Health).

SF-36	
GENERAL HEALTH	18.1
PHYSICAL, HEALTH	45.3
EMOTIONAL PROBLEM	15.6
LIMITATIONOFACTIVITY	30.2
SOCIAL ACTIVITY	18.2
EMOTIONALPROBLEM	45.3

### 4. Discussion

The present study was evaluate the perceived stress and quality of life in spinal cord injured patients using “The Perceived Stress Scale and short form - 36 Questionnaire”. The questionnaire comprised of Health Screening Questions and questions that relate with their life styles and emotional and physical limitations in daily activities after spinal cord injury. A total of 100 subjects participated in the study and they according to their ability and physical limitation in normal activity of daily living filled the questionnaire. In favor we have Ware JE, concluded that the SF- 36 questionnaire was divided unto 8 subscales and domain that namely Physical health, mental health etc. This tool assesses both positive health aspects (well-being) as well as negative aspects (diseases). Westgren and Levi suggested that individuals with SCI often developed adaptive strategies over time and allow them to cope up with complications and deterioration in functions.. A majority of people with SCI are young adults and after this catastrophic event, they and their families have to live with disability and handicap for 3, 4 or even 5 decades during that time they will have to face immobility, physical dependence and vocational employment and financial problems. They will also encounter many barriers including the architectural and attitudinal. Ester et al reported that general health and mental problems are more prominent in female spouses of patients with SCI compared to the healthy control. Indications from unpublished work in the United States suggest that the SF-36 questionnaire could be used to study a wide range of serious conditions.

#### SHORT FORM-36

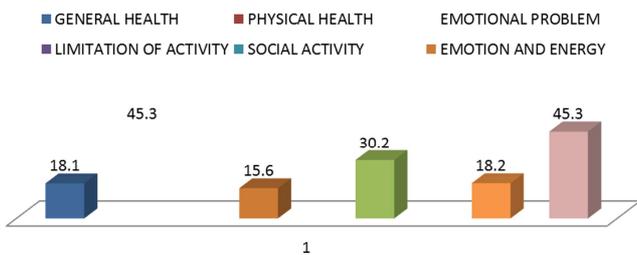


Figure 2. Represents the mean variation in the limitation of activity and mental health among the spinal cord injured patients 45.3% have difficulty in physical health and 45.3% also having alteration in emotions and energy. And least affected is 15.6% in emotional health problem.

## 5. Conclusion

Despite the Small sample Size this research provides valuable insight into quality of life for individuals following SCI. More importantly it has focused overall benefits of having specialized Spinal injury rehabilitation, in terms of health physical function and psychosocial integration. However, it is so important to remember that there are other confounding variables other than receiving rehabilitation such as self esteem, low social support that can affect individual's well being and life satisfaction.

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