Stress and coping abilities of caregivers of spinal cord injury patient

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Abstract- Spinal cord injury (SCI) is a serious medical condition that causes functional, psychological and socioeconomic disorder. A descriptive research design was used in the study. The data was collected from 60 caregivers. The data was collected using structured questionnaire. The overall mean percentage of the stress was 69.9. Maximum 29(48.3%) samples were having Moderate Stress level, 25(41.7%) samples were having Severe Stress level, and 6(10%) samples were having Mild Stress level to give care for spinal cord injury patient in selected hospital at Bangalore. The overall mean percentage of the coping was 59.7. Maximum 33(55%) samples were having Moderate Coping Level, 16(26.7%) samples were having Inadequate Coping Level, 11(18.3%) samples were having adequate Coping Level to give care for spinal cord injury patient in selected hospital at Bangalore. The study concluded that the obtained Karl Pearson's Correlations value was r = "0.092". As the value is less than the p value of 0.05, it shows there is significant positive relationship between stress and coping abilities of the samples who is taking care of spinal cord injury patient in selected hospital at Bangalore.

Keywords: Stress, coping abilities, spinal cord

INTRODUCTION

"An ounce of cancer prevention is worth a ton of cancer cure" -Robert. A.

The spinal cord is a long, thin, tubular bundle of nervous tissue and support cells that extends from the medulla oblongata in the brainstem to the lumbar region of the vertebral column. The brain and spinal cord together make up the central nervous system. In humans, the spinal cord begins at the occipital bone where it passes through the foramen magnum and meets and enters the spinal canal at the beginning of the cervical vertebrae. The spinal cord extends down to between the first and second lumbar vertebrae where it ends. The enclosing bony vertebral column protects the relatively shorter spinal cord. It is around 45 cm (18 in) in men and around 43 cm (17 in) long in women. Also, the spinal cord has a varying width, ranging from 13 mm (1⁄2 in) thick in the cervical and lumbar regions to 6.4 mm (1⁄4 in) thick in the thoracic area.(1)

The spinal cord functions primarily in the transmission of nerve signals from the motor cortex to the body, and from the afferent fibers of the sensory neurons to the sensory cortex. It is also a center for coordinating many reflexes and contains reflex arcs that can independently control reflexes and central pattern generators. The spinal cord is made from part of the neural tube during development. There are four stages of the spinal cord that arises from the neural tube: The neural plate, neural fold, neural tube, and the spinal cord. Neural differentiation occurs within the spinal cord portion of the tube. As the neural tube begins to develop, the notochord begins to secrete a factor known as Sonic hedgehog or SHH. As a result, the floor plate then also begins to secrete SHH, and this will induce the basal plate to develop motor neurons. During the maturation of the neural tube, its lateral walls thicken and form a longtitudinal groove called the sulcus limitans. This extends the length of the spinal cord into dorsal and ventral portions as well.(2)

The overlying ectoderm secretes bone morphogenetic protein (BMP). This induces the roof plate to begin to secrete BMP, which will induce the alar plate to develop sensory neurons. Opposing gradients of such morphogens as BMP and SHH form different domains of dividing cells along the dorsal ventral axis. Dorsal root ganglion neurons differentiate from neural crest progenitors. As the dorsal and ventral column cells proliferate, the lumen of the neural tube narrows to form the small central canal of the spinal cord.(3)

Spinal cord injuries are rapidly becoming a social problem. Unlike disability caused by other injuries, spinal cord injury leads to a loss of intellectual function, physical immobility and the victim becomes a burden on society and family.

The impact of spinal cord injury not only affects the victim but also his family, his community and the society at large. It is a crisis situation not only for the otherwise healthy individual, it also has a devastating effect on his family. The family is the worst affected in a fraction of a second. A person's whole life comes to a standstill. The fabric of life turns gray. Such an event has a shattering effect on the family in terms of present and the future. It robs the very essence of living. The family is caught in a web of numbness, shock, indefiniteness and fear. The unsolvable question in their minds is whether the victim would survive or succumb. When a life is saved the new question is whether it is a life worth living. The stress, therefore, may fall more on the family than on the patient.(4)

Progressing from the shock of the injury to the acceptance of disability, throughout, the family members experience psychological ups and downs. The family is exposed to a lot of suffering and hardship. During the acute stage the family may not have concrete answers to basic questions regarding the future, and during this period the family network would also be in a state of crisis, more so if the victim happens to be the breadwinner of the family. A shift occurs in the family network and new roles would have to be assumed by the available family members with uncertainty of the duration of these new roles. (5)

In the Indian society, family occupies the centre stage and it's role in providing support to an individual during a crisis can hardly be overlooked. Family is defined as a unique social group involving 'generational' ties, permanancy, a concern for the total person, heightened emotionality caregiving, qualitative goals, an altruistic orientation to members and a primarily nuturing form of governance. The onset of a serious illness in the family adds a set of demands, strains and hardships that interact with the normative changes experienced by the families. The additive stressors of illness may increase the family's vulnerability to the development of secondary problems in family relationships or family adaptation as well as leading to the development of health problems in the individual family members. Caregivers, distress has been defined in numerous ways by caregivers themselves including feeling of 'burn out', depression, isolation, sadness, fear, anxiety, grief and loneliness. (6)

MATERIAL AND METHODS

Research Approach

A quantitative research approach was adopted for this study.

Research Design

Descriptive research Design

Setting

The current research was done in Kanva Hospital, Bangalore and RMV Hospital, Bangalore.

Population

In the present study, the population consists of all the caregivers of spinal cord injury patient at Kanva Hsopital, Bangalore.

Samples

The sample of present study consist of caregivers of spinal cord injury patient at Kanva Hospital, Bangalore who comply with the requirements.

Sampling Technique

In the present study, all the samples who fulfill the inclusion criteria are recruited using the non-probability convenient sampling technique.

Sample Size

The calculated sample size was 60 caregivers of spinal cord injury patient in the study.

Development and description of Tool

Section A: Socio-demographical profile of caregivers

Section B: The structured stress assessment scale

It consists of thirty items which includes financial, social, family, psychological, and physical stress.

There are 2 options for each question.

Scoring

1. There are positive and negative statements. Each positive statement has one marks and negative statements has zero marks.
2. The maximum mark is thirty and the minimum mark is zero.

The scores were distributed as follows.

1. Inadequate = Scores ≤50%
2. Moderate = Scores 51% to 75%
3. Adequate = Scores >75%.

Section – C: The 'Coping assessment scale

It consists of twenty items.

There are 2 options for each item.

Scoring

1. There are positive and negative statements. Each positive statement has one marks and negative statements has zero marks.
2. The maximum mark is thirty and the minimum mark is zero.

The scores were distributed as follows.

4. Inadequate = Scores ≤50%
5. Moderate = Scores 51% to 75%
6. Adequate = Scores >75%

RESULT

Maximum 16(26.7%) samples age in years was 25 to 30, Maximum 30(50%) samples gender was male, Maximum 22(36.7%) samples educational status was basic education, Maximum 30(50%) samples occupational status was no job, Maximum 31(51.7%) samples family type was nuclear family, Maximum 42(70%) samples marital status was married, Maximum 28(46.7%) samples duration of contact with the patient was 1 year to 5 years, Maximum 33(55%) samples relationship with the patient was spouse, Maximum 28(46.7%) samples monthly income was <10000.

The maximum 72.8 mean percentage was found in 'Psychological' with mean 4.37±1.551, 72. mean percentage was found in 'Physical' with mean 4.32±1.6, 69.2 mean percentage was found in 'Financial' with mean 4.15±1.645, 69.2 mean percentage was found in 'Social' with mean 4.15±1.603, 66.3 mean percentage was found in 'Family' with mean 3.98±1.589. The overall mean percentage of the stress was 69.9. Maximum 29(48.3%) samples were having Moderate Stress level, 25(41.7%) samples were having Severe Stress level, and 6(10%) samples were having Mild Stress level to give care for spinal cord injury patient in selected hospital at Bangalore.

The overall mean percentage of the coping was 59.7. Maximum 33(55.%) samples were having Moderate Coping Level, 16(26.7%) samples were having Inadequate Coping Level, 11(18.3%) samples were having adequate Coping Level to give care for spinal cord injury patient in selected hospital at Bangalore.

Relationship between stress and coping abilities of caregivers

n=60

Pail level assessment	Mean	Std. Deviation	Pearson Correlation
Stress level	20.97	6.608	0.092**
Coping level	11.93	4.811	

**. Correlation is significant at the 0.05 level (2-tailed).

The obtained Karl Pearson's Correlations value was r = "0.092". As the value is less than the p value of 0.05, it shows there is significant positive relationship between stress and coping abilities of the samples who is taking care of spinal cord injury patient in selected hospital at Bangalore.

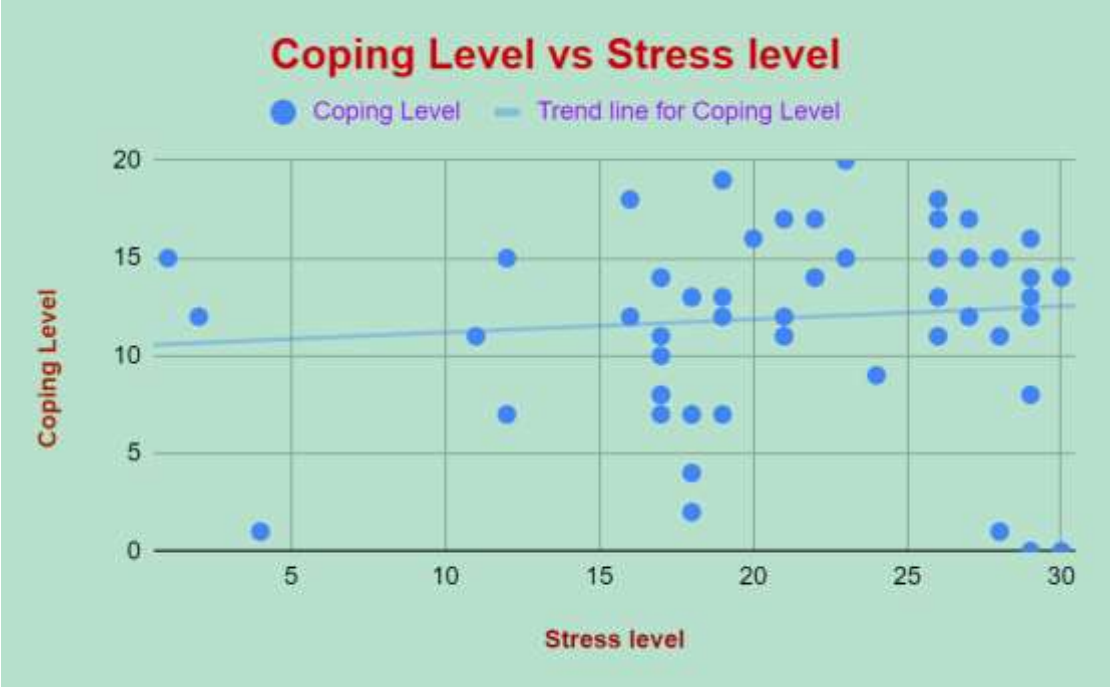

Figure 12: Scattered diagram shows correlation between stress and coping

DISCUSSION

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The related study was found and it says that the effect of spinal cord injury on Canadians and their families. She stated that more than 1100 new people live with spinal cord injury each year. 80% of these people are between ages 15-34 years and the family caregivers experience a loss of productivity and depletion of personal and family resources. (7)

Another related study was conducted a longitudinal and cross-sectional analysis of wellbeing in persons with spinal cord injury and their caregivers. This was to examine the association between physical and psychosocial characteristics of the person with spinal cord injury and feeling-of-burden variable in the caregiver in 100 samples. The analysis of data revealed that caregivers were experiencing increasing negative affect secondary to caregiving. (8)

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