CHAPTER 5

5.1 SUMMARY

The research approach of the study was correlational survey method to assess the effectiveness of rehabilitation therapy of the traumatic paraplegic patients received treatment from Government Spine Institute, Ahmedabad, Gujarat.

The study aimed at accomplishing the following objectives:

- To assess nursing care received by the traumatic paraplegic patients.
- To compare Barthel Index Score and Nursing care received by the traumatic paraplegic patients.
- To assess Effectiveness of Physical Rehabilitation Therapy of the traumatic paraplegic patients.
- To assess Effectiveness of Social Rehabilitation Therapy of the traumatic paraplegic patients.
- To assess Effectiveness of Psychological Rehabilitation Therapy of the traumatic paraplegic patients.
- To assess Effectiveness of Vocational and Occupational Rehabilitation Therapy of the traumatic paraplegic patients.
- To assess Effectiveness of Sexual Rehabilitation Therapy of the traumatic paraplegic patients.
- To find out association between Barthel Index Score and Score of Effectiveness of Social Rehabilitation of the traumatic paraplegic patient.
- To find out association between Barthel Index Score and Score of Effectiveness of Psychological Rehabilitation of the traumatic paraplegic patient.
- To find out association between Barthel Index Score and Score of Effectiveness of Vocational And Occupational Rehabilitation of the traumatic paraplegic patient.
- To find out association between Barthel Index Score and Score of Effectiveness of Sexual Rehabilitation of the traumatic paraplegic patient.
Correlational survey was used for the study. Sample size was 200 and sample technique was consecutive sampling. Semi structured tool to assess effectiveness of rehabilitation therapy was prepared. The instrument was divided in 7 parts in terms of Identification Data, Information Related to injury, Physical rehabilitation, Psychological rehabilitation, Vocational and Occupational rehabilitation, and Sexual rehabilitation. Descriptive and inferential statistics was used for the data analysis.

5.2 DISCUSSION

Comparison of nursing care services and Barthel Index Score.

Spearman’s correlation coefficient ($r_s$) of Nursing care received by the traumatic paraplegic patients was -0.254 and there was negative relationship and test was significant at the 0.01 level (1-tailed).

Here negative relationship indicated that patient with low Barthel Index Score, gave more scores for nursing care services received by them. Paraplegic patients with low Bathel Index Score are more dependent and required more Nursing care.

Physical Rehabilitation of traumatic paraplegic patients.

All the patients (200) were satisfied with nursing care. 200(100%) samples got physiotherapy regularly whereas 193 (96.5%) samples got Occupational therapy regularly during their hospital stay. 154(77%) samples underwent spinal surgery.

Physical rehabilitation was measured by Barthel Index Score. Study revealed that the Effectiveness of Physical Rehabilitation Therapy score (79.50± 16.89) was higher than an ideal Effectiveness of Physical Rehabilitation Therapy of 70. Effectiveness of Physical Rehabilitation Therapy score was statistically significantly higher by 9.5 (95% CI, 11.85 to 7.15) than an ideal Effectiveness of Physical Rehabilitation Therapy score of 70.0, $t$(199) = 7.956, $p \leq 0.001$.

Findings of the present study were supported by the study conducted on Mass scale dorso lumber injuries managed for early rehabilitation, by the Dr. M.M.Prabhakar. study findings indicated that 53% patients had a functionally useful motor power according to the Frankle’s classification. There were no neurological deterioration or mechanical failure in the conservatively treated group.
Social Rehabilitation of traumatic paraplegic patients.

Social rehabilitation therapy

Majority of the patients 179(89.5%) had attended family counseling session during hospital stay. Contrast to this, there was very less visits, 14( 7%) of hospital team at patient’s home after discharge from hospital. 59 (29.5%) got recreation therapy during hospital stay.

Effectiveness of Social rehabilitation therapy

Majority of the subjects, 93% were getting involved in decision making and family member took care of subject, 83% subjects got respect from the family and neighbors, 80.5% subject’s family member behaved politely and calmly,77.5% got respects from relatives, 49% felt no change in his importance after injury, 36.5% felt sense of belongingness among family members, 27% felt no changes in their status after injury, 24.5% felt no changes in his importance after injury, 19.5% had quarrel with family members after injury.

Spearman's correlation coefficient ($r_s$) of Social Rehabilitation Therapy received by the patient and Effectiveness of Social Rehabilitation Therapy was 0.314, and that was statistically significant at the 0.01 level ($p \leq 0.01$). There was positive correlation between Social Rehabilitation Therapy received by the patient and Effectiveness of Social Rehabilitation Therapy. Contrast to this Effectiveness of Social Rehabilitation Therapy score was statistically significantly lower by 0.825 (95% CI, -0.60 to -1.05) than an ideal Effectiveness of Social Rehabilitation Therapy score of 7, $t(199) = 7.239$, $p \leq 0.001$. This indicated Social rehabilitation of population was not significant at 0.01 level. Finding indicated that social rehabilitation therapy was effective as there was positive correlation between the therapy and the effectiveness score.

A Berghammer, M Gram and H-H Schmitt conducted study on Investigation of the social status of paraplegic individuals after medical rehabilitation. Sample size was 2000. The finding indicated that household caretaking support offered by family was in 73% of cases while 5% permanently live in nursing home. In the present study also found good family support in 93% of cases.
Psychological rehabilitation therapy of traumatic paraplegic patients.

Majority of the patients, 179 (89.5%) reported that hospital staff behaved politely and positively during hospital stay. 141(70.5%) attended counseling session for mental health. Whereas, 59(29.5%) got recreation therapy during hospital stay. It indicated that majority of the patients were receiving good psychological therapy during hospital stay.

Effectiveness of Psychological rehabilitation therapy

Findings indicated that 68.5% had no fear without reason, 60.55% got enough sleep, 56% felt stressed, 51.5% had desire to live life, 49.5% had no negative thoughts, 46.5% had no suicidal thoughts, 40% were satisfied with the life and 28.5% had no fear without any reason and thought positive for the present life.

Spearman's correlation coefficient (r) of Psychological Rehabilitation Therapy received by the patient and Effectiveness of Psychological Rehabilitation Therapy was 0.379, and that was statistically significant at the 0.01 level (p ≤.001). There was positive correlation between Psychological Rehabilitation Therapy received by the patient and Effectiveness of Psychological Rehabilitation Therapy. Whereas Effectiveness of Psychological Rehabilitation Therapy score was statistically significantly lower by 18.992 (95% CI, -1.80 to -2.21) than an ideal Effectiveness of Psychological Rehabilitation Therapy score of 6.3, t(199) = 18.992, p ≤.001. This indicated Psychological rehabilitation of population was not significant at 0.01 level.

FK Judd MD BS DPM Frazcp, et al conducted study on suicide following acute traumatic Spinal Cord Injury. Findings indicated that 50% of SCI patients described suicidal thoughts. They found development of depression, the wish to die, non-compliance with treatment, poor motivation with rehabilitation and various forms of self-destruction behavior including suicide in SCI patients. In present study suicidal idea was found in 53.5% samples and psychological rehabilitation was not effective statistically at 0.01 level.

Vocational and Occupational rehabilitation therapy.

The study revealed that majority of the patients, 166 (83%) got motivation for vocational training. 152(76%) got financial help for vocation and 145 (72.5%) got vocational training. In indicates that paraplegic patients got excellent vocational and occupational rehabilitation therapy.
Effectiveness of Vocational and Occupational rehabilitation therapy

The research study indicated that 38.5% subjects were able to work properly, 31.5% had interest in the work, 22.5% spent more than 4 hours per day for the occupational work, 22% were satisfied with the work, and only 8.5% subject’s income was satisfied for the livelihood.

Spearman’s correlation coefficient (r) of Vocational and Occupational Rehabilitation Therapy received by the patient and Effectiveness of Vocational and Occupational Rehabilitation Therapy score was 0.381, and that was statistically significant at the 0.01 level (p ≤ 0.001). There was positive correlation between Vocational and Occupational Rehabilitation Therapy received by the patient and Effectiveness of Vocational and Occupational Rehabilitation Therapy. Contrast to this, Effectiveness of Vocational and Occupational Rehabilitation Therapy score was significantly lower than the population ideal Effectiveness of Vocational and Occupational Rehabilitation Therapy score, t(199) 21.128, p ≤ 0.001. Effectiveness of Vocational and Occupational Rehabilitation Therapy score was statistically significantly lower by 21.128 (95% CI, -2.060 to -2.48) than an ideal Effectiveness of Vocational and Occupational Rehabilitation Therapy score of 6.3, t(199) = 21.128, p ≤ 0.001. This indicated Vocational and Occupational rehabilitation of population was not significant at 0.01 level.

Research findings are supported with the study conducted by M Tarico MD, C Colombo MD and team. They conducted study on social and vocational outcome of spinal cord injuries. The findings suggested that negative occupational outcome emerged. 68% of samples were unemployed.

Sexual rehabilitation therapy.

The study revealed that 22(11%) samples got sexual counseling, 13 (6.5%) were asked for sexual problems and 6(3%) got guidance for alternative sexual methods. It indicates that sexual rehabilitation therapy is neglected aspects of the rehabilitation of the traumatic paraplegic patients.
Effectiveness of Sexual rehabilitation therapy

The study indicated that that 28% subjects had support from the partner, 22% had sexual desire, 20.5% had normal erection, 11% were satisfied sexually, 2% had child after injury.

Spearman's correlation coefficient ($r_s$) of Sexual Rehabilitation Therapy received by the Male patient and Effectiveness of Sexual Rehabilitation Therapy score was, 0.006, and that was statistically significant at the 0.01 level ($p = .47$). There was weak positive correlation between Sexual Rehabilitation Therapy received by the Male patient and Effectiveness of Sexual Rehabilitation Therapy. Whereas Effectiveness of Sexual Rehabilitation Therapy score was significantly lower than the population ideal Effectiveness Sexual Rehabilitation Therapy score, $t(145) = 17.769, p \leq .001$. Effectiveness of Sexual Rehabilitation Therapy score was statistically significantly lower by 17.769 (95% CI, -2.09 to -2.61) than an ideal Effectiveness of Sexual Rehabilitation Therapy score of 3.5, $t(199) = 17.769, p \leq .001$. This indicated Sexual rehabilitation of population was not significant at 0.01 level.

Spearman's correlation coefficient ($r_s$) of Sexual Rehabilitation Therapy received by the female patient and Effectiveness of Sexual Rehabilitation Therapy score was, 0.009, and that was statistically significant at the 0.01 level ($p = .24$). There was weak positive correlation between Sexual Rehabilitation Therapy received by the Female patients and Effectiveness of Sexual Rehabilitation Therapy. Whereas Effectiveness of Sexual Rehabilitation Therapy score was significantly lower than the population ideal Effectiveness Sexual Rehabilitation Therapy score, $t(145) = 10.775, p \leq .001$. Effectiveness of Sexual Rehabilitation Therapy score was statistically significantly lower by 10.775 (95% CI, -1.52 to -2.22) than an ideal Effectiveness of Sexual Rehabilitation Therapy score of 2.8, $t(199) = 10.775, p = \leq .001$.

The findings of present study is supported by the research conducted by R.A.Sutton, M.Bentely et al. they have conducted study on review of the social situation of paraplegic rehabilitation in the Hexhan Regional Spinal Injury Unit. Finding revealed that 72% samples had sexual relationship before injury. 89% of them stated that this had changed or ceased since injury. Only 18% samples got sexual counseling. 27% of
samples stated that they would welcome a more readily available sexual counseling service.

**Association between Physical rehabilitation with Social, Psychological, Vocational and Occupational and Sexual Rehabilitation.**

Spearman's correlation coefficient ($r_s$) of Barthel Index Score and Effectiveness of Social Rehabilitation Therapy score was 0.202, and that was statistically significant at the 0.01 level ($p = .002$). There was positive correlation between Barthel Index Score and Effectiveness of Social Rehabilitation Therapy.

Spearman's correlation coefficient ($r_s$) of Barthel Index Score and Effectiveness of Psychological Rehabilitation Therapy score was 0.447, and that was statistically significant at the 0.01 level ($p = .002$). There was positive correlation between Barthel Index Score and Effectiveness of Psychological Rehabilitation Therapy score.

Spearman's correlation coefficient ($r_s$) of Barthel Index Score and Effectiveness of Vocational and Occupational Rehabilitation Therapy score was 0.447, and that Vocational and Occupational statistically significant at the 0.01 level ($p \leq .001$). There was positive correlation between Barthel Index Score and Effectiveness of Vocational and Occupational Rehabilitation Therapy.

Spearman's correlation coefficient ($r_s$) of Barthel Index Score and Effectiveness of Sexual Rehabilitation Therapy score was 0.400, and that it is statistically significant at the 0.01 level ($p \leq .001$). There was positive correlation between Barthel Index Score and Effectiveness of Sexual Rehabilitation Therapy of Male.

Spearman's correlation coefficient ($r_s$) of Barthel Index Score and Effectiveness of Sexual Rehabilitation Therapy score was 0.202, and that was statistically significant at the 0.01 level ($p = .002$). There was positive correlation between Barthel Index Score and Effectiveness of Sexual Rehabilitation Therapy of Female.
5.3 MAJOR FINDINGS.

Section I – Identification data
- Majority of the samples 47(23.5%) belonged to age group of 26 to 30 and 31-35 age group
- 145(72.5%) were females and 55(27.5%) samples were male.
- Majority of the samples 108 (54%) were laborers before injury whereas 75(37.5%) samples were laborers after injury
- Majority of the samples 134 (67%) were illiterate whereas were literate.
- Majority of the samples 119(59.5%) were living in joint family were.

Section II- Information about injury
- Majority of the sample 182(91%) had 1 to 3 years of follow up period.
- Maximum samples 113(56.5%) had traumatic paraplegia because of getting fall down from height.
- Maximum samples 124(62%) had dorsolumber injury.
- Maximum samples 134(67%) were transferred 2 times.
- Majority of the samples 154(77%) underwent surgical procedure.
- In majority of the sample 169(84.5%) rehabilitation started within one month.
- Majority of the samples 149(74.5%) were wheel chair bound.

Section III- Physical rehabilitation
- Effectiveness of Physical Rehabilitation Therapy score was statistically significantly higher by 9.5 (95% CI, 11.85 to 7.15) than an ideal Effectiveness of Physical Rehabilitation Therapy score of 70.0, t(199) = 7.956, p ≤.001.

Section IV Social Rehabilitation
- Spearman's correlation coefficient (r_s) of Social Rehabilitation Therapy received by the patient and Effectiveness of Social Rehabilitation Therapy was 0.314, and that was statistically significant at the 0.01 level (p ≤.001).
- Effectiveness of Social Rehabilitation Therapy score was statistically significantly lower by 0.825 (95% CI, -1.05 to -0.60) than an ideal Effectiveness of Social Rehabilitation Therapy score of 7, t(199) = 7.239, p ≤ .001.
Section -V Psychological rehabilitation

- Spearman's correlation coefficient ($r_s$) of Psychological Rehabilitation Therapy received by the patient and Effectiveness of Psychological Rehabilitation Therapy was 0.379, and that was statistically significant at the o.01 level ($p \leq .001$).

- Effectiveness of Psychological Rehabilitation Therapy score was statistically significantly lower by 18.992 (95% CI, -1.80 to -2.21) than an ideal Effectiveness of Psychological Rehabilitation Therapy score of 6.3, $t(199) = 18.992$, $p \leq .001$.

Section –VI Vocational and Occupational rehabilitation

- Spearman's correlation coefficient ($r_s$) of Vocational and Occupational Rehabilitation Therapy received by the patient and Effectiveness of Vocational and Occupational Rehabilitation Therapy score was 0.381, and that was statistically significant at the o.01 level ($p \leq .001$).

- Effectiveness of Vocational and Occupational Rehabilitation Therapy score was statistically significantly lower by 21.128 (95% CI, -2.06 to -2.48) than an ideal Effectiveness of Vocational and Occupational Rehabilitation Therapy score of 6.3, $t(199) = 21.128$, $p \leq .001$.

Section –VI I Sexual rehabilitation in Male.

- Spearman's correlation coefficient ($r_s$) of Sexual Rehabilitation Therapy received by the patient and Effectiveness of Sexual Rehabilitation Therapy score was 0.006, and that was statistically significant at the o.01 level ($p = .47$).

- Effectiveness of Sexual Rehabilitation Therapy score was statistically significantly lower by 17.769 (95% CI, -2.09 to -2.61) than an ideal Effectiveness of Sexual Rehabilitation Therapy score of 3.5, $t(199) = 17.769$, $p \leq .001$.

Sexual rehabilitation in Female.

- Spearman's correlation coefficient ($r_s$) of Sexual Rehabilitation Therapy received by the female patient and Effectiveness of Sexual Rehabilitation Therapy score was 0.009, and that was statistically significant at the o.01 level ($p = .24$).
Effectiveness of Sexual Rehabilitation Therapy score was statistically significantly lower by 10.775 (95% CI, -1.52 to -2.22) than an ideal Effectiveness of Sexual Rehabilitation Therapy score of 2.8, t(199) = 10.775, p ≤ .001.

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- Spearman's correlation coefficient ($r_s$) of Barthel Index Score and Effectiveness of Vocational and Occupational Rehabilitation Therapy score was, 0.447, and that Vocational and Occupational statistically significant at the o.01 level ($p ≤ .001$).
- Spearman's correlation coefficient ($r_s$) of Barthel Index Score and Effectiveness of Sexual Rehabilitation Therapy score was, 0.400, and that it is statistically significant at the o.01 level ($p ≤ .001$).
- Spearman's correlation coefficient ($r_s$) of Barthel Index Score and Effectiveness of Sexual Rehabilitation Therapy score was, 0.202, and that was statistically significant at the o.01 level ($p = .002$).

**5.4 CONCLUSION**

Traumatic paraplegic patients got excellent nursing care and Physical rehabilitation of the population was statistically significant. There was strong correlation between Social rehabilitation therapy received by the patients and effectiveness of social rehabilitation among the population, Psychological rehabilitation therapy received by the patients and effectiveness of psychological rehabilitation of the population, and Vocational and Occupational Therapy received by the patients and effectiveness of Vocational and Occupational rehabilitation of the population. There was weak association between Sexual rehabilitation therapy received by the patients and effectiveness of sexual rehabilitation of the population. Contrast to this only physical
rehabilitation was statistically significant. Social, Psychological, Vocational and Occupational and Sexual rehabilitation were not statistically significant. Furthermore, there was strong correlation between Barthel Index Score and Social rehabilitation, Barthel Index Score and Psychological rehabilitation, Barthel Index Score and Vocational and Occupational rehabilitation and Barthel Index Score and Sexual rehabilitation of the population.

5.5 IMPLICATIONS AND UTILIZATIONS

The findings of the study have several implications for health care provider, research, community and paraplegic individuals.

Health care team

Health care team is an integral part of health care services. This study can be helpful for medical, paramedical and nursing professional who are providing care to the spinal cord injury patients. This study included comprehensive aspects of spinal cord injury and rehabilitation of the patient with spinal cord injury. This study also can help medical, physiotherapy, MSW and nursing students to understands the rehabilitation aspects of paraplegics. Research finding can be utilized in providing nursing care to the traumatic paraplegic patinents.

Research:

This study has greater scope for further research with large numbers and by taking each variable separately. The data, instrument and methodology of the study can be helpful for further research.

Community:

This study has prepared in a simple language. Pictures and conceptual frameworks have been shown wherever necessary. It can be easy to read and understand this study even by non medical persons. This study can give new vision to community to feel and understand paraplegics.

Paraplegics:

This study can also helpful to paraplegic patients. The study can act as a source of motivation and inspiration for the individual suffering with paraplegia.
5.6 LIMITATIONS OF THE STUDY

This study was limited for the patient admitted in Government Spine Institute, Ahmedabad, India. Only traumatic paraplegic patients were included in the study. The study was limited for 200 samples. Study was conducted to assess Physical, Social, Vocational and Occupational and Sexual rehabilitation. It was difficult to assess each variable. Only Physical Nursing Care was evaluated in the study. As it was team efforts specific nursing role in Social, Psychological, Vocational and occupational and Sexual rehabilitation therapy was difficult to analyze.

5.7 RECOMMENDATIONS FOR FURTHER STUDY:

Following are some recommendation on the base of present study. Further research work can be done with the use of data generated through this study. The tool and methodology also can be helpful for the further study.

1. Similar study can be done for large scale for generalization.
2. Study can be done on separate aspects of rehabilitation like physical, social, psychological, vocational and occupation or sexual rehabilitation.
3. Study can be done to assess psychological problems of family members of paraplegics.
4. Similar study can be done for quadriplegic patients.
5. Comparative study of social rehabilitation of male and female paraplegic patients.
6. Comparative study of Psychological rehabilitation of male and female Paraplegic patients.
7. Comparative study of Sexual rehabilitation of male and female paraplegic patients.
8. Study to assess perception of society towards paraplegics.
9. To prepare guideline on effective rehabilitation for health care provider with base of information got from large scale similar study.
10. Prepare policies and protocols for rehabilitation services for paraplegia.