

Efficacy of Home Modification & Relaxation Exercise in Cervical Myelopathy: A Case Study

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Abstract:

Background: Cervical myelopathy (CM) is caused by narrowing of the cervical spinal canal. Some of its symptom can be treated without surgery such as collar or bracing are useful in treating neck immobilization, medications are used to reduce pain and inflammation.

Objective: This study aims to explore the Role of home modification & Relaxation exercise in improving the quality of life & psychological well-being of patient of cervical myelopathy.

Method: It's a case study of patient of cervical myelopathy. On base line patient was assessed by WHOQOL, FIM, PSOM and HSSAT checklists. After completion of assessment; the patient was enrolled for therapy sessions. 20 sessions were planned for desired results. After the completion of 20 sessions, patient was reassessed by same tools to measure the difference.

Results: home modification & relaxation exercise proved effective in improving quality of life and psychological well-being of patient. Her improvement was manifested by the final scores of WHOQOL, HSAT, PSOM and FIM.

Conclusion: This case study documented the role of home modification & Relaxation exercise in improving the quality of life and psychological well-being of patient of cervical myelopathy.

Keywords: Home Modification, Relaxation Exercise, Quality of Life & Psychological Well-being

I. INTRODUCTION

Cervical Myelopathy is a syndrome & dysfunction of spinal cord. It is mostly manifested by cord dysfunction (Poor balance, dexterity, paralysis and incontinence). Broad sign and symptoms are present in patients that largely depend upon the dysfunction and chronicity of spinal cord magnitude (Edward, et, al). Some patients because of weak fine motor skills are unable to perform self-care activities like grooming, dressing and feeding. They need a person who assists them for the performing of these basic daily living activities. This dependence definitely hurts their psyche. Sound psyche is necessary for strengthening our will power and strong will power is positively correlated with recovery from any illness. Several researches cited the importance of home modification in improving quality of life and psychological well-being of physically disabled patients (Pynoos). Work of Petersson, et.al, showed the efficacy of home modification in improving the quality of life of their patient. Gitlin and colleagues described that home modification decelerated the proportion

of functional dependency, improved caregiver self-efficacy, and decreased mortality amongst older people. (Stark S, Landsbaum et, al)

Mann, Ottenbacher, Fraas, Tomita, and Granger (1999) stated that home modification and assistive technologies reduced functional dependency in older people and expenditures for personal assistance. These studies advise that older adults may benefit from environmental modifications (Stark S, Landsbaum et, al)

The prospective for alteration to the constructed environment to lessen levels of disability, decrease healthcare cost and improve quality of life has been well documented. The plan and structure of housing effects the quality of life and individuality of a population, particularly one that is ageing or is disabled (Carnemolla P, et, al)

Home modification is consisted of measures those are required to make occupants fully functional despite their physical disability. It sometime needed rearrangement of home equipment (Cumming et.al). Some time to maximize patient independence: we have to modify permanent features of home (i.e., addition of ramps, installation of lifts, and reconstruction of bathrooms) Gitlin, Miller, & Boyce.

Efficacy of home modifications is indicated by the finding of following studies. It made patients functional by making home environment easily approachable (Fänge & Iwarsson). It aided colors in the life of older people by making socialization possible for them (Tanner, Tilse, & de Jonge). Home modification made it possible for the patients to perform activities for daily living with little assistance (Connell, Sanford, Long, Archea, & Turner).

In summary, by identifying and correcting the barriers in home environments that are potentially threat to physically disabled peoples: discussed literature describes that modified physical environment could compensate to meet their needs.

II. CASE REPORT

It is a case study of middle aged Cervical Myelopathy female patient. She came to Dow Institute of Physical Medicine & Rehabilitation with presenting complaints of progressive weakness, muscular fatigue, in ability to perform activities for daily living, difficulty in mobility and anxiety. She was referred to Occupational therapist for ADL (activities of daily living) training and clinical psychologist for the treatment of

anxiety. After taking informed consent from the patient, she was enrolled for assessment and therapy.

- A. *Assessment:* occupational therapist assessed this client on WHOQOL, FIM & HSAT to determine her base line. Whereas psychologist assessed this client on Beck Anxiety Scale.
- B. *Tools:* Several checklists are used (before and after therapy) in this case study, their name and purpose is described in the following table.

Table1.0: description of tools

WHOQOL (World health organization quality of life).	It is consisted of 4 domains & its purpose is to measure quality of life.
FIM(functional independence measure)	It is consisted of 4 sub-domains it is used to measure excel in daily living skills.
HSAT	It is consisted of 6 areas, which intends to measure obstacles in home measure obstacles in home

- C. *Findings:* Assessment that was done by occupational therapy stressed on the need of home medication to make her functional at home. Psychological assessment is evident of neurotic worry.
- D. *Treatment Plan:* On the basis of her performance on these checklists and medical record, it was decided that 15 sessions of occupational therapy will be required to acquaint client with adaptive devices and home modification whereas 5 sessions of relaxation training will be required to diminish anxiety.
- E. *Summary of Psychological Intervention:* She underwent Psycho- therapy for 45 minutes; daily for a period of 6 days.

Session 1: Therapy session was started with active listening. Reassurance regarding her recovery was provided, as she was confused about her recovery. Reassurance was helpful in establishing rapport and boosting her self-esteem. In the end, therapist explained the procedure and efficacy of JPMR.

Session 2: First session of JPMR was conducted. Patient was made to lie down in a relax position in a dimly lit, quiet room with eyes closed. Instructions were given in a slow tone. She was asked to concentrate on every part of the body, beginning from toes & coming up towards the head. Patient was suggested to feel the tension in each part of body & then gradually relax her muscles when asked. After completion of relaxation exercise, the patient was given an opportunity to ventilate. Next appointment with the reassurance of speedy recovery was given.

Session 3: Patient was seen. She was comparatively fresh. Second session of JPMR was conducted. At the end of session, patient reported positive effects of relaxation exercise. Guided imagery (a technique of

relaxation) was explained to her and she was also asked to practice it at home.

Session 4: Patient was reviewed. Patient reported much control over anxiety. After relaxation exercise, she told that now my mind is relax and I am able to think that rehabilitation services will alter my life.

Session 5: 4th session of JPMR was conducted. Patient was reviewed; today she was confident that she will restore her previous level of functioning.

Session 6: 5th session of JPMR was conducted. After the session, therapist explained her uses of relaxation exercise in overcoming anxiety and she was advised to use it at least once daily: until fully acquainted with adaptive devices and home modification.

F. *Summary of Occupational Therapy Intervention:*

- Training session lasted for 45 minutes, 2 days per week for 1 year. Initial 2 sessions were taken to find out the insight of client about her disease and how she is coping with this sickness and to give the short awareness with proper counseling.
- Next two month sessions were conducted to give proper knowledge and training of energy conservation, work rest work techniques and proper seating and positioning guidelines for working at home.
- After two months we did re assessment which showed a little improvement in pain and fatigue due to correction in positioning and posture .we gave sessions to improve her functionality and work on ranges and pain management.
- provided adaptive devices to make her independent in number of daily living activities including , long and curved handed bath brushes for bathing , curved and long spoon and fork for easy grip and feeding , angular comb for grooming , adaptive duster and modified rocker knife for kitchen activities
- After re assessment team decided to visit her home for find out the hindrances in functionality and mobility.
- During the visit we noticed that her total space area of home was very small and it was quite difficult to work in this area and number of hurdles were there at client's home including 6 lacking were in front door , 3 in hall way , 4 in kitchen , 5 in bed room , 8 in bathroom , 4 in stair case according to home self-safety assessment tool (HSSAT) .We worked to take measurements according to client's specifications and worked up for solutions and within one month we removed all hindrances and also fixed a wall mounted railing for supportive purpose .

- After application of modification

III. RESULTS

Table 1.1: The Pre and Post FIM Scoring

Sub-domains	Pre	Post
SELF CARE(54)	38	53
MOBILITY (35)	28	33
COMMUNICATION (14)	11	12
SOCIAL COGNITION (21)	13	19
TOTAL (124)	90	117

Graph 1: The Pre & Post FIM Scoring

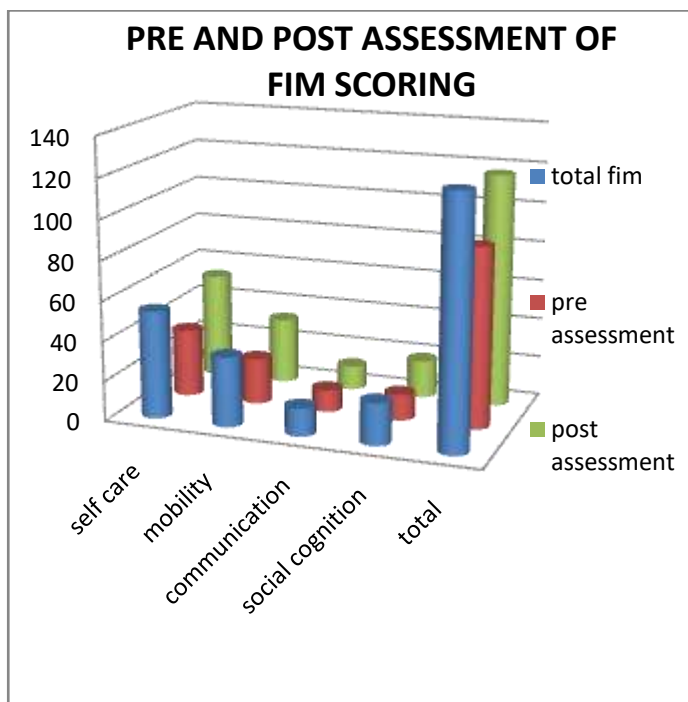


Table 1.2: The Pre & Post scores of HSSAT

AREAS TO BE ASSESSED	Maximum scores	Pre	Post
ENTRANCE TO FRONT DOOR	8	6	0
HALLWAY OR FOYER	4	3	0
LIVING ROOM	8	N-A	N-A
KITCHEN	8	4	0
BED ROOM	9	5	0
BATH ROOM	10	8	0
STAIR CASE	5	4	0
LAUNDRY ROOM/BASEMENT	7	N-A	N-A

Graph 2: Pre & Post Score of HSSAT

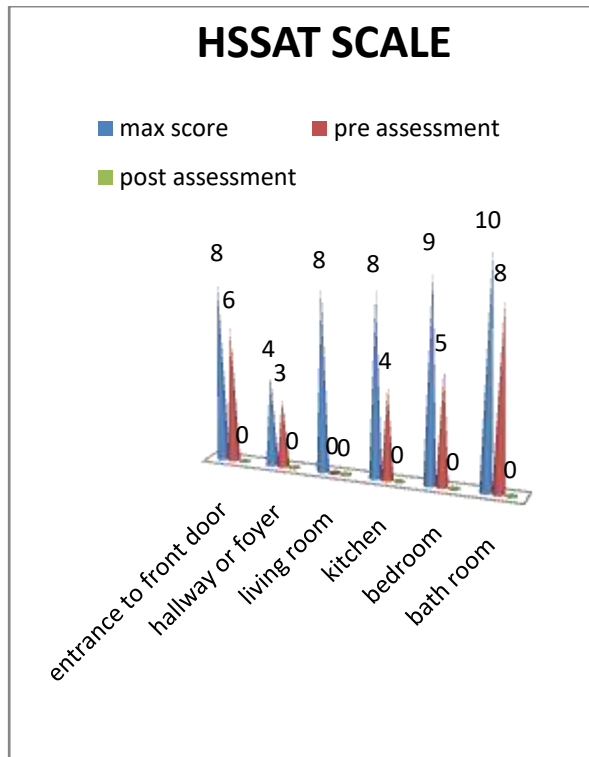
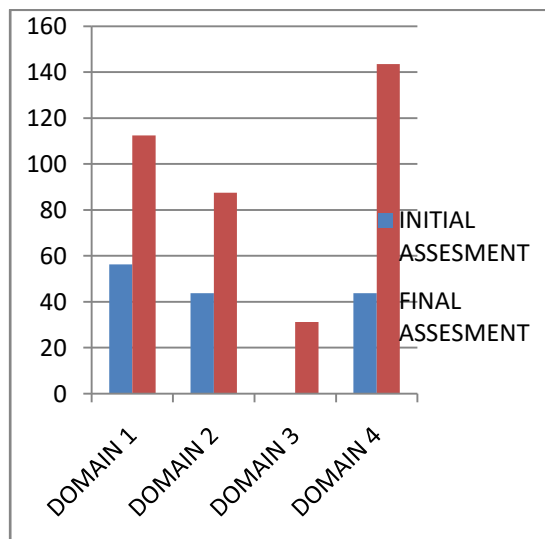


Table 1.3: Initial & Final Scoring of WHOQOL

Domains	Pre-scores	Post scores
Physical	56.25	112.5
Psychological	43.75	87.5
Social relations	0.0	31.25
Environment	43.75	143.5

Graph # 3 (pre & post scoring of WHOQOL)



IV. DISCUSSION

The data analyzed in **Tables 1.1 - 1.3** and **Figures 1, 2, & 3** is interpreted and discussed as below:

The table 1.0 & graph 1 indicates the improvement in patient's score on all four sub-domains of FIM. Detail analysis indicates that before home modification patient had limitations in all 4 domains i.e. (self-care, mobility, communication and social cognition). After home modification; remarkable difference in patient's score on FIM was noted.

The table 1.2 indicates the improvement in patient's psychological well-being. Socialization is an important element of psychological well-being. Home modification helps the patients to master daily living skills, these things give them confidence and they work to restore their previous social contacts which in turn positively affect their psyche. This phenomenon is evident by table 1.1 and graphs no 2.

By overcoming the hurdles in their working environment either this is home or office, we can make physically disabled fully functional. The importance of this is shown by present case study. Table 1.3 and graph 3 is also evident of this.

Table 1.4 and graph 4 show the difference on WOQOL after exercising home modification. Significant difference on all four domains of WOQOL was noted after exercising home modification, which is the evident of utility of home modification.

V. CONCLUSION

The findings of this case study clearly indicate that home modification is effective in improving the quality of life and psychological well-being of physically disabled patients.

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