



International Journal of Medical and Exercise Science

(Multidisciplinary, Peer Reviewed and Indexed Journal)

ORIGINAL ARTICLE

A STUDY TO FIND OUT THE PREVALENCE AND CHARACTERISTICS OF LOW BACK ACHE AMONG CAREGIVERS OF ADULTS WITH SPINAL CORD INJURY

Search engine:
www.ijmaes.org

Gummadi Ashish¹

Author

¹Senior Physical therapist, Department of Neuro-rehabilitation, Institute of Neurosciences, Kolkata, India, Mail id: ashishgummadi@gmail.com

ABSTRACT

Back ground: Back pain is common among health workers especially patient's caregivers in Spinal Cord Injury group. Objectives of the study were to estimate the prevalence of low back pain among the caregivers of adults with spinal cord injury. Care givers of all the spinal cord injured individuals who seeks for rehabilitation in the department of PMR were eligible to participate in the study. **Methodology:** This was an observational study with a cross-sectional study design. After receiving the consent, the participants were asked to fill the questionnaire. First part of the questionnaire consists of demographical data of the patients and their caregivers. If the caregiver was reporting LBP, then they were asked to grade their pain intensity through Visual Analogue scale and also to fill Oswestry Disability Index (ODI) to identify the disability caused by the LBP. These data were used to find the prevalence of LBP among caregivers and also to find relationship with various demographical variables. **Results:** One hundred patients and their caregivers' data collected and analyzed. Out of these 20 where drop outs and samples female (42) caregivers reported that they have low back pain. In that 16 caregivers were males and 26 were females. There was no statistically significant difference between the patients and caregivers of the LBA group and no pain group in the demographic data except the duration of injury. **Conclusion:** This study aimed to find out the prevalence and characteristics of low back ache of caregivers of the adult with low back pain. Study revealed 51.9% prevalence of low back pain among the SCI caregivers.

Key words: Low back pain, Caregiver, Spinal cord injury, Physical therapy

Received on 11th September 2020, Revised on 12th October 2020, Accepted on 10th November 2020
DOI:10.36678/IJMAES.2020.V06I04.001

INTRODUCTION

Low back pain (LBP) is a common problem affecting most of the adults' population at some point during their lifetime, especially in low and middle income countries^{1, 2}. In a report of the World Health Organization (WHO) in 2003, it was found that about 80% of people have LBP at some time in their life³. Quality of life, burden, satisfaction, and depression of caregivers have been extensively studied. Back pain is the most frequent cause of activity limitation in people below 45 years according to (NIH) guidelines⁴.

Risk factors associated with LBP in the workplace have also been studied, particularly in occupations such as nursing, industrial work, police service, and fire service^{5, 6}. Lifting heavy objects, inappropriate lifting techniques and poor fitness levels are risk factors among nurses, whereas heavy physical activity, frequent bending and lifting, repetitive movements, being exposed to vibration, and depression are significant risk factors among industrial workers⁷⁻¹⁰.

After the Traumatic or Non- Traumatic injury the individual becomes spinal cord injury there is of the need for assistance in their daily living activities. This might be assistance in feeding, bathing dressing shifting to uneven surfaces or even surfaces toileting or dressing. Today with the change in health care, we see more family members as the source of care support more than 40% of spinal cord injured individuals use some assistance or the other with their family members females are more likely to have a paid attendant as caregiver, while male have their parent assist.

Manual patients transfer tasks between bed wheel chair and bath cart, perceived physical exertion were consistently associated with different measure of LBP. The symptoms of low back pain are notice with flexion of the back, and when lifting the heavy objects. Patients handling was found to be an extremely hazardous job that had substantial risk of causing a low back injury whether with one or two patient handlers. Prevalence of LBP was significantly higher among caregivers (58%) compared with age- and BMI-matched controls (27.6%). The prevalence of LBP was also higher among caregivers of SCI patients with long duration of injury; i.e. LBP was associated with care-giving duration¹¹.

Objectives of the study: Objectives of the study were to know the prevalence of low back pain among the caregivers of adults with spinal cord injury and to find the disability caused by low back pain in caregivers of adults with spinal cord injury.

METHODOLOGY

Care givers of all the spinal cord injured individuals who seeks for rehabilitation in the department of PMR are eligible to participate in the study. After receiving the consent, the participants were asked to fill the questionnaire. First part of the questionnaire consists of demographical data of the patients and caregivers. If the caregiver is reporting LBP, then they will be asked to grade their pain intensity through Visual Analogue scale and also to fill Oswestry Disability Index (ODI) to identify the disability caused by the LBP.

This study design was observational study and the study setting done at Urban and rural population around the outskirts of Bangalore.

100 subjects were taken for the study and Simple Random Sampling method used to allocate the subjects in different group. Subjects aged between 25 to 50 years of both sexes from urban and rural areas of Bangalore. The study conducted for duration of 10 months.

Inclusion Criteria: age- 25-50yrs, both male and female subjects, Subjects with spinal cord injury, subjects with six months post injury, subjects attending for more than 4 hours.

Exclusion Criteria: Previous history of back pain irrelevant to care –giving, Caregivers who have history of back surgery, Caregivers who have a history of back fracture, Caregivers with physical disability.

Outcome Measure: Demographic variables, Pain, Neck Function.

Measurement Tools: Demographic Questionnaire, Oswestry Disability Index–short form (ODI) and VAS scales.

Procedure for Intervention: As the questionnaire is being filled and returned by the subjects, the data were analyzed to find outcome and significant differences in assessment of risk of low back pain in caregivers with spinal cord injury patients.



Figure 1. Assessment of ODI Scale with Patient



Figure 2. Transferring Techniques for Care –givers

RESULT

Gender	No. of patients	%
Female	42	52.5
Male	38	47.5
Total	80	100.0

Table 1: Demographic data of genders

Duration of CARE (months)	Gender		Total
	Female	Male	
<6	8(19%)	8(21.1%)	16(20%)
6-12	34(81%)	30(78.9%)	64(80%)
>12	0(0%)	0(0%)	0(0%)
Total	42(100%)	38(100%)	80(100%)

P=1.000, Not Significant, Fisher Exact Test

Table 2: Duration of care in relation to gender

AVG. Time spend with the patient (hours per day)	Gender		Total
	Female	Male	
<5	1(2.4%)	4(10.5%)	5(6.3%)
5-8	35(83.3%)	29(76.3%)	64(80%)
>8	6(14.3%)	5(13.2%)	11(13.8%)
Total	42(100%)	38(100%)	80(100%)

P=0.403, Not Significant, Fisher Exact Test

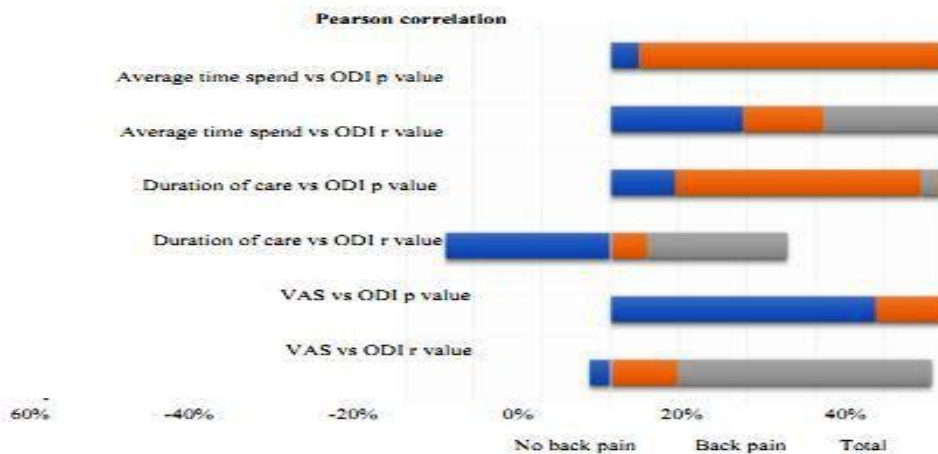
Table 3: Average time spend with patient according to gender

Variables	VAS		Total	P value
	No back pain	Back pain		
Duration of CARE (months)	6.52±1.31	7.43±1.79	7.02±1.65	0.013*
AVG. Time spend with the patient (hours per day)	6.10±1.49	6.92±1.30	6.55±1.44	0.011*
ODI %	12.67±13.97	46.8±12.47	31.44±21.52	<0.001**

Table 4: Duration of care and average time spend on patient with neck and back pain

pair	VAS		Total
	No back pain	Back pain	
VAS vs ODI			
▪ r value	-0.060	0.193	0.745
▪ p value	0.728	0.209	<0.001**
Duration of care vs ODI			
▪ r value	-0.219	0.048	0.187
▪ p value	0.198	0.755	0.097+
Average Time spend vs ODI			
▪ r value	0.445	0.270	0.435
▪ p value	0.007**	0.077+	<0.001**

Table 5: Duration of care and average time spend with patient in relation to VAS and ODI



Graph: 1 Graphical representation of duration of care and average time spend with patient in relation to VAS and ODI

One hundred patients and their caregivers' data collected and analyzed. Out of these 20 where drop outs and samples female (42) caregivers reported that they have low back pain. In that 16 caregivers were males and 26 were females. There was no statistically significant difference between the patients and caregivers of the LBA group and no pain group in the demographic data except the duration of injury.

DISCUSSION

In the present study, prevalence of LBA was found to be 51.9%. Our results are similar to the study reported by Barak et al among Turkies people and they reported 54%.

The prevalence was also higher among the caregivers of SCI patients with long duration injury; i.e. LBA was associated with care giving duration. This was attributed to activities that cause LBA having carried out for long time.

ASIA impairment scale was used to evaluate the patient's level of injury and the assistance of caregivers required in their mobility LBA¹².

SCIM scores were not associated with caregivers' LBA. As there are no mechanical devices available in India to transfer a patient, manual handling is common. The availability of man power in a home set up also an issue. A high frequency of LBA among caregivers with low ASIA score was thus an expected result. The use of mechanical patient lift systems is advantageous in reducing the load on the back and healthcare workers are recommended to use these systems^{13,14}.

They also found that LBP was more common among caregivers of patients with motor complete lesion identified according to the American spinal injury impairment scale (AIS). transfer and locomotion of the patients nursed by caregivers with LBP were significantly lower than those of patients nursed by caregivers without LBP¹⁵.

LBP causes a large financial burden on individuals, families, communities, industry and governments including the costs of medical care, compensation payment, productivity loss, employee retraining, administrative expenses and litigation¹⁶.

Low back pain (LBP) is well recognized to be an enormous general health problem and is the leading cause of activity limitation throughout much of the world. LBP is a major problem all over the world, especially in low and middle income countries¹⁷.

Ethical Clearance: Ethical clearance has obtained from Hosmat College of Physiotherapy and Research Institute,

Bangalore to conduct this study with reference number: 33/PHSIO/IRB/2018-19 dated 07/06/2018.

Conflicts of Interest: The author declares that there is no competing interest in publishing this article.

Fund for the study: This is self-funded study.

CONCLUSION

This study aimed to find out the prevalence and characteristics of low back ache of caregivers of the adult with low back pain. Study revealed 51.9% prevalence of low back pain among the SCI caregivers. Duration of injury was the key factor for the occurrence of low back pain.

REFERENCES

1. Dunn KM, Croft PR. (2004). Epidemiology and natural history of low back pain. *Eura Medicophys.*, 40(1): 9-13.
2. Tong HC, Haig AJ, Nelson VS, Yamakawa KS, Kandala G, Shin KY. (2003). Low back pain in adult female caregivers of children with physical disabilities. *Arch Pediatr Adolesc.*; 157:1128-1133.
3. Feng CK, Chen ML, Mao I F. (2007). Prevalence of and risk factors for different measures of low back pain among female nursing aides in Taiwanese nursing homes. *BMC Musculo skelet Disord*; 8: 52.
4. Bardak a, Erhan and Gündüz (2012). Low back pain among caregivers of spinal cord injured patients *j rehabil med.*; 44: 858-861.
5. Ebru Yilmaz Yalcinkaya, et al. (2007). A Pilot Study Low Back Pain Prevalence and Characteristics in Caregivers of Stroke Patients, 17(5): 389-393.

6. Tong HC, HaigAJ, NelsonVS, YamakawaKS, KandalaG, ShinKY (2003). Low back pain in adults' female caregivers of children with physical disabilities. *Archives of pediatric and Adolescence Medicine*; 157(11): 1128-33.
7. TomoikaK, KumagaiS, Higuchi Y, TsujimuraH, AraiY, Yoshida J. (2007). Low back load and satisfaction rating of caregivers and care receivers in bathing assistance given in nursing home for the elderly practicing individual care) *Sangyo Eiseigaku Zasshi*; 49(2); 54-58.
8. Majim Y, HorikikawaJ, Shonol, (2004). Study on the Lower back pain in home helper's and. Development of materials for occupational health education). 1; 26(1); 59-74.
9. Brown AR, Mulley G P (1997). Injuries sustained by caregivers of disabled elderly people. *Age Ageing*; 26(1); 21-23.
10. MarrasWS, Davis KG, Kriking BC, Bertsche PK. (1999). A Comprehensive analysis of low back disorders risk and spinal loading during the transferring and repositioning of patients using different techniques, *Ergonomics* ; 42(7);904-926.
11. TomoikaK, KumagaiS, HiguchiY, Tsujimura H, AraiY, Yoshida J. (2007).Low back load and satisfaction rating of caregivers and care receivers in bathing assistance given in nursing home for the elderly practicing individual care.)*Sangyo Eiseigaku Zasshi*, 49(2); 54-58.
12. SchibyeB, Hansen AF, Hye-Knudsen CT, (2003). Biomechanical analysis of the effect of changing patient-handling technique. *Appl Ergon*; 34(2): 115-123.
13. FrangalaG, FragalaM, Pontani-Baily L. Proper positioning of clients: a risk for caregivers.) *AAOHN J* .2005October; 53(10); 438-442.
14. Davidson M & Keating J (2001). A comparison of five low back disability questionnaires: reliability and responsiveness. *Physical Therapy*; 82: 8-24.
15. Joshua Israel Vincent, Joy Christine Mac Dermid Ruby Grewa, Vincent Prabhakaran Sekarand Dinesh Balachandran, (2014). Translation of Oswestry Disability Index into Tamil with Cross Cultural Adaptation and Evaluation of Reliability and Validity, *Orthopaedics Journal*, 8, 11-19.
16. Matthew O.B. Olaogun, Rufus A. Adedoyin, Innocent C. Ikem & Olubusayo R. Anifaloba *Physiotherapy Theory and Practice*, Volume 20, 2004-Issue 2; 10 Jul 2009.
17. Craig CL, Marshall AL, et al. (2003). International physical activity questionnaire: 12-Country reliability and validity. *Medicine and Science in Sports and Exercise*, 35(8): 1381-395.

Citation:

Gummadi Ashish (2020). A study to find out the prevalence and characteristics of low back ache among caregivers of adults with spinal cord injury, *ijmaes*; 6 (4); 829-835.