

A Cross-Sectional Study of Treatment-Seeking Behaviour of Patients Suffering from Neurological & Musculoskeletal Disorders in a Tertiary Care Hospital in Southern Rajasthan

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Abstract:

Context: The treatment seeking behaviour of patients suffering from Neurological Disorder and Musculoskeletal Disorder vary among nations. Delayed diagnosis and presentation at healthcare facilities are adding more Disability-adjusted life years to the sufferers.

Aim: To study the treatment-seeking behaviour of patients suffering from Neurological Disorder & Musculoskeletal Disorder.

Settings and Design: A hospital based cross-sectional study was conducted on 300 patients attending physiotherapist clinic a tertiary care hospital in southern Rajasthan in duration of 6 months.

Materials and Methods: Diagnosed cases of Neurological Disorder & Musculoskeletal Disorder were interviewed for various variables, all relevant data is filled into per-designed Performa and outcomes were studied.

Statistical Analysis Used: Data was analysed for percentages, Chi-square test and others as relevant. Results: The study identified that maximum patients presented after 2 days of onset of symptoms. Patients of Neurological Disorder presented early as compared to Musculoskeletal Disorder patients, additionally, there was a significant association of locality with the satisfaction level of patients, patients from Rural area were more satisfied from the treatment as compared to the Urban patients.

Conclusions: There is a pressing need to advance and implement more effective strategies for primary prevention of Neurological Disorder and Musculoskeletal Disorder. Simultaneously, a substantial effort must be directed towards improving the quality of life for those already afflicted by these conditions and guiding individuals on how to best manage these often persistent disabilities.

Keywords: Neurological Disorder, Musculoskeletal Disorder, Treatment Seeking Behaviour, Satisfaction.

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Introduction

While it's true that communicable diseases are more prevalent in developing nations, there has been a recent increase in non-communicable diseases. Among these, a substantial portion of the health burden relates to neurological and musculoskeletal disorders, impacting morbidity, mortality, disability, and overall quality of life.

Neurological Disorders (ND) encompass conditions affecting the central and peripheral nervous systems, including epilepsy, Alzheimer's disease, various dementias, cerebrovascular diseases like stroke, migraines, headaches, multiple sclerosis, Parkinson's disease, neuroinfections, brain tumors, traumatic nervous system disorders (e.g., brain trauma), and disorders resulting from malnutrition.

In 2005, the World Health Organization (WHO) reported that neurological disorders contributed to 10.9%, 6.7%, 8.7%, and 4.5% of the global disease burden in high, upper-middle, lower-middle, and low-income countries, respectively.[1]

Notably, rural areas, where 70% of India's population resides, exhibit prevalence rates 1-4 times higher than urban areas. For instance, in Bangalore, a community-based survey of 102,557 individuals revealed prevalence rates of 2190 and 4070 with a ratio of 1:1.85 for urban and rural populations, respectively. This data suggests that India is home to an estimated 20 to 30 million individuals with neurological disorders, with common conditions including epilepsy (6-8

million), headache (10 to 12 million), and stroke (1 to 2 million). [2]

According to the International Classification of Diseases (ICD-10), Musculoskeletal Disorders (MSD) fall under the category of diseases related to the musculoskeletal system and connective tissues. These encompass a range of disorders, from acute and short-term conditions to lifelong dysfunctions. Notable musculoskeletal disorders include osteoarthritis, inflammatory arthritis (primarily rheumatoid arthritis), back pain, musculoskeletal injuries (e.g., sports injuries), crystal arthritis (such as gout), and metabolic bone diseases (mainly osteoporosis).[3] Other disorders in this category include joint derangement, scoliosis, and myositis.

Globally, musculoskeletal disorders have a prevalence ranging from 14% to 42%, with India experiencing a particularly high prevalence rate of 59.4%. The economic impact of these disorders on society is substantial, primarily due to reduced productivity among affected individuals. For instance, Felts and Yelin[4] reported that the cost of musculoskeletal disorders accounted for 1% of the gross national product in the USA, while Badley[5] noted that musculoskeletal disorders represented 32% of all chronic disability costs in Canada. Much of this cost stems from work loss, a common consequence of these disorders. Consequently, obtaining epidemiological data on neurological and musculoskeletal disorders is essential for planning culturally sensitive and cost-effective healthcare services.

Materials & Methods

Study Area: This study was conducted at a tertiary care hospital in southern Rajasthan.

Study subjects: Diagnosed cases of ND & MSD attending Physiotherapy clinic attached to a tertiary care hospital in southern Rajasthan.

Study Type: Hospital based cross sectional study.

Study Period: Carried out for a duration of 6 months (April 2023 to September 2023)

Inclusion Criteria: Cases of ND & MSD attending Physiotherapy Center (RRC)

Exclusion Criteria:

- Post-operative patient for next 24 – 48 hrs.
- Patient having psychiatric problem.

Sample Size: The sample size was calculated using open Epi-info, considering population size 20,184 (last 1 year total OPD of rehabilitation center of the study area) and expected frequency was considered 44% according to Jennifer et. al.[6] and considering worst acceptable frequency 50%, A minimum sample size of 260 patients required to find out the burden of ND and MSD patients at Confidence Interval 95% .Considering Non response rate of 10%,we added 260+26=286 . and finally round up the sample size we took total sample size 300 patients.

Sampling Method: All Patients attending physiotherapy center fulfilling inclusion criteria were included in our study during my four days (Monday, Tuesday, Wednesday and Friday) visit of RRC between 9.00 Hrs to 11.00 Hrs

Data entry and analysis: Data was entered into Microsoft excel sheet and analyzed using SPSS 16.0 software. Descriptive statistics like frequency, percentages, measures of central tendency, measures of dispersion and inferential statistical tests like chi-square, were used. The statistical significance was evaluated at 95% confidence level $p < 0.05$ considered as statistically significant.

Result: In this hospital based study, 300 diagnosed cases of neurological and musculoskeletal disorders attending of Physiotherapy center were studied. In the studied subjects male (58.7%) contribute to total subjects and rest (41.3%) were female. Maximum patients 91 (30.3%) reported to the center two day later, followed by 3-7 days (23.7%). In MSD maximum case (32.9%) reported after 7 days while in ND maximum (43.2%) cases reported on second day. Which shows early presentation of ND patients to Our Center than MSD? (Table 1)

Table 1: Time since onset of symptoms and attending RRC

No. of Days	MSD	ND	Total
Same Day	9(5.6)	14(10.1)	23(7.7)
Next Day	22(13.7)	26(18.7)	48(16.0)
Two Days Later	31(19.3)	60(43.2)	91(30.3)
3-7 Days	46(28.6)	25(18.0)	71(23.7)
More than 7 days	53(32.9)	14(10.1)	67(22.3)
	161(100)	139(100)	300(100)

$\chi^2=38.167$ df 4 $p=0.000$

Only few (27.7%) patients went to government institutions and many number of patients went to traditional healers (29.3%), quakes (21.7%) on their first visit. While some patients (21.3%) visited private clinic. (Table 2)

Table 2: First step during treatment on onset of symptoms

First Consultation	MSD	ND	Total
Traditional Healer	54(33.5)	34(24.5)	88(29.3)
Quackes	36(22.4)	29(20.8)	65(21.7)
Private Clinic	23(14.3)	41(29.5)	64(21.3)
Govt Institution	48(29.8)	35(25.2)	83(27.7)
Total	161(100)	139(24.6)	300(100)

Maximum (55%) patients have attitude of taking treatment till full recovery. 25% patients believe that they want to continue treatment till symptoms get relieved while 20%.

215 (71.7%) of the total patients were satisfied with RRC center while 28.3% of them not satisfied with RRC. out of 161 MSD patients 112(69.6%) were satisfied and out of 139 ND Patients, 103 (74.1%) were satisfied.

112 (69.6%) MSD subjects were satisfied and 49(30.4%) were not satisfied. In gender distribution

of patients, males were more satisfied 69(75.8%) than females 43(61.4%) but difference between satisfaction level among them was considered to be statistically non-significant with $p>0.05$. In Education variable, literate 102(71.7%) subjects were more satisfied than illiterate 10(55.6%) and this finding was found to be statistically non-significant with $p>0.05$. Distribution of satisfied subjects according to locality revealed satisfaction level among rural was high (76.5%) than urban(57.6%) patients and this finding was statistically significant with $p<0.05$ (Table 3).

Table 3: Overall Satisfaction of the MSD patients attending RRC centre and their relation with Gender, Locality and Education

Variable	Satisfied	Not Satisfied	Total	P Value
Gender				
Male	69(75.8)	22(24.2)	91(100)	0.073
Female	43(61.4)	27(38.6)	70(100)	
Locality				
Rural	78(76.5)	24(23.5)	102(100)	0.020
Urban	34(57.6)	25(42.9)	59(100)	
Education				
Illiterate	10(55.6)	8(44.4)	18(100)	0.272
Literate and above	102(71.7)	41(28.7)	143(100)	
Total	112(69.6)	49(30.4)	161(100)	

103 (74.1%) ND patients were satisfied and 36(25.9%) were not satisfied. In gender distribution of patients males were more satisfied 66 (77.6%) than females 37 (68.5%) but difference between satisfaction level among them was considered to be statistically non-significant $p=>0.05$. In Education Variable literate 83 (78.3%) subjects were more satisfied than illiterate 20 (60.6%) and this finding was found to be statistically non-significant $p>0.05$. Distribution of satisfied patients according to locality revealed satisfaction level among rural was high 69 (75.8%) than urban 34 (60.8%) patients and this finding was statistically not significant with $p>0.05$

Discussion

Vanden Velden et.al.[7] observed that maximum patients 91 (30.3%) reported to the center two day later, followed by 3-7 days (23.7%). In MSD maximum case (32.9%) reported after 7 days while in ND maximum (43.2%) cases reported on second day. Which shows early presentation of ND patients to Our Center than MSD? Only few (27.7%) patients went to government institutions and many number of patients went to traditional

healers (29.3%), quakes (21.7%) on their first visit. While some patients (21.3%) visited private clinic.

100% patients were satisfied in Tennis elbow and Frozen shoulder patients. Satisfaction level among fracture patients (88.6), osteoporosis patients (77.8) and Cervical pain (70.6) was good but satisfaction level less than 70% in some diseases like Osteoarthritis (44%) low back pain (63%) and Contracture (50%) was low.

100% patients were satisfied in facial palsy. Satisfaction level among stroke patients (85.7), (83.3%) subjects were satisfied Diabetic Neuropathy and Peripheral Neuropathy, 75% of subjects were satisfied with GBS, and 73.2% subjects satisfied with TBI, but satisfaction level in some diseases like Parkinson's disease, Acute Myelitis, and Paraplegia were less than 70%.

Conclusion

The global significance of Neurological Disorders (ND) and Musculoskeletal Disorders (MSD) is set to increase substantially in the coming decades. While these conditions can affect individuals of all

ages, their most substantial impact is observed among the elderly population. The world is poised to witness a significant demographic shift, with the number of individuals aged 65 and older projected to more than double from 2007 to 2035, reaching approximately 1.16 billion (as per data from the US Census Bureau, 2007).[8] Consequently, ND and MSD are expected to represent a growing share of healthcare expenses.

Addressing this challenge necessitates a dual approach. Firstly, there is a pressing need to advance and implement more effective strategies for primary prevention of ND and MSD. Simultaneously, a substantial effort must be directed towards improving the quality of life for those already afflicted by these conditions and guiding individuals on how to best manage these often persistent disabilities.

India, as a developing nation, boasts a flourishing computer hardware and software technology sector. The proliferation of computers into towns and villages is noteworthy. To raise awareness and educate the public about ND and MSD, including their warning signs and preventive measures, medical authorities should collaborate with mass media to create engaging and informative programs. Furthermore, professional associations and societies in the fields of neurology and orthopedics should establish patient forums to disseminate this vital information to the public, focusing on both preventive and rehabilitative aspects.

References

1. World Health Organisation. Neurological disorders: public health challenges. Geneva; 2006.
2. Gourie-Devi M Organization of neurology services in India: unmet needs and the way forward. *Neurol India*. 2008 Jan-Mar; 56(1): 4-12.
3. Johnson MI, Dixey R. Should pain be on the health promotion agenda? *Glob Health Promot*. 2012 Dec; 19(4):41-4.
4. Felts W., Yelin E. The economic impact of the rheumatic diseases in the United States. *Journal of Rheumatology* 1989; 16: 867-84.
5. Badley E.M. The economic burden of musculoskeletal disorder in Canada is similar to that for cancer, and may be higher (Editorial). *Journal of Rheumatology* 1995; 22: 204-6.
6. Jennifer LK and Marian T H - Oxford text book of public health V edition (2006). Chapter 9.9, 1117-1124.
7. Vanden Velden J, De Bakker DH, Claessens AAMC, Schellevis FG. [A national study of illness encountered in general practitioners' surgeries. Basic report: morbidity in general practice] Utrecht: NIVEL; 1991 In Dutch.
8. Bureau UC. Section 1. Population [Internet]. Census.gov. [cited 2023 Oct 25]. Available from: <https://www.census.gov/library/publications/2006/compendia/statab/126ed/population.html>