

A Study on Risk Assessment, Medication Adherence in Patients with Spondylosis.

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ABSTRACT

Aim:To assess the Risk Factors and Medication Adherence among the patients with Spondylosis.

Methods:A Retrospective observational study was conducted in neurology department in a tertiary care hospital for a period of six months. Patients with symptoms of cervical and lumbar spondylosis, with age of above 18 years are to be enrolled and tested for the detection of spondylosis using the MRI, CT SCAN, X-RAY, under the supervision of neurologist. The factors such as the age of patient, occupation, residence, literacy, SES, social habits and type of treatment received etc and their association with the medication adherence and severity of pain were studied. We have taken 121 subjects as sample size and methods used are "Chi-square test".

Results:In our study out of 121 cases regarding gender of samples male 33(27.27%), female 88(72.72%). The majority of samples residing in rural areas 80(66.115%) and urban 41(33.884%).

Conclusion:The results of our study provide Spondylosis in India has disproportionate in number due to the lack of illiteracy, low socioeconomic status, poor medication adherence, Use of smoking and alcohol.

The good level of occupation, literacy level and socioeconomic class are associated with increased awareness and knowledge of the disease, its prevention, followed by effective treatment and better QOL.

Keywords:Spondylosis, Risk Factors, Medication Adherence, Pain severity.

I. INTRODUCTION

A painful condition of the spine resulting from the degeneration of the intervertebral discs. A

general term for age-related wear and tear of the spinal discs.

Spondylosis is common and worsens with age. This condition is often used to describe degenerative arthritis (osteoarthritis) of the spine. Spondylosis diffusely affects the vertebral column but is more pronounced in the cervical and lumbar spine where the motility is high. In the cervical area, it may cause compression of the spinal cord and/or nerve roots, and in the lumbar region, the cauda equina. While much has been written in recent years about cervical spondylosis little attention has been given to lumbar spondylosis. [1-16] This paucity is probably the result of misclassification in that spondylosis of the lumbar spine is frequently interpreted as herniation nucleus pulposus [15,16]. Since spondylotic changes are common in the cervical and lumbar spine, a combined compression of the neural contents of both areas would not be a rare entity, despite the fact that there has been no previous record.

Clumsy hands and the wide-based, stooped, somewhat jerky gait of elderly persons have been described throughout the ages. Likewise, neck and upper extremity pain is such a ubiquitous ailment of aging that "pain in the neck" has entered our language as a figure of speech. It was not until 1952, however, that it was recognized that the myelopathy and radiculopathy from cervical spondylosis constituted clinical disorders [17].

Degenerative disease of the cervical spine and its cartilaginous and ligamentous structures is known to be the most common cause of cervical cord and root dysfunction in patients older than 55 years [18]. Pathogenic mechanisms have been better defined [19-21], -"in part, through advances in neuroimaging, such as magnetic resonance (MR)

imaging, which has also simplified diagnosis and facilitated treatment [22-26].

In the majority of instances, spondylosis of the cervical or lumbar spine, or a combination of both, with compression of the neural elements, physical therapy, consisting of traction and external fixation, may affect some relief of symptoms. Spondylosis is essentially a degenerative disorder starting in the intervertebral disc and progressing with advancement in age to involve more than one disc [27].

II. MATERIALS AND METHODS

Study Design: Retrospective observational study.

Study Site: Vinayaka Neuro Multispeciality Centre, Warangal Telangana, India.

Study Period: The study was carried for six months from November 2020-April 2021 with the approval of Institutional ethics committee.

Sample Size: A total of 121 patients were recruited in our study.

Inclusion Criteria: The patients above 18 years of age with Spondylosis were recruited in our study.

Exclusion Criteria: Patients with Psychiatric disorder and Mental retardation, with symptoms of Covid 19, Children's and Patient with missing data were excluded from our study

Study Procedure: On admission all the demographics were collected. Based on CT/MRI findings the Spondylosis was classified as Cervical or Lumbar or Cervico-Lumbar Spondylosis. For measuring Pain severity, Neck pain and Disability scale (NPAD) and for Medication Adherence, Medication Adherence Rating Scale (MARS) were used.

STATISTICAL ANALYSIS RESULTS

Table 1

	Characteristic	Cervical Spondylosis (69)	Cervicolumbar Spondylosis (17)	Lumbar Spondylosis (35)	Total	P Value (x2,df)
Gender	Female	48	12	28	88(72.72%)	P<0.001 (11.7,1)
	Male	21	5	7	33(27.27%)	
Residence	Rural	45	10	25	80(66.115%)	p<0.029 (4.79,1)
	Urban	24	7	10	41(33.884%)	
SES	II	15	5	5	25(20.66%)	p<0.011 (6.46,1)
	III	12	3	4	19(15.70%)	
	IV	35	7	24	66(54.54%)	
	V	7	2	2	11(9.09%)	
Alcoholic	Yes	20	3	7	30(24.79%)	p<0.199 (1.65,1)
	No	49	14	28	91(75.20%)	
Pain Score	Score <4	21	11	18	50(41.32%)	p<0.001 (10.6,1)
	Score 4 and >4	48	6	17	71(58.67%)	
Use of OTCs	Yes	4	4	1	9(7.43%)	p<0.550 (0.358,1)
	No	65	13	34	112(92.56%)	

The data presented shows the demographic characteristic of the samples. Out of 121 cases regarding gender of samples male 33(27.27%), female 88(72.72%). The majority of samples residing in rural areas 80(66.115%) and

urban 41(33.884%). The socio-economic status from class II were found to be 25(20.66%) and class III is 19(15.70%), in class IV 66(54.54%), in class 11(9.09%). and in that data, we found alcoholics 30(24.79%) and NON-alcoholics were

found to be 91 (75.20%). Above table also describes the pain scores of spondylosis with score of <4 are 50 (41.32%) and pain score of 4 and >4 is

71 (58.67%). Among those patients some are used OTC medications are 9 (7.43%) and not used any OTC medication are 112 (92.56%).

Table 2: Effect of residence on medication adherence

Residence	Fare	Moderate	Total
Rural	19 (24.35%)	59 (75.6%)	78
Urban	18 (43.9%)	23 (56.1%)	41

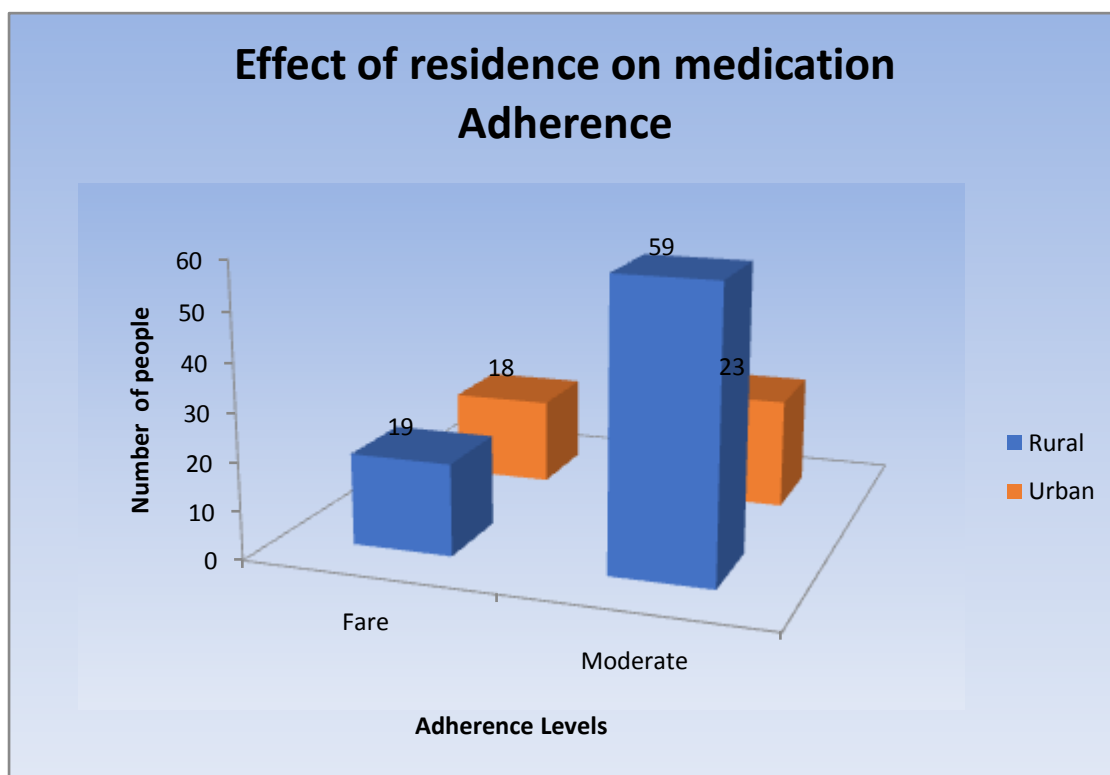


Figure 1: A study included a total of 121 spondylosis patients out of which highest proportion are from rural areas are moderately adherent. Where the lowest proportion are from urban areas are fairly adherent.

Table 3: Effect of gender on medication adherence

Gender	Fare	Moderate
Female	19(22.09%)	67(77.90%)
Male	18(54.54%)	15(45.45%)

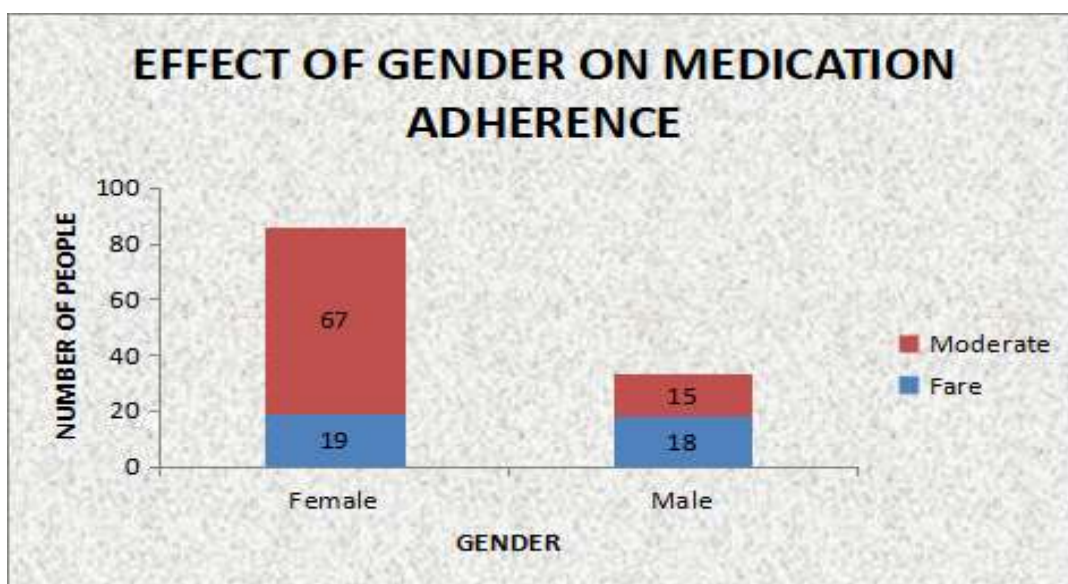


Figure 2 : The above graphs indicates the effect of gender on medication adherence out of which highest proportion are females with farely adherent and males are moderately adherent.

Table 4 : Socio-economic status

Occupation of Head of the Family	Socio-economic status	
	Fare	Moderate
Clerks	4	1
Craft and related trade workers	4	2
Elementary occupation	2	3
Plant and machine operators and assemblers		1
Professionals	7	6
Skilled agricultural and fishery workers	8	39
Skilled workers and shop keepers and market sales workers	5	6
technician and associate professional	5	11
Unemployed	2	13
Grand Total	37	82

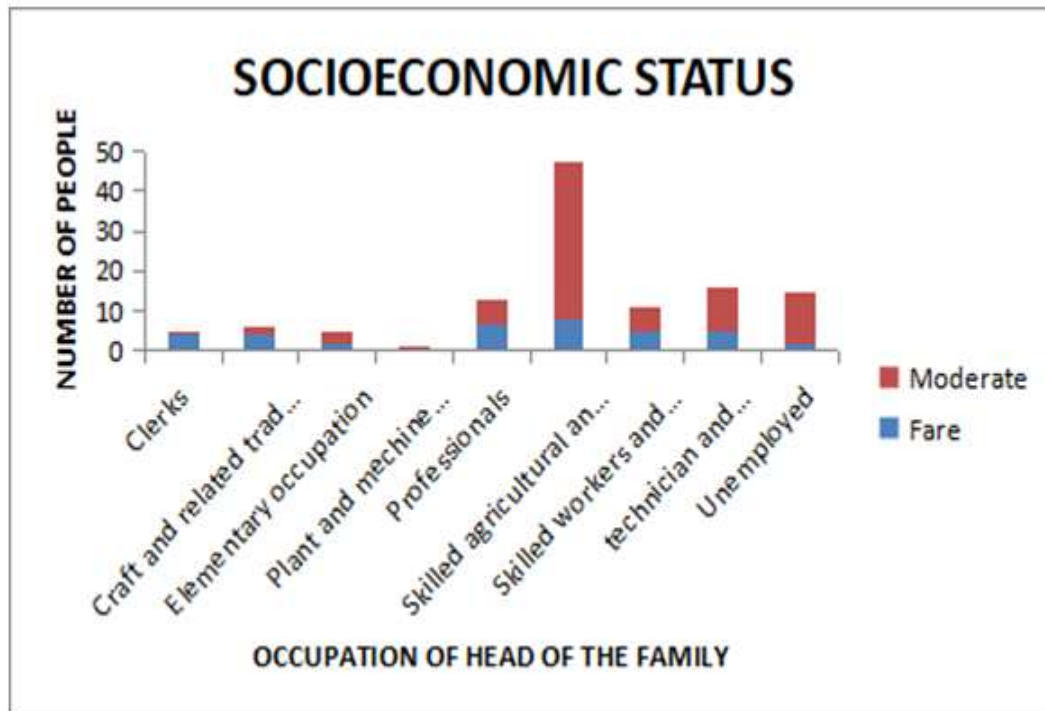


Figure 3 : The above graph indicates the socio-economic status of the patient from which clerks,craft related trade workers,plant and machine operators and assemblers and professionals are mostly are farely adherent and elementary occupation skilled agriculture andfishery workers, skilled workers and shop keepers, technician and associate professionals, unemployed are moderately adherent.

Table 5: Educational status

Education	FARE	MODERATE	Total
Literates	22(41.50%)	31(58.49%)	53
Illiterate	15(22.72%)	51(77.2%)	66

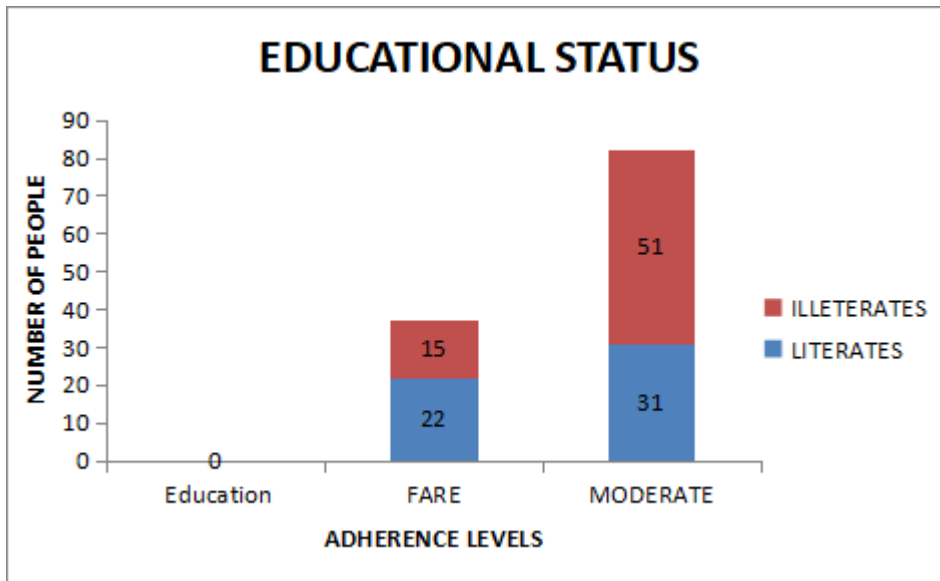


Figure 4 : The above graphs shows that patients with highest proportion are illiterates those are moderate and patients with lowest proportion of literates are fare.

Table 6:Smoking

SMOKING	FAIR	MODERATE
Yes	3(20%)	12(80%)
No	34(32.6%)	70(67.30%)

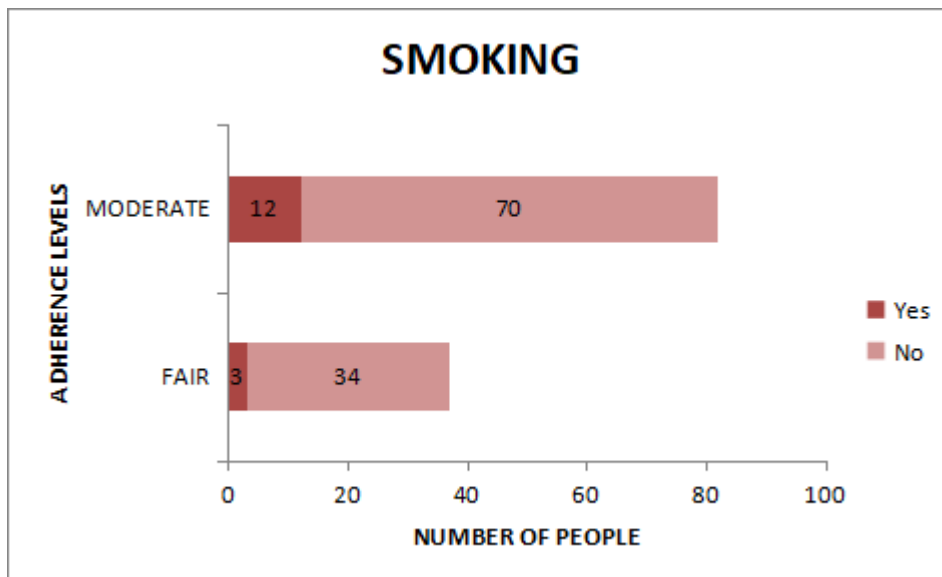


Figure 5: The above graph shows that the patients who are non-smokers are highest proportion and those are moderately adherent and patients who are smokers are lowest proportion are fairly adherent.

Table 7: Effect of alcohol on medication adherence

ALCOHOL	FAIR	MODERATE
Yes	9(42.85%)	12(57.1%)
No	28(28.5%)	70(71.4%)

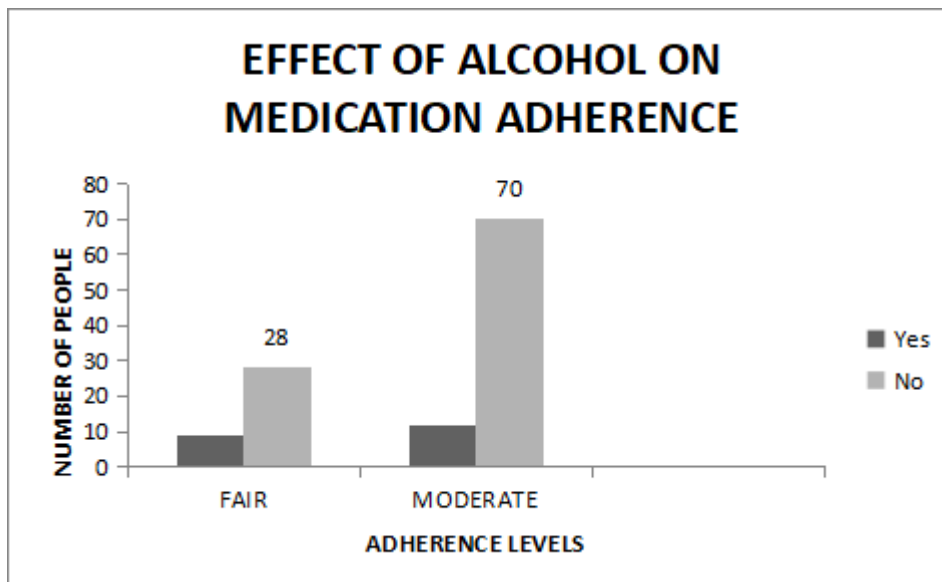


Figure 6 : The above graph indicates that patients who are alcoholics are in lowest proportion are moderately adherent and highest proportion of patients those who are non-alcoholics are fairley adherent.

Table 8 : Use of OTC medication

OTC USE	FAIR	MODERATE
Yes	2(22.2%)	7(77.7%)
No	35(31.8%)	75(68.1%)

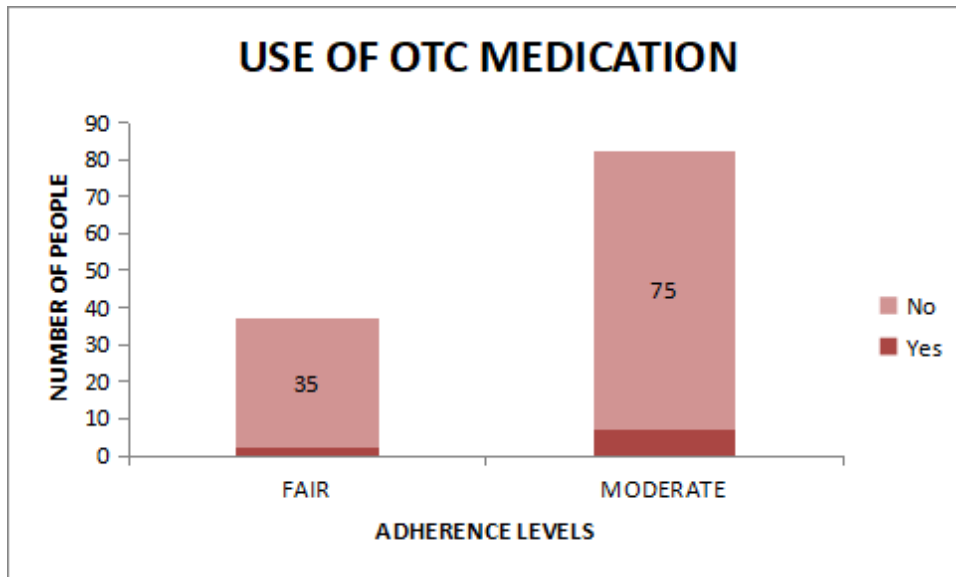


Figure 7: The above graph shows that patients who use otc medication are in lower proportion are fairly adherent and and patients not taking any otc medication are highest proportion are moderately adherent.

Table 9: Effect of socio-economic class on medication adherence

Socioeconomic Class	Fare	Moderate
Lower, Lower middle and Upper lower	24(25.5%)	70(74.4%)
Upper middle	13(52%)	12(48%)

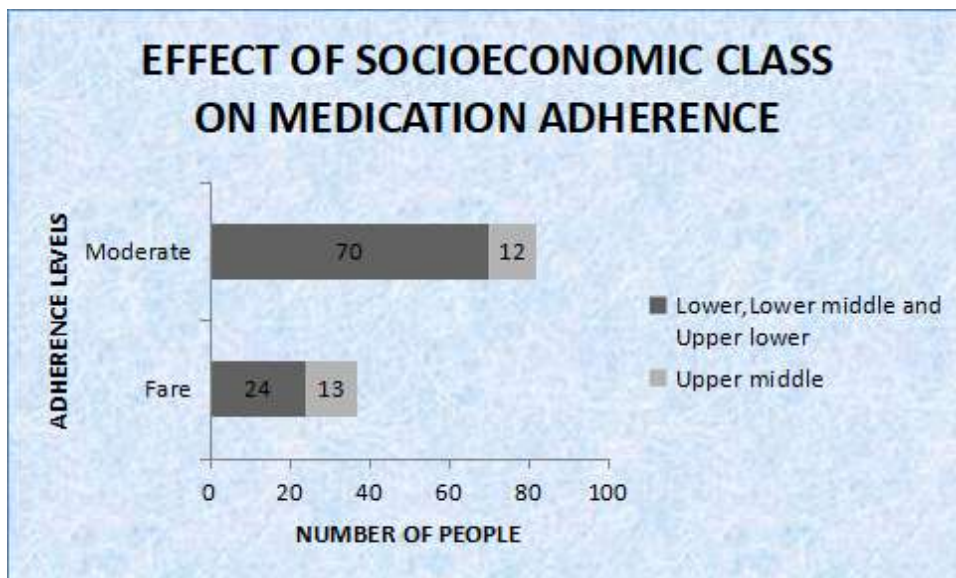


Figure 8: The above graph indicates the socio-economic class of the patient.patients those are in lower,lower middle and upper lower class are in highest proportion are moderately adherent and patients those who are in upper middle class are in lowest proportion are fairly adherent.

Table 10 : pain score

PAIN SCORE	FARE	MODERATE
<4	23(47.9%)	25(52.08%)
4 and >	14(19.7%)	57(80.2%)

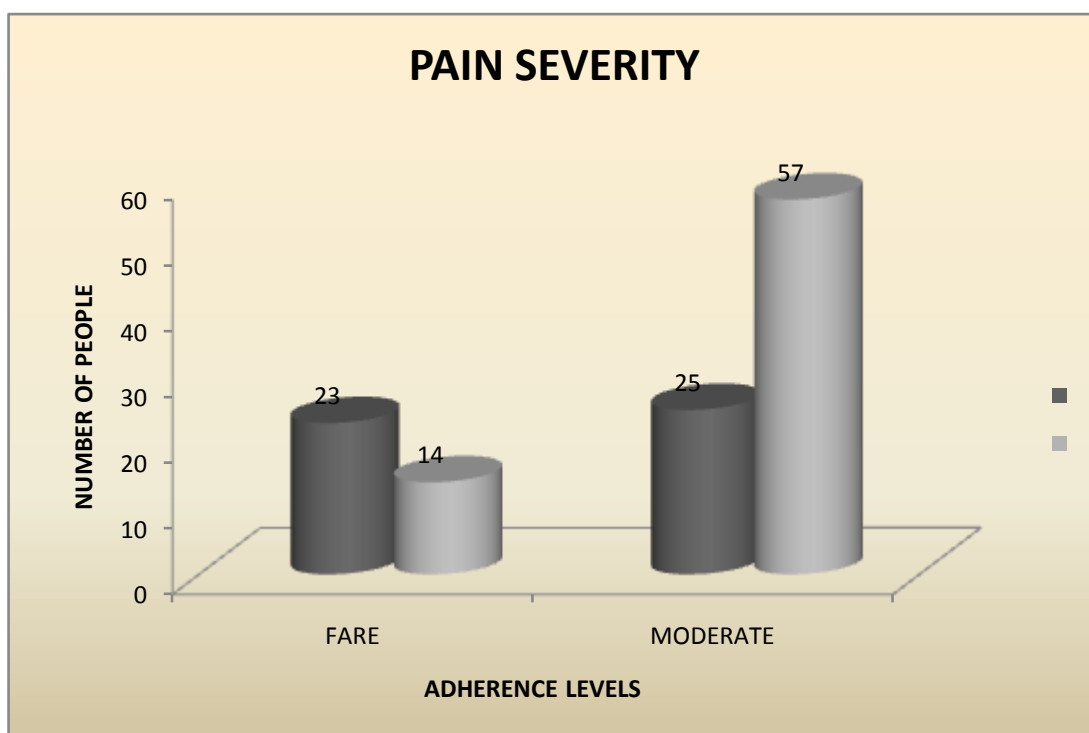


Figure 9:The above graphs shows that patients with the pain score of less than 4 are in lowest proportion are fairly adherent and patients with pain score of 4 and greater than 4 are in highest proportion are moderately adherent

III. DISCUSSION

Mahbub et al[95] considered head load carrying porters as a risk group for developing cervical spondylosis but Bista[96] reported his findings contrary to this and concluded that prevalence of cervical spondylosis is significantly lesser in porters than in non-porters.

It is evidently clear from the above discussion that the ambiguity in identifying the definite risk factors in diagnosis of cervical spondylosis still persists. Nearly all of the above studies were designed to find out the anatomical variations and their effects in either different race, gender, age.

We did not find any study that has compared the patient variables and their effect as

causative or risk factors in cervical Spondylosis. We had tried to analyze these factors singly or together as a group as risk factors of cervical spondylosis. Our result shows that there was no relation between vertebral dimensions and clinical groups.

IV. CONCLUSION

We conclude that variations in canal body ratio, canal diameter, vertebral body diameter of the cervical vertebrae and race, weight and height of the patients are not the risk factors of cervical spondylosis. Age, gender and occupation are the only risk factors for having cervical spondylosis. The identification of risk factors would help clinicians to identify the patient at risk and

implement appropriate preventive and management steps before the neurological changes appear. Moreover, assessing various morphological dimensions of the cervical vertebrae by plain radiography or CT or MRI seem to be unnecessary and escalation in treatment cost can be avoided.

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