

# A Study of Distribution of Orthopaedic Morbidities among Outdoor Patients in a Medical College in Bihar

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## Abstract

**Background:** Pattern and prevalence of orthopaedic morbidities varies from region to region, due to difference in environmental, racial and geographic factors. Orthopaedic Outpatient Department (OPD) is an important part of health care system. This study was done to find out the orthopaedic morbidities in OPD of a tertiary care centre in Bihar. **Subjects and Methods:** It was an observational, cross-sectional study carried out in the outpatient department of ANMMCH, Gaya, Bihar. All the new patients more than 18 years of age were studied for one year. Prescriptions were collected from patients. No follow up of prescription was done. **Results:** 800 prescriptions were analysed. Male patients (63.7%) attended more than female patients (36.3%). Majority of patients came from 18-30 years age group. Low back pain was most common (28.9%) morbidity followed by osteoarthritis (11.9%), cervical spondylosis (8.7%). Orthopedic morbidities are mostly contributed by trauma (38.75%). **Conclusion:** Low back pain is the common problem among patients attended Orthopaedic OPD. Larger nationwide community based studies are required to know the extent of the orthopaedic morbidities and formulate better health policies.

**Keywords:** Morbidities, Low Back Pain, Orthopaedic OPD, Trauma.

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## Introduction

According to WHO, morbidity is any departure, subjective or objective, from a state of physiological well being. It is equivalent to terms like sickness, illness, disability etc. The three aspects of morbidity which are commonly measured are frequency, duration and severity.<sup>1</sup> Orthopaedic department is an important part for trauma care service in any tertiary care centre like a medical college. It is responsible for treatment of fracture and soft tissue injuries in emergency basis. In outpatient department (OPD) patients come with various problems like congenital deformities, musculoskeletal pain, and soft tissue injuries etc. After getting emergency treatment most of the trauma patients need follow-up of their treatment through OPD basis.<sup>2</sup> Orthopaedic OPD plays an important role of health care system. The study of distribution of illness or pattern of diseases may be a useful to know the age, sex, occupation, socio-economic factors, demographic profile, racial, in patients with bone and joint disorders.<sup>3</sup> Distribution of illness may be differed due to environmental factors also. Many literatures show that low levels of vitamin D is noted in young adults, hospital personnel, postmenopausal women, and even school children also. High incidence of vitamin D insufficiency and deficiency likely exists across all age groups among orthopaedic patients. Screening and treating hypovitaminosis D appears to be important in this patient population.<sup>4</sup> In another study it was seen that low

back pain is very frequently seen in among the Information Technology Professionals. In this study, more than 50% of them reported Low Back Pain. Neck pain, Shoulder, Upper back and wrist are the next most frequent types of Musculoskeletal Disorders.<sup>5</sup>

Distribution of illness is important predictor of health in that particular region from where patients generally attending the OPDs. The distribution of illness is an important factor for selection of essential drugs and planning of budget for treatment on that particular sector.<sup>6</sup> The objective of this study was to find out the age and sex distribution of patients in orthopaedic OPD and to assess the morbidities associated with them.

## Subjects and Methods

The present study was an observational, cross-sectional study carried out in the outpatient department of ANMMCH, Gaya, Bihar. The study was conducted after getting permission of Institutional Ethics Committee. The patients who had willingly participated were enrolled on the basis of subject selection criteria. All the new patients more than 18 years of age, of either sex who came in orthopaedic OPD and gave permission of consent included in this study. However, patients who need emergency treatment (fracture, soft tissue injuries etc) were excluded from the study. Pregnant, lactating mother, unconscious patients and patients with history of addiction were also excluded from

the study. Study duration was of one year from January, 2018 to December, 2018. Prescriptions were collected from patients attending the orthopaedics OPD. No follow up of prescription was done. Data were collected from prescription and analysis was done after completion of one year. The parameters included gender distribution, age of the patients, type of morbidities, history of any trauma was collected from prescription.

The data entry and the statistical analysis were performed by using Microsoft Excel and the Statistical Package of Social Sciences (SPSS), Windows version 14.0 software.

## Results

In this study, 800 prescriptions were analysed in a span of one year. There was no follow-up of patients. The age and gender wise distribution of patients is shown in [Table 1]. Male patients (63.7%) attended more than female patients (36.3%). Majority of patients came from 18-30 years age group (32%), and least from more than 60 years age group (9.5%).

**Table 1: Age and gender wise distribution of patients (N=800).**

Age range	Gender				Total (N=800)	
	Male (N=510)		Female (N=290)		n	%
	n	%	n	%		
18-30 Years	164	32.2%	92	31.7%	256	32%
31-40 Years	101	19.8%	57	19.7%	158	19.7%
41-50 Years	118	23.1%	65	22.4%	183	22.9%
51-60 Years	80	15.7%	47	16.2%	127	15.9%
> 60 Years	47	9.2%	29	10.0%	76	9.5%
Total	510	63.7%	290	36.3%	800	100%

**Table 2: Distribution of patient according to morbidities (N=800)**

Morbidity	N	%
Low back pain	231	28.9%
Cervical spondylosis	70	8.7%
Osteoarthritis	95	11.9%
Shoulder pain with restriction of movement	57	7.1%
Clavicular fracture	9	1.1%
Elbow pain with swelling	19	2.4%
Forearm pain and swelling	47	5.9%
Wrist joint pain and swelling	59	7.4%
Colles fracture	13	1.6%
Fingers pain and swelling	45	5.6%
Hip joint pain	11	1.4%
Lower limb pain and swelling	47	5.9%
Foot pain and swelling	25	3.1%
Ankle pain and swelling	31	4.3%
Scaphoid fracture	7	0.9%
Polyarthrits	34	4.2%

[Table 2] shows distribution of morbidities among study participants. It was seen that out of 800 patient's low back pain was most common (28.9%) followed by osteoarthritis (11.9%), cervical spondylosis (8.7%). Fracture patients came rarely in OPD.

Orthopedic morbidities are mostly contributed by trauma. We searched history of trauma among patients. Distribution of patients where trauma may be a contributing factor is presented in [Table 3]. It is seen that incidence of trauma as a contributing factor is seen in 38.75% (310/800) patients. The incidence of trauma is more commonly seen in 18-30 years age group (35.8%) and least in more than 60 years age group (6.8%).

**Table 3: Age and sex wise incidence of trauma (N=310)**

Age range	Gender				Total (N=800)	
	Male (N=208)		Female (N=102)		n	%
	n	%	n	%		
18-30 Years	74	35.6%	37	36.3%	111	35.8%
31-40 Years	42	20.2%	20	19.6%	62	20.0%
41-50 Years	37	17.8%	19	18.6%	56	18.1%
51-60 Years	40	19.2%	20	19.6%	60	19.4%
> 60 Years	15	7.2%	6	5.9%	21	6.8%
Total	208	67.1%	102	32.9%	310	100%

## Discussion

The morbidity pattern of patients coming to the orthopaedic OPD of any tertiary care setup differs in different regions depending on the prevailing environmental and demographic conditions. We have conducted the study to look into the morbidities of patients attending our orthopaedic OPD. We included a total of 800 patients attending the orthopaedic OPD of ANMMCH, Gaya for a duration of twelve months i.e. between January– December, 2018.

Young male patients attended more than female patients. This might be due to the fact that the male population is involved in various outdoor activities and are mainly affected by orthopaedic ailments.<sup>[7]</sup> Kumar et al found similar results their study that male patients attended orthopaedics OPD more than females. Majority patients came from 18-30 years of age group.<sup>[8]</sup>

In this study, low back pain was most common followed by osteoarthritis. Backache (62%) and osteoarthritis (51.6%) were common orthopaedic problems reported in a study by Avachat et al in rural Maharashtra among postmenopausal females.<sup>[9]</sup> Low backache has emerged as a significant cause of morbidity in developing countries at large. The patients are mostly females, sustaining different pathology following different physiological change and faulty job posture.<sup>[10]</sup> Low backache is an expensive issue due to necessary spending toward repeated treatment, as well as the need for additional professional and personal support. LBP is considered to be most common, and costly disabling musculoskeletal condition. This high expenditure is largely due to numbers of lost workdays considered an indirect cost as well as direct treatment cost.<sup>[11]</sup> Osteoarthritis is also a common condition in India. A study total was done in Tamilnadu related to osteoarthritis. Out of 1986 adult respondents interviewed, 27.1% had OA of knee. Age more

than 50 years, female gender, tobacco usage, illiteracy, lower socioeconomic class, positive family history of OA, diabetes, and hypertension were found to be associated with OA knee ( $P < 0.05$ ).<sup>[12]</sup>

It was seen in this study that incidence of trauma was a contributing factor in 38.75% (310/800) patients. Also, trauma was more common in male patients and in age group 18-30 years. A study done in Taiwan from 2002 to 2011 showed that orthopedic fractures were the most common injuries among inpatients due to road traffic accidents in They were frequently associated with other injuries especially head injuries. A significant relation to male gender, middle age, low income, and admission to high-level hospital to the observed fracture patterns was observed.<sup>[13]</sup>

In this study, Road Traffic Accidents (RTA) were demonstrated to be a leading cause of bone fractures. A study in Mandya, Karnataka also found similar results. The emergency service provides the first impression on the patients and their attendances which must be a positive one. Quick and competent care can save lives and also reduce the severity and duration of illness. Road safety regulations should be strengthened and enforced. Manpower should be developed; vital infrastructures such as diagnostic and therapeutic facilities should be provided and upgraded on a regular basis.<sup>[14]</sup>

A study done by Pal CP et al states that there is an alarmingly high incidence of vitamin D insufficiency and deficiency likely exists across all age groups among orthopaedic patients. Risk factors for low vitamin D include lack of exposure to sufficient sunlight, inadequate dietary intake and supplementation, and other factors, including obesity, age, medication use, sunscreen use, covering all skin with clothing and skin pigmentation. All orthopaedic patients should be screened as part of their preoperative workup. Nevertheless, public awareness of vitamin D deficiency needs to be efficiently raised by dedicated, collaborative efforts of concerned clinicians and public health workers.<sup>[15]</sup>

#### Limitations

This study tried its best to find the morbidity pattern in orthopaedic OPD. But obviously like other study we had also few limitations. We didn't include the paediatric age group, so we missed a big portion of population. Also, we didn't include the emergency patients.

#### Conclusion

Low back pain is the common problem among patients attended Orthopaedic OPD. Larger nationwide community based studies are required to know the extent of the orthopaedic morbidities and formulate better health policies.

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