ORIGINAL ARTICLE

Disease Profiles and Prescription Patterns of Patients of Orthopaedic Outpatient Department of Enam Medical College Hospital, Savar, Dhaka

Imamuzzaman M[1], Saleheen MMU[2], Mukta KF[3], Goni MO[4], Saleh AZM[5]

ABSTRACT

Background: Due to numerous reasons, there is a significant workload at the orthopaedic OPD. Due to diversity of disease pattern, physicians prescribed different drugs depending on the causes, which need to be evaluated regularly.

Methods: A descriptive type of cross-sectional study was conducted in Enam Medical College, Savar, Dhaka, over a period of 6 months that ended in April 2025, among the patients who fulfilled the inclusion and exclusion criteria. The study location was selected by convenience sampling, while respondents were selected by simple random sampling. An interviewer-administered, pre-tested semi-structured questionnaire was used for data collection by the principal investigator and co-investigators. Data were analyzed anonymously by using SPSS with privacy and confidentiality.

Result: Majority 153(36.3%) of the current study respondents were between 40 to 60 years, while a significant number 218(51.6%) were female. More than one-third 141(33.4%) were housewives, 125(29.6%) were service holders, and 74(17.5%) were involved in farming and agricultural sectors. More than two-thirds 289(68.5%) were from rural areas, and a majority 284(67.3%) had no history of trauma. Of patients, 79(18.7%) had back pain, 57(13.5%) suffering from osteoarthritis, 61(14.5%) had fracture, 37(8.8%) diagnosed as tendinopathies, and 31(7.3%) had cervical spondylosis. Of patients, 146(34.6%) were suffering from associated comorbidities like diabetes, hypertension, asthma, and hypothyroidism. Almost cent 417(98.8%) had been treated with oral drugs, and 237(56.2%) had four to five drugs in their prescriptions, while all drugs were mentioned in brand name. Patients were mainly treated with NSAIDs, anti-ulcer drugs, multivitamins & minerals formulations, skeletal muscle relaxants, antibiotics, etc.

Conclusion: Patients attending in orthopaedic OPD were usually middle-aged people, while most of them were female. Considering occupation, a great proportion were housewives, service holders, and involved in farming and agricultural sectors. A majority were from rural areas and had no history of trauma. Most of them were suffering from back pain, osteoarthritis, fractures, and tendinopathies. At OPD, they were mainly treated with NSAIDs and skeletal muscle relaxants. In addition, anti-ulcer drugs, vitamins & minerals formulations or antibiotics etc. were adjuvant.

Key words: Orthopaedics-OPD, NSAIDs and skeletal muscle relaxants.

SZMCJ, July 2025; Vol. 44(2): 81-86.

INTRODUCTION

Patients who visits to seek care in the orthopaedic OPD, requires more time to heal due to the complexity of the presenting problems, though the presenting problems of the patients may vary depending on the geographical location.[1] However, even our surrounding environments had factors that can influence the disease pattern. Even a lower vitamin level can impose a significant effect on the disease pattern of the general population.[2] Despite geographical and environmental factors, an individual's way of living also contributes to their disease pattern. A recent study conducted in India found that people who led a sedentary lifestyle had a higher chance of developing lower back pain than other people. It was also revealed that those people had a 50% higher chance of developing multiple joint pains.[3] A study conducted by Petridou E and team indicated that a considerable number of patients who attended the orthopaedic OPD were suffering from multiple joint pain, back pain, as well as a history of trauma.[4] Another researcher from India found that the majority of the care seekers of orthopaedic OPD attended the OPD due to the complaints

* 1. Dr. Muhammad Imamuzzaman, Registrar of Orthopaedic Surgery, Enam Medical College, Dhaka, Bangladesh. E-mail: muhammadimamuzzamanreaz@gmail.com; Phone: +8801731148006.
2. Dr. Md. Monir Us Saleheen, Assistant Professor of Orthopaedic Surgery, Enam Medical College, Dhaka, Bangladesh.
3. Dr. Kanij Fatema Mukta, Kyrgyz State Medical Academy, Bishkek, Kyrgyzstan.
4. Dr. Mohammad Osman Goni, Assistant Professor of Orthopaedic Surgery, Enam Medical College, Dhaka, Bangladesh.
5. Dr. Abu Zafar Md Saleh, Assistant Professor of Medicine, Enam Medical College, Dhaka, Bangladesh.
(* Address for Correspondence)

of multiple joint pain, including back and neck, arthritis, osteoporosis, neuropathy, soft tissue injury, and another different joint problems.[5] Another study also revealed that trauma patients may have associated injuries like head, chest, abdominal, genitourinary or even pelvic organ injury.[6] One of the main differences between other departments with orthopaedic OPD is that patients may present with fractures of different body parts, requiring emergency management and taking a longer time to heal the broken bone. Unlike other diseases, patients with fractures have much more restriction in their everyday routine, as well as have significant impact on their work life due to their disease condition.[7,8] Depending upon the condition of the patients, it was found that there are a few common drugs which are frequently used to treat patients who are attending the orthopaedics OPD. Drugs like non-steroidal anti-inflammatory drugs (NSAIDs), antibiotics, and anti-ulcer drugs are more frequently prescribed to patients.[9] In countries like Bangladesh, where a significant proportion of people are not financially stable, the additional cost for treatment imposed an extra financial burden on them.[10] So, it is important to choose the drug rationally because excess use of drugs causes increased financial burden, as well as may result in therapeutic failure.[11] Because of that, it is crucial to monitor the prescription patterns in healthcare facilities to ensure maximum benefit for the patients. It also plays an important role in verifying the rational use. So, to improve the healthcare delivery, evaluation of drug utilization in the OPD in different departments, especially in the orthopaedic department, is important.[12] The rational use of drugs according to the patient's need is vital because it will help the healthcare supply chain to ensure the accessibility and availability of the drugs.[13,14] The prescription pattern analysis will also help the physician to become more aware of their choice of drugs in their everyday practice.[15]

METHODS & MATERIALS

A descriptive cross-sectional study was carried out among the patients who attended the OPD Department of Orthopaedics. A total of 422 patients were selected for the study through simple random sampling. This current study was conducted in Enam Medical College and Hospital, and the study location was selected through convenience sampling. The study duration was 6 months that ended in April 2025. The principal investigator and co-investigators collected the data through an interviewer-administered, semi-structured questionnaire. The questionnaire was initially developed in English and then translated into Bangla for better understanding. Finally, the pretested questionnaire was used for data collection. At the beginning of the data collection, the purpose of the study was explained to the study respondents, and informed consent was obtained. The participation in the current study was completely voluntary without any financial benefit. The confidentiality and anonymity were maintained throughout the study. Patients were assured that they can withdraw from the study at any time they desire without explaining any reasons. Every completed questionnaire was reviewed for completeness, and data quality was strictly assured. The data were entered, coded and analyzed by using SPSS. Depending on the nature, data was presented through tables and figures.

RESULTS

In the current study, a great number 153(36.3%) were between 40 to 60 years, with a mean age of 47.6 ± 13.8 years. Considering the gender of the study participants, more than half 218(51.6%) were female, and 204(48.4%) were male. As shown in table 1, around one-third 141(33.4%) were house wife, 125(29.6%) were service holders, 74(17.5%) were involved in farming and agricultural sectors, 31(7.3%) were construction works, 23(5.5%) were students, and 28(6.7%) were involved in other occupations. The majority of the 393(93.1%) of the current study were educated, and only 29(6.9%) were not educated.

Table 1: Respondents by Occupation

Occupation	Frequency (%)
House wife	141 (33.4%)
Service holders	125 (29.6%)
Farming & Agricultural workers	74 (17.5%)
Construction works	31 (7.3%)
Students	23 (5.5%)
Other	28 (6.7%)

Regarding the area of current residence, Figure 1 shows that 289(68.5%) were from rural areas, and 133(31.5%) were from urban areas.

It was found that nearly one-third 138(32.7%) of the patients had a history of trauma, but a significant number 284(67.3%) had no such history. Of patients who attended the orthopaedics OPD, figure 2 shown that 79(18.7%) suffered from back pain, 57(13.5%) had

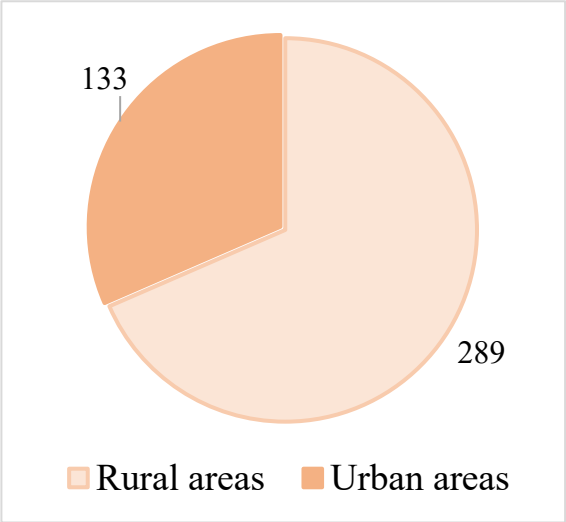

Figure 1: Respondents by areas of residence.

complaints about osteoarthritis, 61(14.5%) had fracture of different bones, 37(8.8%) had tendinopathies, 31(7.3%) diagnosed as cervical spondylosis, 28(6.6%) had nonspecific body aches, 23(5.5%) complained about shoulder-related problems, 18(4.3%%) diagnosed with ligamentous or sports injuries, and 21(5.5%) had other medical conditions.

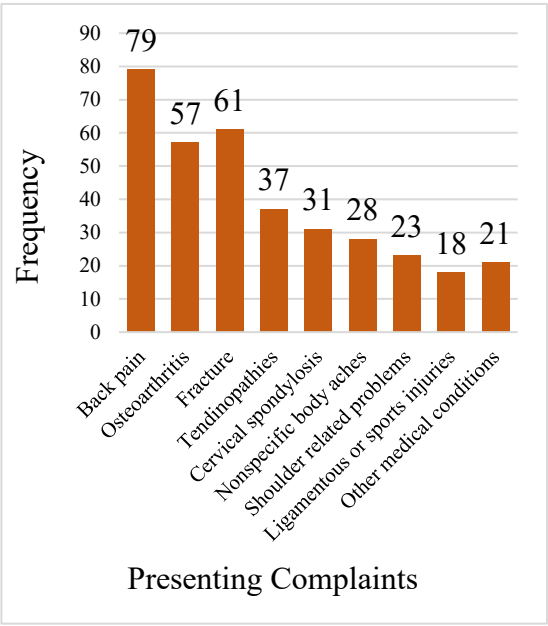

Figure 2: Respondents by presenting complaints

Among the 61 patients who had a fracture, a great proportion 52(85.2%) had a simple fracture, and 9(14.8%) had a compound fracture. Regarding known comorbidities, 276(65.4%) had no comorbidities and 146(34.6%) had known comorbidities. Of care seekers, 71(48.6%) were suffering from diabetes, 64(43.8%) known to have hypertension, 32(21.9%) were suffering from asthma, and 17(11.6%) diagnosed as hypothyroidism, and 12(8.2%) had other kind of comorbidities.

Among the respondents of the current study, 417(98.8%) had been prescribed oral drugs, 63(14.9%) had topical drugs, 19(4.5%) had intravenous drugs. As mentioned in Table 2, in this current study, it was revealed that 28(6.6%) had advised a single drug, 73(17.3%) had prescribed two to three drugs, 237(56.2%) had four to five drugs, and 84(19.9%) had six or more drugs in their prescriptions.

Table 2: Respondents by number of prescribed drugs.

Number of drugs	Frequency (%)
Single drug	28 (6.6%)
Two to three drugs	73 (17.3%)
Four to five drugs	237 (56.2%)
Six or more drugs	84 (19.9%)

As in table 3, regarding the common categories of drugs prescribed, it was found that 286(67.8%) had prescribed NSAIDs, 251(59.5%) had anti-ulcer drugs, 117(27.7%) had advised multivitamins & minerals formulations, 74(17.5%) had prescribed skeletal muscle relaxants, 41(9.7%) had suggested antibiotics, and 68(16.1%) had other types of medications. Of 286 respondents, majority 83(29.1%) had prescribed aceclofenac, 71(24.8%) had advised naproxen, 65((22.7%) were suggested diclofenac, 26(9.1%) had prescribed ketorolac, 20(6.9%) had sulindac, 14(4.9%) had etoricoxib, and 7(2.5%) had advised other formulation of NSAIDs. Of 251 patients who advised anti-ulcer drugs, 85(33.9%) had suggested esomeprazole, 62(24.7%) had lansoprazole, 38(15.1%) had prescribed ranitidine, 29(11.5%) had omeprazole, and 37(14.8%) had other form of medications. Of respondents who prescribed antibiotics, 14(34.1%) had prescribed cefuroxime, 9(21.9%) had flucloxacillin, 6(14.6%) advised linezolid, 5(12.2%) had clindamycin, and 7(17.2%) had other form of antibiotics.

Table 3: Respondents by prescribed medicine

Medicine	Frequency (%)
NSAIDs	286 (67.8%)
Anti-ulcer drugs	251 (59.5%)
Multivitamins & minerals	117 (27.7%)
Skeletal muscle relaxants	74 (17.5%)
Antibiotics	41 (9.7%)
Others	68 (16.1%)

*multiple response

DISCUSSION

Of 422 patients, the majority 15(36.3%) were between 40 to 60 years, with a mean age of 47.6 ± 13.8 years. This is vindicated by Khajuria S. and team found that the majority of their study respondents were between 41 to 60 years old.[16] Regarding gender, it was found that 218(51.6%) were female and 204(48.4%) were male. A recent study conducted by Hossain MA., and associates found that around 40% of their respondents were female, and 60% were male.[17] Of 422, 141(33.4%) were house wife, 125(29.6%) were service holders, 74(17.5%) were related to farming and agricultural sectors, 31(7.3%) were construction works, 23(5.5%) were students, and 28(6.7%) were had other occupations. Regarding occupation, Dhivya K and co-investigators found that around 42.7% were housewives, 35% were farmers in occupation, 3.07% were students, 2.7% were employees, 7.3% were in business, 3.85% were self-employed, 3.07% were labourers, and around 2.31% were retired.[18] Of the study respondents, 29(6.9%) were uneducated, and 393(93.1%) were educated. This is in line with the study conducted by Sultana F, *et al*., which found that 17.5% were uneducated, 37.5% had primary level education, and 32.5% had secondary level of education.[19] Considering the area of residence, 289(68.5%) were from rural areas, and 133(31.5%) were from urban areas. This is supported by the study conducted by Gupta S and team, where 72% were from rural areas and 28% were residents of urban areas.[20]

Regarding the history of trauma, 138(32.7%) had a history of trauma, and 284(67.3%) had no history of trauma. This aligns with a study conducted in West Bengal, where 38.5% had a history of trauma, while more than three-fifths, 61.5% had no history of trauma.[21]

Of the respondents who visited the OPD, 79(18.7%) complained about back pain, 57(13.5%) had osteoarthritis, 61(14.5%) diagnosed with fracture of different bones, 37(8.8%) had tendinopathies, 31(7.3%) diagnosed as cervical spondylosis, 28(6.6%) were suffering from nonspecific body aches, 23(5.5%) had shoulder-related problems, 18(4.3%%) had ligamentous or sports injuries, and 21(5.5%) were suffering from other medical conditions. This is more or less supported by the study conducted by Kumar A and team, where they found that 29% had low back pain, 9% were suffering from cervical spondylosis, 12.5% were diagnosed as osteoarthritis, 7% had shoulder pain with restriction of movement, 1% had a clavicle fracture. 2.5% had elbow pain and swelling, 6% suffered from forearm pain and swelling, 7.5% had wrist joint pain and swelling, 1.5% had a Colles fracture, 5.5% had finger pain and swelling, 1.5% had hip joint pain, 6% had lower limb and swelling, 3% suffered from foot pain and swelling, 4% had ankle pain and swelling, 1% had scaphoid fracture, and 3% had polyarthritis. [21] The majority of the current study respondents 52(85.2%) had simple fracture while 9(14.8%) had visited the orthopedic OPD with compound fracture. This is vindicated with the study findings of Lakshmeesha T and Praveen G, where they found that 72% of their study respondents had a simple fracture, and more than one-fourth 28% had a compound fracture. [6] Regarding associated comorbidities, 276(65.4%) had no known comorbidities and 146(34.6%) had comorbidities. Of 146 patients, 71(48.6%) had diabetes, 64(43.8%) had hypertension, 32(21.9%) had asthma, and 17(11.6%) had hypothyroidism, and 12(8.2%) had other comorbidities. Another study led by Gupta R found that around 61.5% of their study respondents had no associated comorbidities, 11.65% had diabetes, 16.5% had hypertension, 6.02% had hypothyroidism, and the rest of the respondents had other comorbidities.[4] Almost all of the respondents of the current study had 417(98.8%) had been prescribed oral drugs, 63(14.9%) had topical drugs, 19(4.5%) had intravenous drugs. A recent study conducted in orthopaedic surgery found that 92% advised oral drugs, 79.3% had topical drugs, 6.8% had intra-articular medication, 6.8% had intramuscular drugs, 1.4% had subcutaneous drugs, and only 0.1% had intravenous drugs.[22] Another study by Kulkarni MA and team found that 88% patients were prescribed oral drugs, 11.3% had parenteral drugs, and only 0.7% had topical drugs.[23]

Regarding the number of drugs, it was found that 28(6.6%) had been prescribed a single drug, 73(17.3%) had been prescribed two to three drugs, 237(56.2%) had been prescribed four to five drugs, and 84(19.9%) had

six or more drugs in their prescriptions. A recent study conducted by Gujar A and team found similar results, where 3.8% had advised one drug, 2.5% had two drugs, 10% had three drugs, 21.2% had prescribed four drugs, 29.4% had five drugs, and 33.2% had six or more drugs. [24] Of the current study participants, all had been prescribed brand-name. This is not supported by Mohammed BS and associates, who found that in Ghana, around 53.2% had been prescribed in generic name. This might be attributed to the small sample size and purposive selection of the study area. [25] Regarding the common categories of drugs prescribed in the orthopedics OPD found that 286(67.8%) had advised NSAIDs, 251(59.5%) had advised anti-ulcer drugs, 117(27.7%) had prescribed multivitamins & minerals formulations, 74(17.5%) had skeletal muscle relaxants, 41(9.7%) had suggested antibiotics, and 68(16.1%) had other types of drugs. This is more or less consistent with the study conducted by Shankar PR, and team found that 59.9% had NSAIDs, 8.5% advised multivitamins & minerals, 5.7% advised anti-ulcer drugs, 4.8% had been prescribed centrally acting muscle relaxants, 4% had benzodiazepines, 3.4% had anabolic steroids, and 13.6% had other types of drug formulations. [15]

Of 286(67.8%) patients who prescribed NSAIDs, a significant number 83(29.1%) had aceclofenac, 71(24.8%) had prescribed naproxen, 65((22.7%) were advised diclofenac, 26(9.1%) had ketorolac, 20(6.9%) had sulindac, 14(4.9%) had etoricoxib, and 7(2.5%) had advised other formulation of NSAIDs. A recent study conducted in India found that 1.03% prescriptions had aceclofenac, 43.49% had diclofenac, 8.22% had ibuprofen and other formulations of drugs. [26] Of 251(59.5%) patients advised anti-ulcer drugs. Of 251 patients, 85(33.9%) had esomeprazole, 62(24.7%) advised lansoprazole, 38(15.1%) had advised ranitidine, 29(11.5%) had omeprazole, and 37(14.8%) had other form of anti-ulcer drugs. This is vindicated by a study conducted by Syed Ilyas S, and team found that patients were mainly treated with nizatidine, omeprazole, lansoprazole, ranitidine and pantoprazole.[27] Of the current study, 41(9.7%) were advised to have antibiotics. Of them, 14(34.1%) had prescribed cefuroxime, 9(21.9%) had flucloxacillin, 6(14.6%) advised linezolid, 5(12.2%) had clindamycin, and 7(17.2%) had other form of antibiotics. A recent study found that around 40% of patients were advised cefixime or cefpodoxime or cefuroxime, 30% had been prescribed a combination of amoxicillin and clavulonoic acid, 11% had clindamycin, 11% had linezolid, and 8% had ofloxacin.[28]

Conclusion

Those who attended the orthopaedic OPD majority were middle-aged female, while most of them were housewives, service holders, farmers and agricultural workers, construction workers, students, etc. Majority of them were residents of rural areas. A small fraction had a history of trauma. They were suffering from back pain, osteoarthritis, fractures, tendinopathies, cervical spondylosis, nonspecific body aches, shoulder-related problems, ligamentous or sports injuries, and other medical conditions. Regarding fractures, simple fractures were more common with no comorbidity for most of them. Regarding co-morbidities, diabetes, hypertension, asthma, and hypothyroidism were more common. Almost all patients were treated with oral medications, and more than half were treated with four to five drugs. patients were mainly prescribed NSAIDs and muscle relaxants; anti-ulcer drugs, vitamins & minerals and antibiotics were the adjuvants.

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Peer reviewer:

Dr. Md. Rezaul Karim
Associate Professor of Orthopaedics
Shaheed Ziaur Rahman Medical College
Bogura, Bangladesh.