Study of Risk Factors and Drug Utilization Pattern in Arthritic Patients in a Tertiary Care Hospital

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ABSTRACT

AIM- Study of Risk factors and Drug Utilization Patterns in Arthritic Patients in a tertiary care Hospital. The age, sex, racial/ethnic group, marital status, comorbid conditions, and economic resources (education, income, wealth, health insurance), but not reporting arthritis.

Place and Duration of Study- Department of Pharmaceutical Sciences, Shri Mahant Indresh Hospital Dehradun and the duration of the study is 6 months.

Method- It is a Cross sectional study, Data were analyzed from out of 100 Patients interviewed in the Orthopedics department of Shri Mahant Indresh Hospital, Patel Nagar Dehradun (U.K.).

Result- Older adults are significantly more likely to have an arthritis disease, in which women's 58 (58%), are the maximum number of patients, in which the number of hilly region patients was (28%) and plain residential area patients were 38 (38%). According to the present study knees 25 (25% patients) and legs and ankles 42 (42%) are the mostly affected area in arthritis disease. The drugs which are mostly prescribed are branded drugs are 505 (72%) because of the quality of branded medicine which have a greater impact might be better than the generic drugs 188 (28%). The average number of drugs prescribed per prescription between 5-7 drugs (45%). Urban area patients are the most affected to arthritis disease, in which the number of hilly area patients were 22 (22%) and the plain area patients were 38 (38%).

Conclusion- Older adults with arthritis have the higher risk to develop arthritis disease, knees are the most effective site of arthritis, pushing, pulling, or lifting of heavy things to avoid injury to your joints for improving arthritis prevention and treatment as well as reducing the economic disparities between those with and without arthritis.

Key words: Arthritis, Drug Utilization pattern, Anti-inflammatory drugs, NSAIDs, Methotrexate.

INTRODUCTION

Arthritis is a determined inflammable resistant structure disease in a general sense impacting periphery synovial joints. It is a principal issue in which red-hot changes influence bones and also various distinctive goals including the heart, veins, and skin[1].

The illness is the endless suffering and misrepresentation of the musculoskeletal structure. Rheumatic sicknesses may share the vital signs of condition at a couple of centers in their course. Two of the most widely recognized of rheumatic illnesses are rheumatoid arthritis (RA) and osteoarthritis (OA).[2]

The drugs auranofin is the new oral gold compound for the treatment of rheumatoid joint arthritis. Eight patients with rheumatoid joint pain were dealt with SK&F D-39162 (auranofin), another oral gold

compound which was successful in smothering adjuvant-initiated joint pain. Dorsal 4-finger strategy (DFFT) reliable technique for inspecting metatarsophalangeal (MCP) joints in patients and customary radiography (CR) measure of essential joint harm in rheumatoid joint pain (RA), are two new methods to treat rheumatoid arthritis.[3-5]

Recent developments in the pharmaceutical medication revelation condition have created new concoction elements (NCE's) with the possibility to end up infection altering osteoarthritis drugs (DMOAD's). The US FDA rules determine that since it is broadly (be that as it may, not generally) acknowledged, JSN change of hip and knee infers ligament safeguarding and will in this manner be reflected in clinical advantage[,6-8].

The drug Alefacept is a recombinant dimeric combination protein for the treatment of psoriatic arthritis, is made up of the terminal part of leukocyte work antigen-3. Recently, Patients getting alefacept in combination with methotrexate were appeared to enhance altogether in ACR 20 at week 24 contrasted and patients treated with methotrexate and placebo treatment alone[9].

The two new anti-inflammatory strategies are Lesinurad is a particular, potent uric corrosive reabsorption inhibitor and Canakinumab is a monoclonal immune response, kills IL-1β to smother aggravation[10,11].

Drug Utilization

Medication usage can be depicted as the utilization of medications with different accentuation on the subsequent average, social and monetary results. The primary point of the medication usage is to encourage treatment because of reason on the general key of medications, which imply the remedy in an ideal dosage on right sign, with amend data and at a moderate cost[12].

Medication is an essential piece of pharmacoepidemiology depicts the sum, quality and the motivation behind medication presentation. Medication use thinks about by and primarily comprised of different wellsprings of irritation concentrating on tranquilize[13].

Methodology

The study was carried out in the Orthopedics department of Shri Mahant Indresh Hospital, Patel Nagar Dehradun (U.K.). It is a cross sectional/ observational study, and duration of this study are 6 months. The total 100 patients satisfy the inclusion criteria for study were enrolled into the study. Potential study subjects were thoroughly interrogated for history in local dialect and questioned for detailed information pertaining to the disease. A thorough clinical examination was done for In-patients by Orthopedics department. The inclusion criteria of the patients are- patients of either sex, patients who diagnosed with arthritis, patients above the age of 18 years and patients which are admitted in the hospital. The Exclusion criteria of the patients are who did not co-operate, below the age of 18 years and those patients who are suffering from other disease. The data were collected and source by the interviewing the patients, prescription record, and by investigational report.

Results and Discussion

In this study, the Plain area residential Patients were 60 (60%), and hilly area residential patients were 40 (40%) (Table and figure no.1). The Age category of the patients maximum number of patients were age 61-82 patients were 55% (55), 31-60 years were 30% (30), and between 18-30 years were 15% (15) (Table and figure no.2). Weight wise distribution of the patients the maximum number of the patients were 49%

between the weight 61-70 kg, 33% patients were between 50-60 weight patients and the lowest number of weight wise affected patients were 18% between the weight ≥71 (Table and figure no.3). The Gender and Residential Category of the arthritis patients, male patients were 34 (34%) in which the hills area residential male patients were 12 (12%) and plain Area residential patients were 22 (22%), and the number of female patients were 66 (66%) in which the hills area residential patients were 28 (28%) and plain area residential patients were 38 (38%) (Table and figure no.4). The number of Branded and Generic drugs prescribed, branded drugs prescribed were 505 (72%) and the number of Generic drugs prescribed were 188 (28%) (Table and figure no.5). In the study, the average number of drugs prescribed per prescription the number of drugs prescribed per prescription were 2-4 number of drugs were 25 (25%), 5-7 number of drugs were 45 (45%) and ≤ 8 number of drugs were 30 (30%) (Table and figure no.6). Marital status of the Patients were out of 100 patients, in which the number of unmarried male and female patients were 40 (40%), in which the number of male unmarried patients were 13 (13%) and unmarried females were 27 (27%), and the number of married patients were 60 (60%), in which the number of married male patients were 18 (18%) and female patients were 42 (42%) (Table and figure no.7). Distribution of body parts in which knees affected were 25 (25%), Feet and ankles were 17 (17%), Hands and hip were 15 (15%), fingers were 10 (10%), Elbows were 8 (8%), Toes 7 (7%) and shoulders 3 (3%) (Table and figure no. 8). The residential category of the patients, the urban hilly region patients were 22 (22%) and plain region patients were 30 (30%) and the rural area hilly region patients were 18 (18%) and plain region patients were 30 (30%) (Table and figure no. 9). The Economic status of the patients found that his/her annual income were more than 5 lakh were 42 (42%), more than 1 lakh and less than 5 lakh patients were 33 (33%) and less than 1 lakh patients were 25 (25%) (Table and figure no.10). Literacy rate of the patients, the number of upto 12th std. patients were 30 (30%), upto 10th std. patients were 23 (23%), Graduation patients were 20 (20%), Post-graduation patients 10 (10%) and illiterate patients were 7 (7%) (Table and figure no.11).

Table No. 1

Residential Area	No. of Patients	Percentage (%)
Plains	60	60%
Hills	40	40%

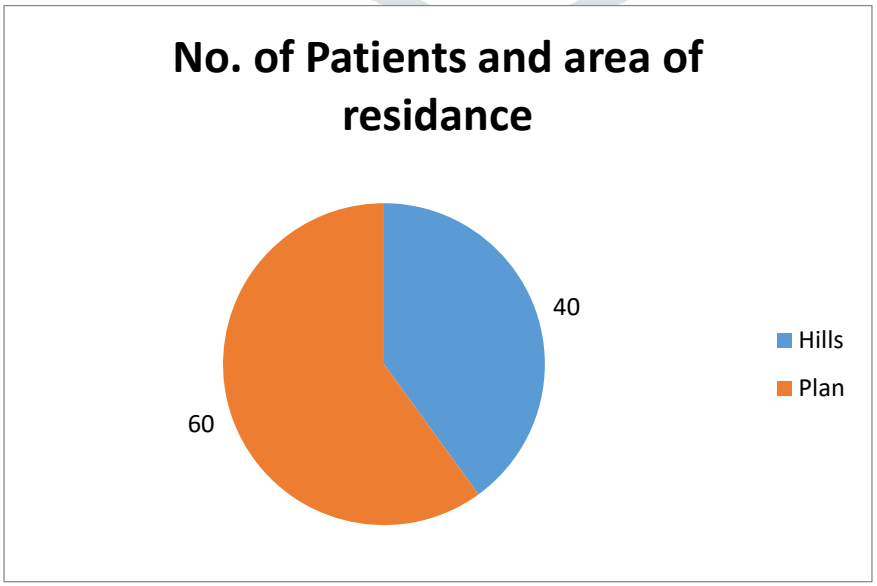


Figure 1: No. of Patients and Area of Residence

Table No. 2

Patients Age	No. of Patients	Percentage (%)
18-30 years	15	15%
31-60 years	30	30%
61-82 years	55	55%

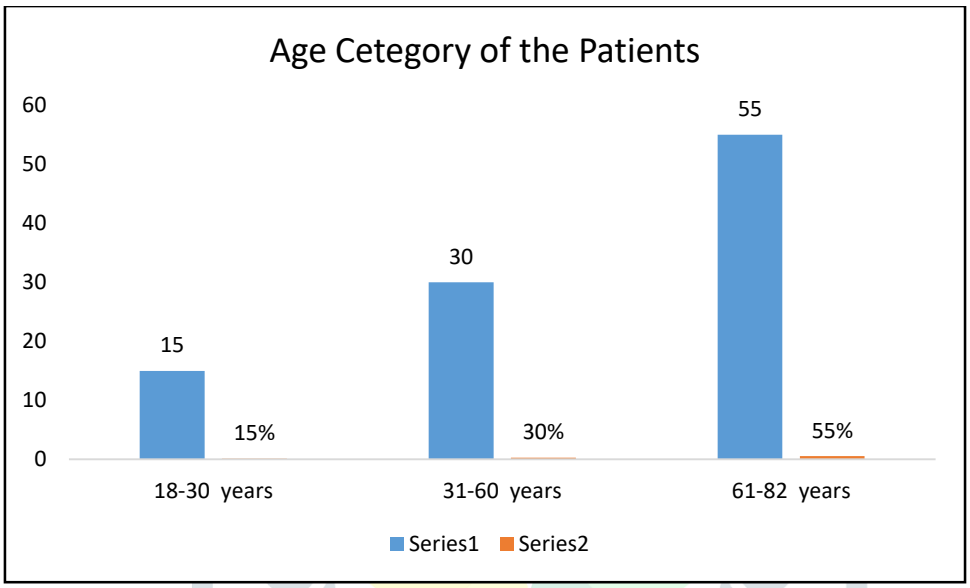


Figure No. 2 shows the age of the Patients

Table No. 3

Weight of the Patients	No. of Patients	Percentage (%)
50-60 Kg	33	33%
61-70 Kg	49	49%
≥71	18	18%

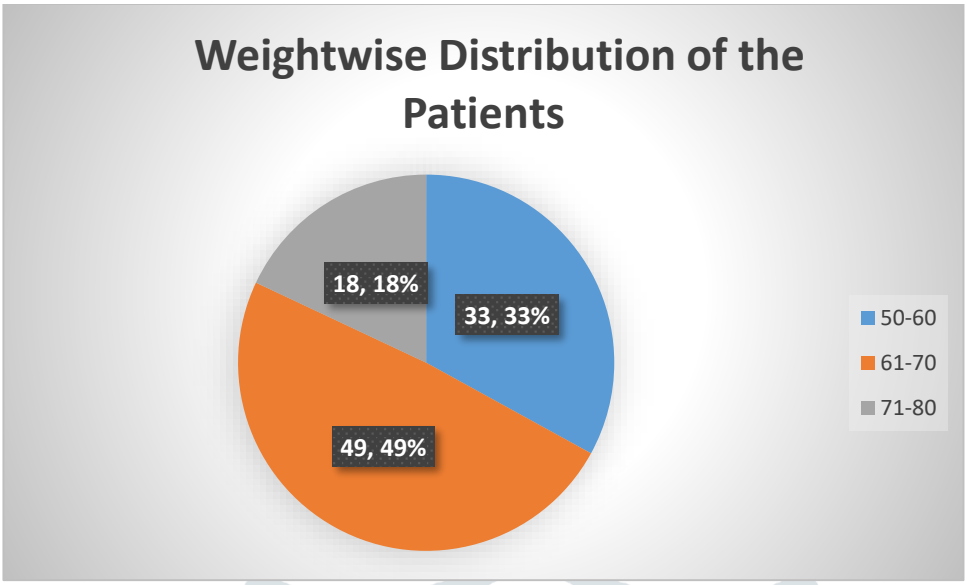


Figure No. 3 shows the weight wise Distribution of the Patients

Table No. 4

Sr. No.	Gender and residential region	No. of Patients
1.	Male- Hills Plain	12 22
2.	Female- Hills Plain	28 38

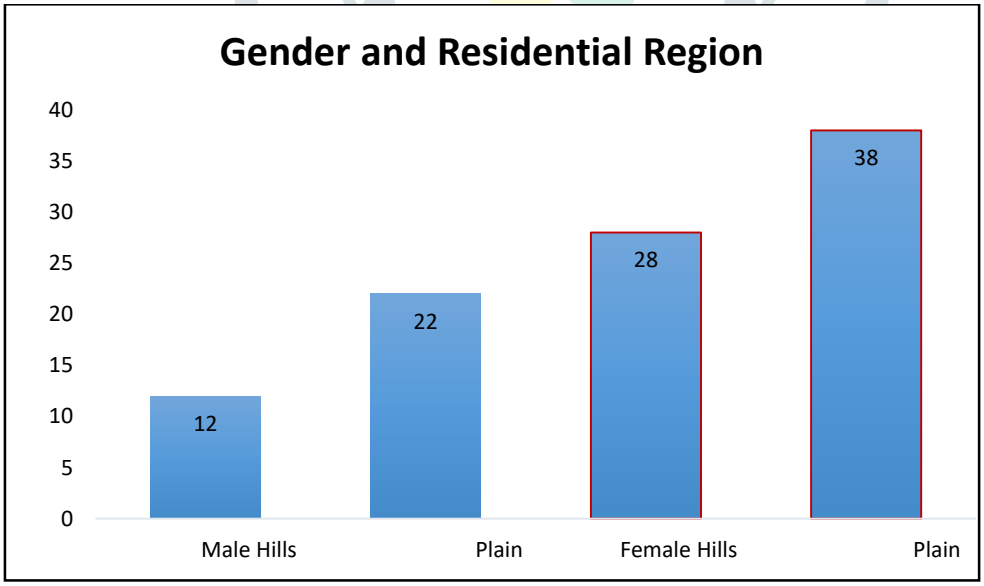


Figure No. 4 Gender and Residential region

Table No. 5

Drug Category	No. of Drugs (n- 693)	Percentage
Branded	505	72%
Generic	188	28%

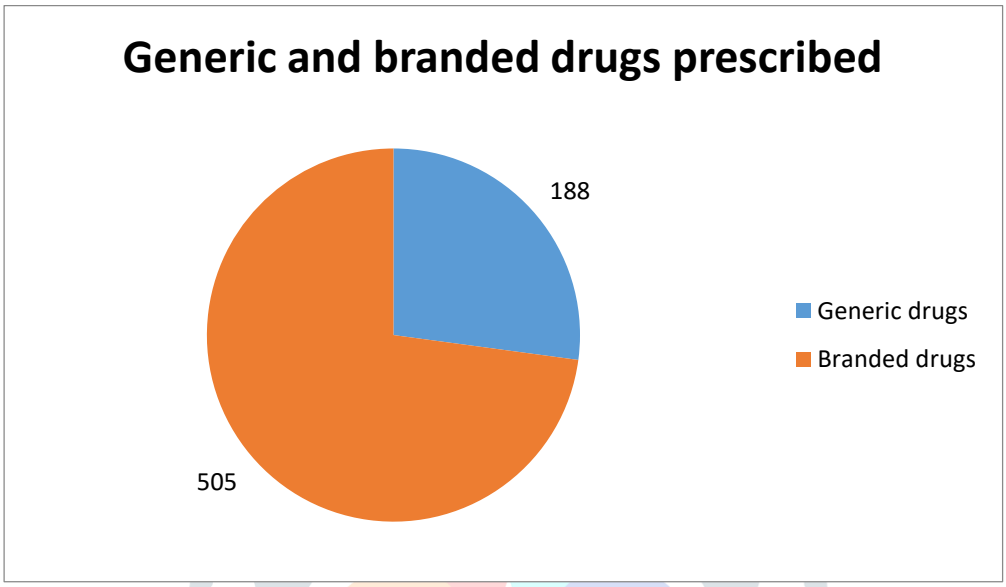


Figure No.5 Generic and branded drugs prescribed

Table No. 6

Drugs Prescribed per Prescription	No. of patients	Percentage (%)
2-4 Drugs	25	25%
5-7 Drugs	45	45%
≥8 Drugs	30	30%

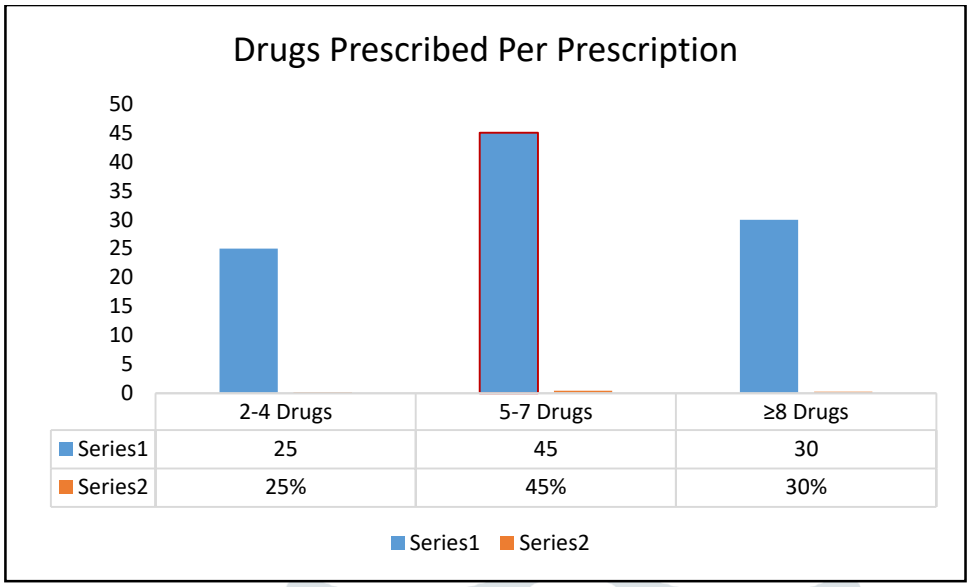


Figure No. 6 shows the drugs prescribed per prescription

Table No.7

Drugs Prescribed	No. of Patients	Percentage (%)
Tablet Diclofenac	78	78%
Injection Amikacin Sulphate	63	63%
Tablet Calcium Carbonate + Vitamin D3	78	78%
Tablet Pantoprazole	68	68%
Capsule Cholecalciferol	61	61%
Injection Ceforoxime	72	72%
Injection Tramadol hydrochloride	61	61%
Tablet Ibuprofen	67	67%
Tablet Calcium Phosphate	57	57%
Tablet Folic Acid	73	73%
Tablet Tramadol	65	65%
Injection Aciloc	71	71%

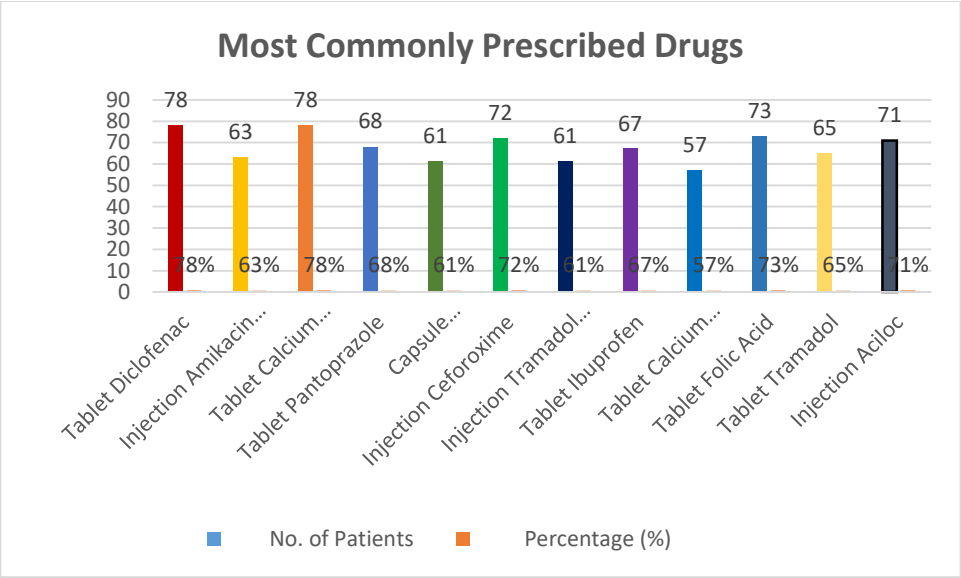


Figure No. 7 Shows most commonly Prescribed Drugs

Table No. 8

Serial No.	Patients Category	No. Of Patients
1.	Unmarried- Male Female	13 27
2.	Married- Male Female	18 42

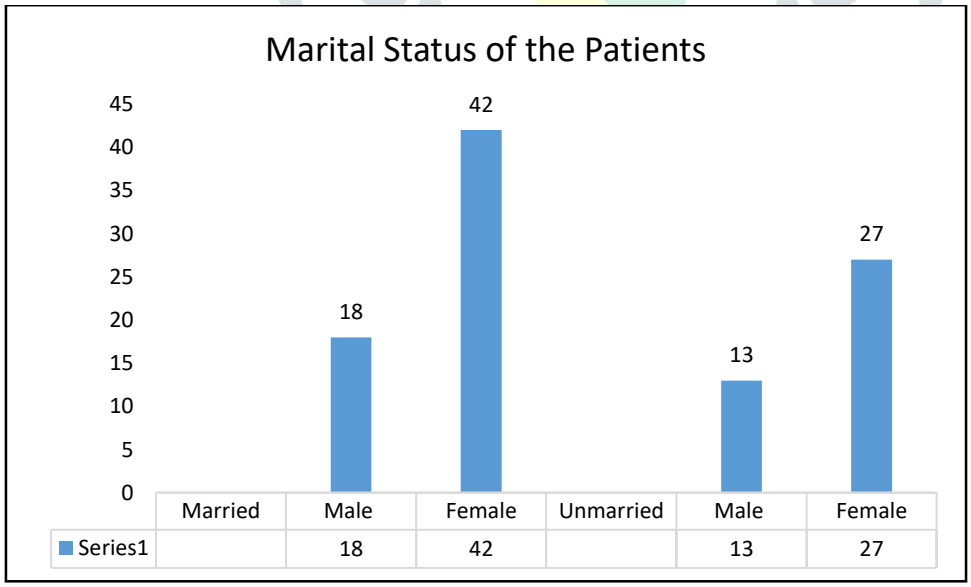


Figure No. 8 shows No. of Marital Status of the Patients

Table No. 9

Sr. No.	Affected Body Parts	No. of Patients
1.	Fingers	10
2.	Elbows	8
3.	Hands	15
4.	Shoulders	3
5.	Toes	7
6.	Feet/Ankles	17
7.	Knees	25
8.	Hip	15

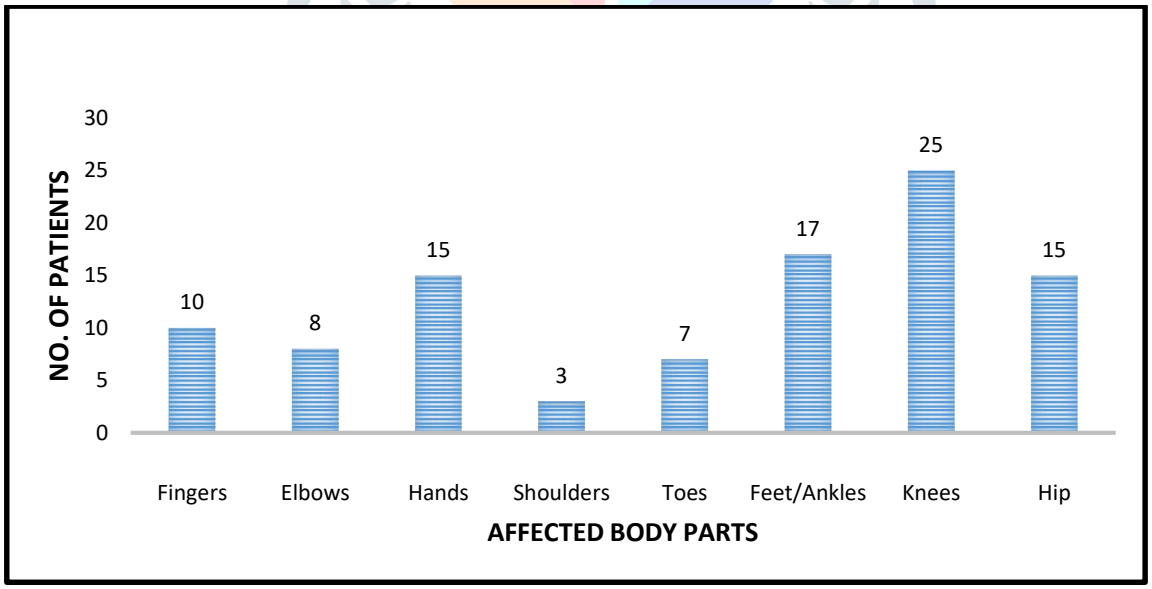


Figure no. 9 shows the arthritis affected body parts and the number of patients

Table No. 10

Sr. No.	Living Area	No. of Patients
1.	Urban Area - Hills Plain	22 30
2.	Rural Area - Hills Plain	18 30

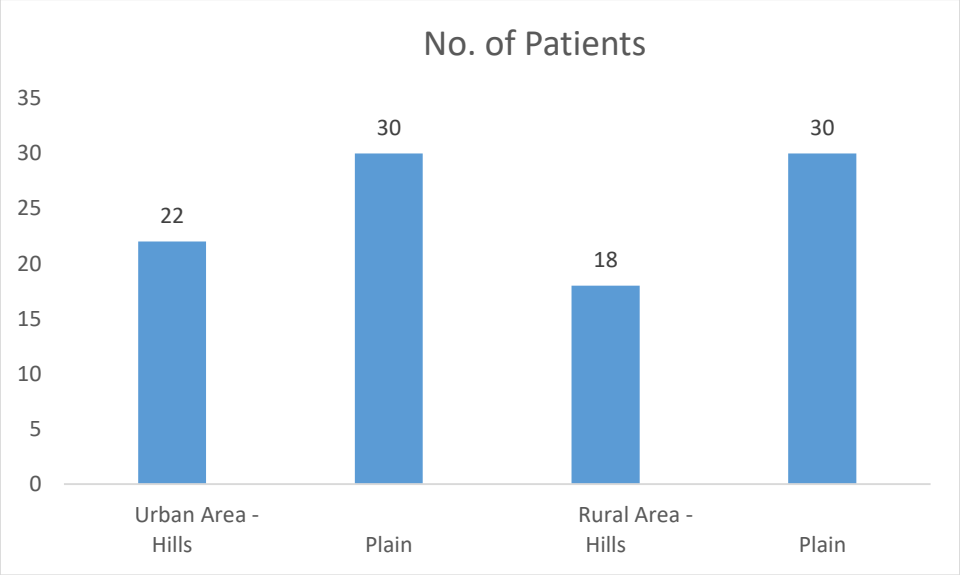


Figure no. 10 shows the living Area status wise distribution of the patients

Table No.11

Serial No.	Economic Status	No. of Patients
1.	Less than 1 lakh	25
2.	More than 1 lakh less than 5 lakh	33
3.	More than 5 lakh	42

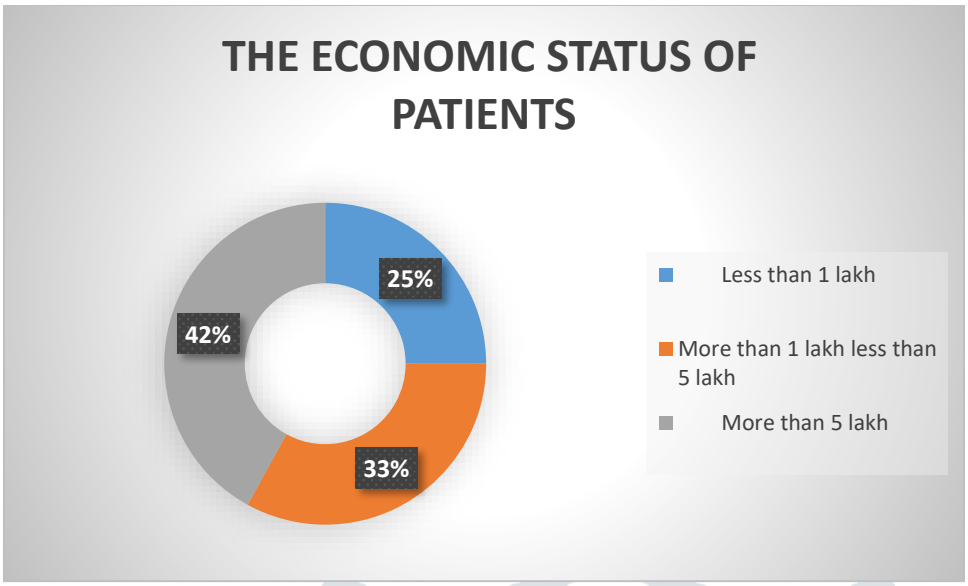


Figure No. 11 shows the Economic Status of Patients

Table No. 12

Parameters	No. of Patients	Percentage (%)
Illiterate	7	7%
Upto 10th	23	23%
Upto 12th	30	30%
Graduation	20	20%
Post-Graduation	10	10%

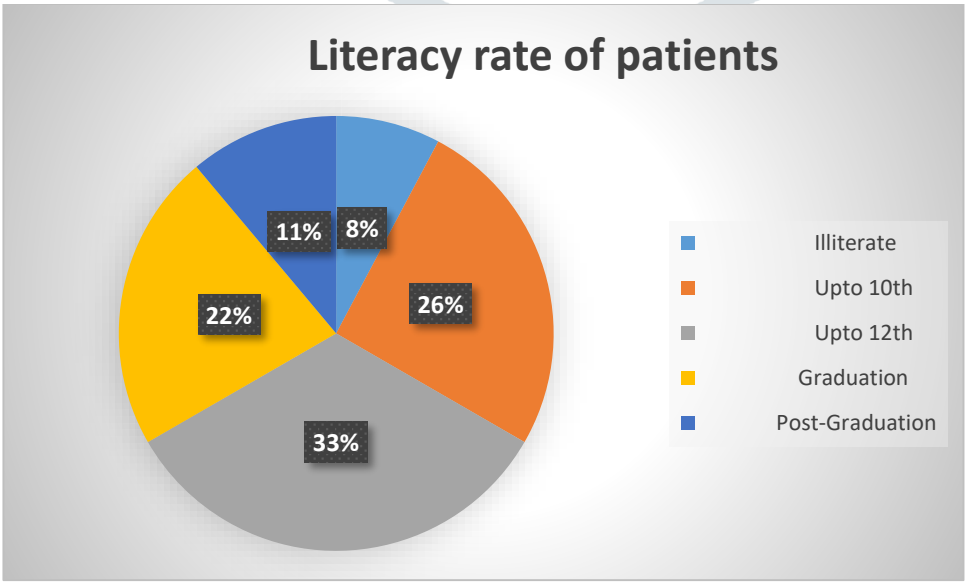


Figure No. 12 shows the Literacy rate of the patients

Conclusion

Due to demographic increases in the numbers of older adults with arthritis and support policies aimed at improving arthritis prevention and treatment as well as reducing the economic disparities between those with and without arthritis. More study are needed to explore my concept in future. The clinical data may be serve as reference for new clinical pharmacist to explore the pharmacist and to explore the potential of medication used to treat arthritis in near future. Non-steroidal anti-inflammatory drugs are the first choice of drugs for the treatment of arthritis if NSAIDs drugs are not effective in arthritis treatment because of they affects slowly disease, in that case people take other types of medications, such as methotrexate or biologics, to help prevent further joint damage.

REFERENCE

1. Waugh Anne, Grant Allison, inflammatory joint arthritis, 12th Edition "Ross and Wilson" Anatomy and physiology Pp. 432-433.

2. Herfindal T. Eric, Gourley, rheumatic diseases of clinical pharmacy and therapeutics 4th edition, chapter 18, section 6 by Leeds L. Andrew, pp:- 322.

3. Finkelstein, A. E., Walz, D. T., Batista, V., "Auranofin-New oral gold compound for the treatment of Rheumatoid Arthritis" Ann. Rheum. Dis. (1976) 35, Pp. 251.

4. Omair MA, Akhavan P, Naraghi A, et al. The dorsal 4-finger technique: a novel method to examine metacarpophalangeal joints in patients with rheumatoid arthritis. J Rheumatol. 2018; Vol.45 (3): Pp.329-334.

5. American College of Rheumatology Subcommittee on Rheumatoid Arthritis Guidelines. Guidelines for the management of rheumatoid arthritis: 2002 update. Arthritis Rheum 2002; Vol.46: Pp. 328–46.

6. Guidance for the industry. Clinical development programs for drugs, devices and biologicals products intended for the treatment of osteoarthritis. US Department of Health and Human Services. Food and Drug Administration, Center for Drug Evaluation and Research. July 1999. Available from: http://www.fda. gov/cder/guidance/2199dft.htm.

7. Focuses to consider on clinical examination of therapeutic items used in the treatment of osteoarthritis. European Agency for the Evaluation of Medicinal Products. Committee for Proprietary Medicinal Products. July 1998. Available from: http://www. emea.eu.int/pdfs/human/ewp/078497en.pdf

8. Group for the Respect of Ethics and Excellence in Sciences (GREES). Suggestions for the enrollment of medications utilized as a part of the treatment of osteoarthritis. Ann Rheum Dis 1996; Vol. 55: Pp. 5527.

9. Wolfgang Weger, Current status and new developments in the treatment of psoriasis and psoriatic arthritis with biological agents, British Journal of Pharmacology (2010), 160, 810–820.

10. Shen Z, Rowlings C, Kerr B, et al.: Pharmacokinetics, pharmacodynamics, and safety of lesinurad, a selective uric acid reabsorption inhibitor, in healthy adult males. Drug Des Devel Ther. 2015; Vol. 9: Pp.3423–34.

11. Schlesinger N, Mysler E, Lin HY, et al.: Canakinumab reduces the risk of acute gouty arthritis flares during initiation of allopurinol treatment: results of a double-blind, randomized study. Ann Rheum Dis. 2011; 70(71): 1264–71.

12. Borghi L.guerra A, Meschi T, Briganti A, Schianchi T, Allegri F, Novarini A, Relationship between supersaturation and calcium oxalate crystallization in normal and idiopathic calcium oxalate stone formers. Kidney Int. 1995; 55:1041-50.

13. Worcester EM, Coe FL. Nephrolithiasis Prim Care 2008; 35:369-91, vii