



RESEARCH ARTICLE

WHO CORE PRESCRIBING INDICATORS AND ITS EFFECTS ON QUALITY OF LIFE IN PATIENTS WITH SUPERFICIAL FUNGAL INFECTIONS

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Abstract

Tinea infections is a very common dermatological condition that is prominent in almost all age groups irrespective of gender. A prospective observational study was carried out in a sample of 210 patients in CAIMS, Karimnagar in the dermatology OPD for a time period of six months. The patient's quality of life was evaluated using DLQI and prescription patterns were evaluated using WHO core prescribing indicators. The findings suggested that the condition was more commonly seen in age group of 31-60 years. The patients belonging to the low socio-economic status was found to be more prone to infections. As per DLQI, it was found that 66.6% of patient's quality of life was largely affected by this condition. Furthermore, on studying the prescription pattern using the WHO core prescribing guidelines, the irrational use of drugs has been noticed. In this study using DLQI we came to the conclusion that tinea is a chronic infection and has a very large effect on the quality of life of individuals. WHO core prescribing indicators are used to study the irrational prescribing pattern and concluded that maximum prescriptions do not satisfy as per the ideal values.

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Introduction:-

Skin conditions including pyoderma, acne, urticaria, dermatitis, scabies, fungal skin infections, alopecia, etc. are frequent in India. Many antifungal medications are used to treat a fungus infection. However, choosing the best medication for a fungus infection is essential for a successful therapy.^[1,2]

Itraconazole, fluconazole, and terbinafine are the different types of antifungals used in the treatment of dermatophytes. Fluconazole belongs to the triazole group, while terbinafine to the allylamine group. In recent years, antifungal medication has experienced amazing advancement.^[3] Imprudent application of antifungal medications contributes to the growth of the antifungal insurgency and can lead to undesirable results including recurrent infections, unnecessary exposure, and increased cost.^[4] Yet, there are little statistics available about the cost of antifungal medications in high-risk areas. These details are required to address issues with public health relating to the effectiveness of antifungal drugs. As they lack well accepted antifungal management methods or/and strategies, developing nations must be particularly concerned about this issue. Also, there is a lack of information on the prevalence of using improper antifungals and the risk factors associated with it in these nations. Drug usage study, which refers to the advertising, distribution, prescription, and consumption of pharmaceuticals with a focus on the

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medical, social, and financial costs, is one of the key investigative strategies used to ascertain the function of drugs in society. A strategy to improve prescription quality and assist balanced prescribing is periodic prescription audit in the form of medication use study.^[5,6]

More often than not, fungus infections may be easily identified and treated. The goal of the proposed research is to identify the distribution of dermatological conditions in this area and analyses how antifungals are prescribed in this organization.

The results of this research will help in developing municipal rules for the proper use of antifungal medications, as well as knowing how antifungal prescription practices are currently being used.

Methodology:-

Present prospective, observational research was performed at Chalmeda Ananda Rao Institute of Medical Sciences, Karimnagar, Telangana. Data of drugs prescribed were taken from subject's prescription. Ethical approval was taken from the institutional ethical committee and written informed consent was taken from all the participants. This study was observational conducted over six month's period. All cases in dermatology OPD of Chalmeda Ananda Rao Institute of Medical Sciences.

Inclusion criteria:

- Patients with tinea infections of the Outpatient Dermatology Department.
- Both male and female patients of above 16 years of age with consent are included.

Exclusion criteria:

- Patients below 16 years of age are excluded from the study.
- Patients whose consent wasn't given are excluded from the study.
- All other skin infections except tinea were excluded from the study

Statistical analysis:

Statistical Analysis was performed using Microsoft Excel v.2020.

The results were reported in terms of their absolute values, percentages, frequency distributions and means wherever relevant.

Study Procedure^[7]:

1. Study approval was obtained from the Institutional Review Board (IRB) at Vaageswari College of Pharmacy, Karimnagar.
2. After getting the permission from the IRB, patients matching for the study criteria were identified by regular review of patient records during study period and documented in patient data collection form.
3. The collected data is then entered into a Microsoft Office Excel sheet for further analysis and evaluation.
4. The effect of the skin condition on the quality of life of the individuals was measured using Dermatology Life Quality Index (DLQI) scale.
5. The prescriptions are also collected and are evaluated as per the WHO core prescribing patterns.
6. All the above collected data is then analysed and studied further.

Who Prescribing Indicators^[7]:

According to World Health Organization (WHO) rational use of drugs is explained as "Patients administering medicines according to their clinical needs, in doses that meet their individual body requirements, for a specific period of time at the lowest cost to them and the society." But it is seen that majority of the prescribers throughout the world especially in developing countries like India are not involved in rational use of medicines. Majorly in India, there are various issues in prescription pattern of drugs like irrational drug combinations, overuse of multivitamins, adequate use of antibacterial in fungal conditions and prescribing similar class of drugs

1. World Health Organization was established in 2003. Drug utilization study is an important component of Pharmacoepidemiology. WHO defines drug utilization study as "The marketing, distribution, prescribing and use of drug in society, with special emphasis on medical, economic and social consequences

2. Prescription pattern shows the prescribers attitude towards the disease and role of drugs in the treatment. The study of prescription pattern is important to monitor prescribing practices to make medical care safe, effective and cost effective

The Prescriptions were subjected to critical evaluation using WHO prescribing indicators.

- a) Average number of drugs per encounter was calculated by dividing the total number of different drug products prescribed by the number of encounters surveyed.
- b) Percentage of drugs prescribed by generic name was determined by the dividing the total number of drugs that are prescribed by their generic name by the total number of drugs prescribed, multiplied by hundred.
- c) Percentage of encounters with an antibiotic prescribed were calculated by dividing the number of patient encounters during which an antibiotic was prescribed by the total number of encounters surveyed, multiplied by hundred.
- d) Percentage of drugs prescribed from essential drug.
- e) Percentage of fixed-dose combination prescribed

All the findings were recorded, complied, tabulated and analysed. The analysed data were expressed in percentage.

Drug utilization study is effective tool to promote rational and cost-effective drug prescribing. Generic prescribing to reduce the cost of treatment and consider factors like polypharmacy.

Drug utilization pattern in dermatology department was done satisfying the WHO criteria with 210 sample size which includes various relevant data derived from collected prescriptions that includes demographic details, diagnosis, classes of drugs prescribed with frequency and dosage form

Dermatology Life Quality Index (DLQI):

Dermatology life quality index (DLQI) is a questionnaire-based survey which consists of 10 questions based on effect of quality of life. This scale is designed to use in adult patients above 16 years of age The questions are based on:

1. Symptoms
2. Embarrassment
3. Shopping
4. Day to day activities
5. Sexual life difficulty
6. Each question refers to the impact of skin disease on quality of life.
7. Each question is given score from 0 to 3 if the score range is zero then there is no effect on quality of life and if the score is three then there is maximum effect on the quality of life.
8. These are divided into bands 0-1(no effect on patient life), 2-5(small effect on quality of life), 6-10(moderate effect), 11-20(very large effect) and 21-30(Extremely large effect)^[8]

Results:-

In this study a total of 210 patients were taken into considerations as per the required criteria.

Demographic Details:

Table 2:- Patient distribution based on Gender.

Gender	No. of patients	Percentage (%)
Male	108	51.42
Female	102	30.47
Total	210	100

In this study, 210 cases of superficial fungal infections were covered, out of which 108 (51.42%) were male patients and 102 (30.47%) were female patients. This data has been depicted in Table 2 and Fig 12.

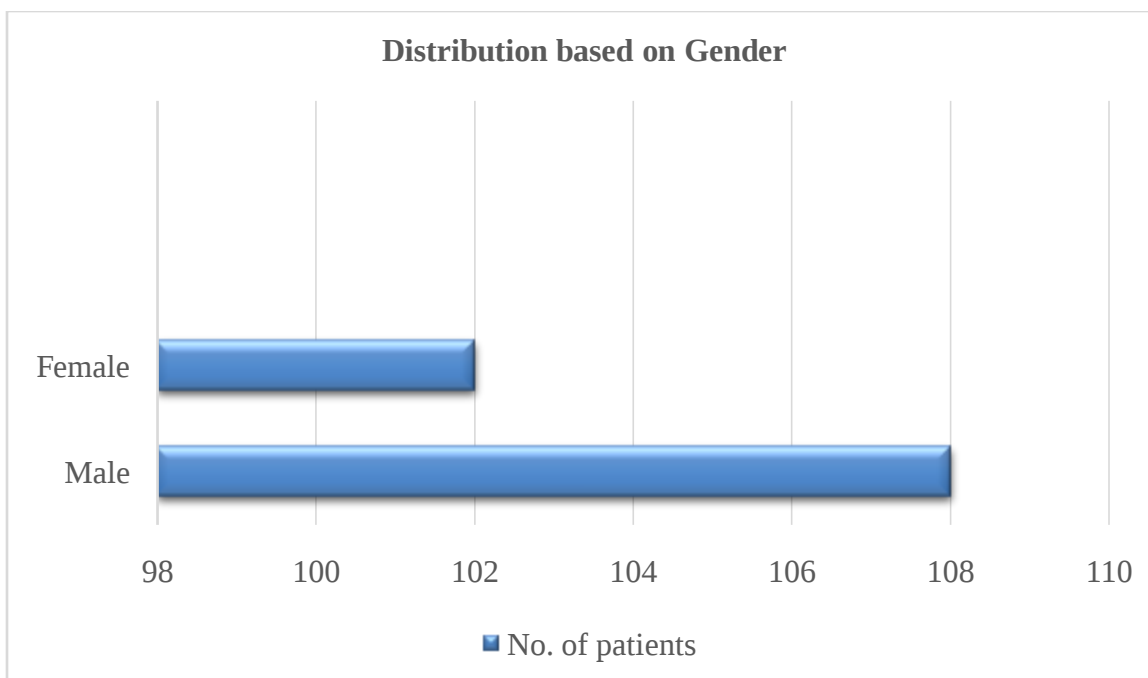


Fig 12:- Distribution based on Gender.

Table 3:- Patient distribution based on Age.

Age group	No. of patients	Percentage (%)
16 – 30	93	44.28
31 – 60	103	49.04
61 – 90	14	6.66
Total	210	100

Out of 210 cases, 103 (49.04%) patients were found to belong to 31- 60 years of age group followed by 93 (44.28%) patients who belonged to 16 – 30 years of age group and 14 (6.66%) patients who belonged to 61- 90 years of age group. This was shown in Table 3 and Fig 13.

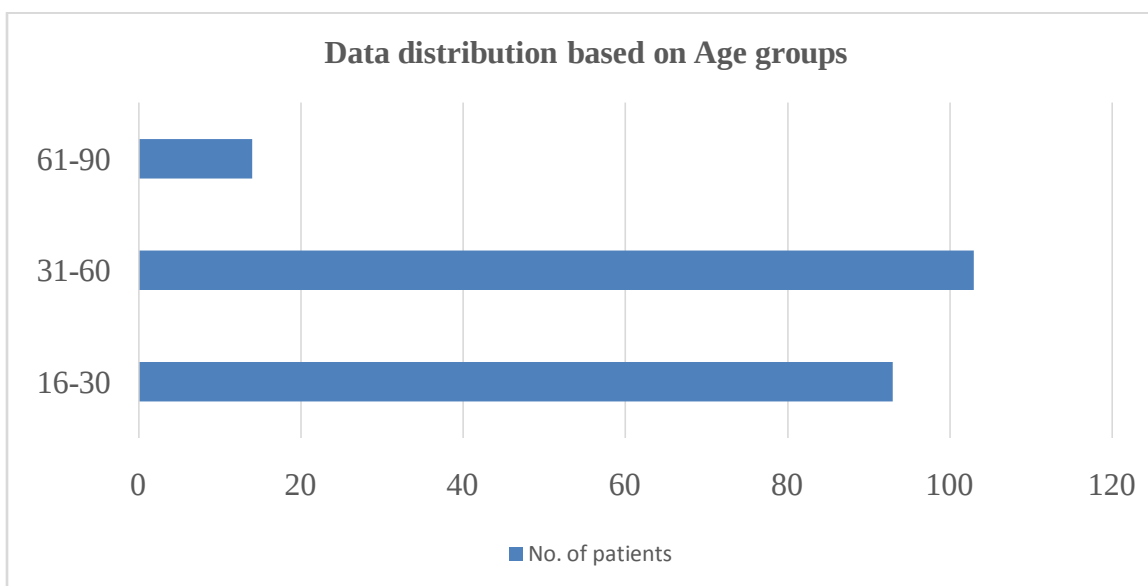
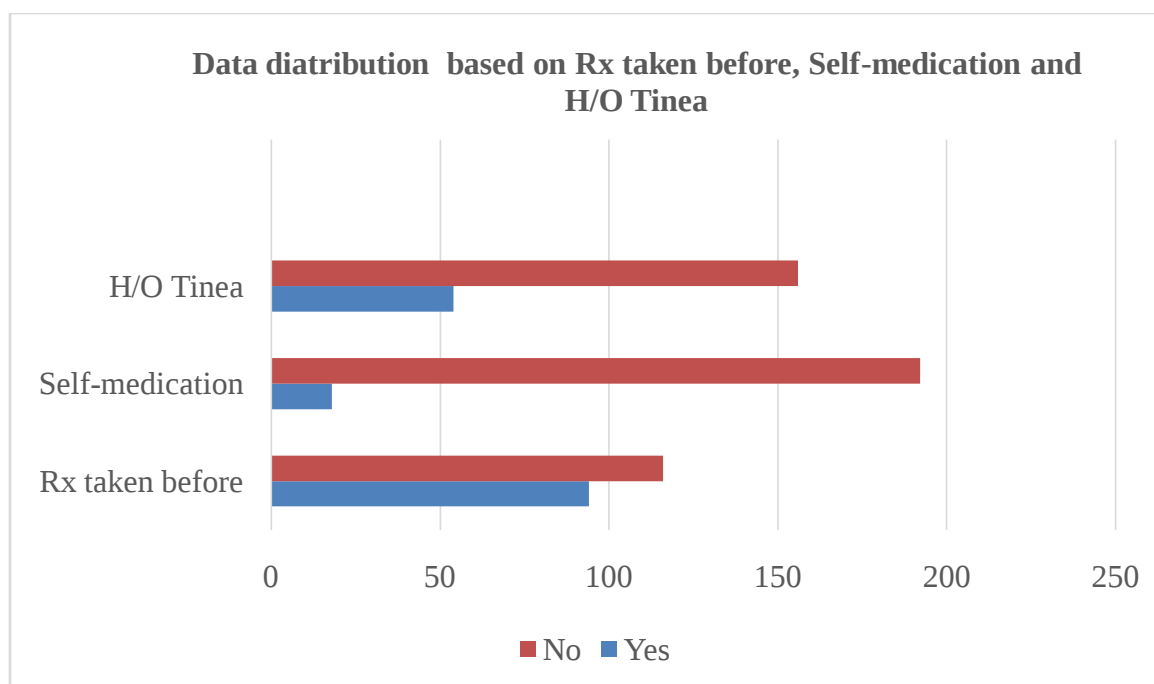


Fig 13:- Data distribution based on Age groups.

Table 4:- Distribution based on treatment taken before, self-medication, h/o tinea.

Variable	No. of patients	Percentage (%)
Rx taken before		
Yes	94	44.76
No	116	55.23
Self-medication		
Yes	18	8.75
No	192	91.42
H/O Tinea		
Yes	54	25.7
No	156	74.28

Out of 210 cases, 116 (55.23%) patients were found not to have taken the treatment before and 94 (44.76%) patients were found have taken the treatment before. Self-medication was seen in 18 (8.75%) patients and not seen in 192 (91.42%) patients. History of tinea was noticed in 54 (25.7%) patients and not observed in 156 (74.28%) patients. This data is shown in Table 4 and Fig 14.

**Fig 14:-**Data distribution based on Rx taken before, Self-medication and h/o tinea.**Table 5:-** Data distribution based on socio-economic status the patients belong to.

Socio-economic status	No. of patients	Percentage (%)
Upper	8	3.80
Middle	68	32.23
Lower	134	63.80

Out of 210 cases, 134 (63.80%) patients were found to be belonging to lower socio-economic class followed by 68 (32.23%) patients belonged to the middle class and the rest 8 (3.80%) belonged to the upper socio-economic class. This data is shown in Table 5 and Fig 15.

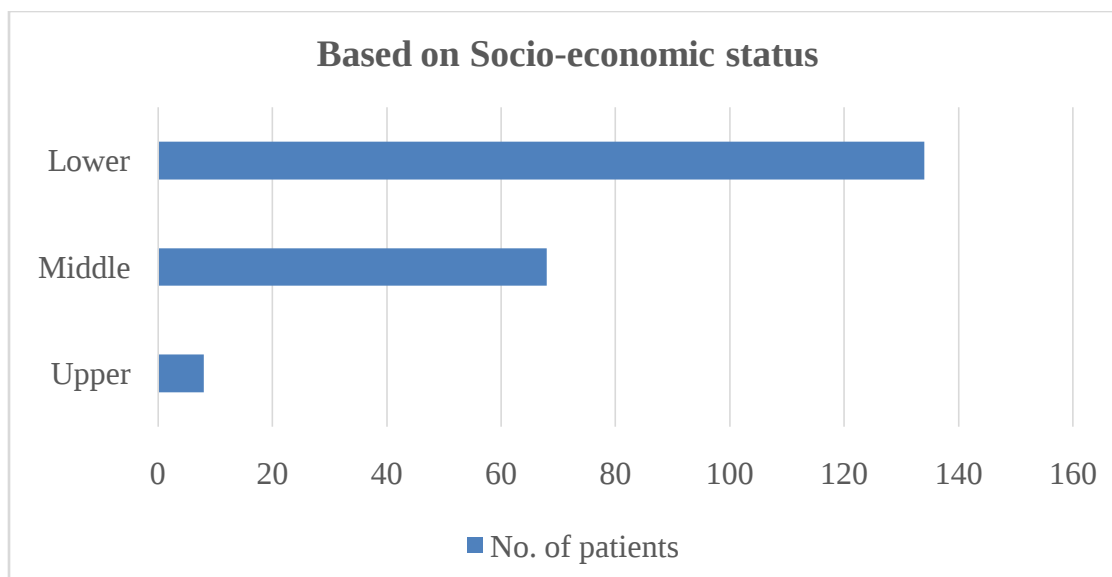


Fig 15:- Based on Socio-economic status.

Table 6:- Data distribution based on Area of living and type of family the patient belongs to.

Area	No. of patients	Percentage (%)
Urban	89	42.38
Rural	121	57.6

Out of 210 cases, 121 (57.6%) patients lived in rural areas and 89 (42.38%) patients lived in urban areas. This data is shown in Table 6 and Fig 5.

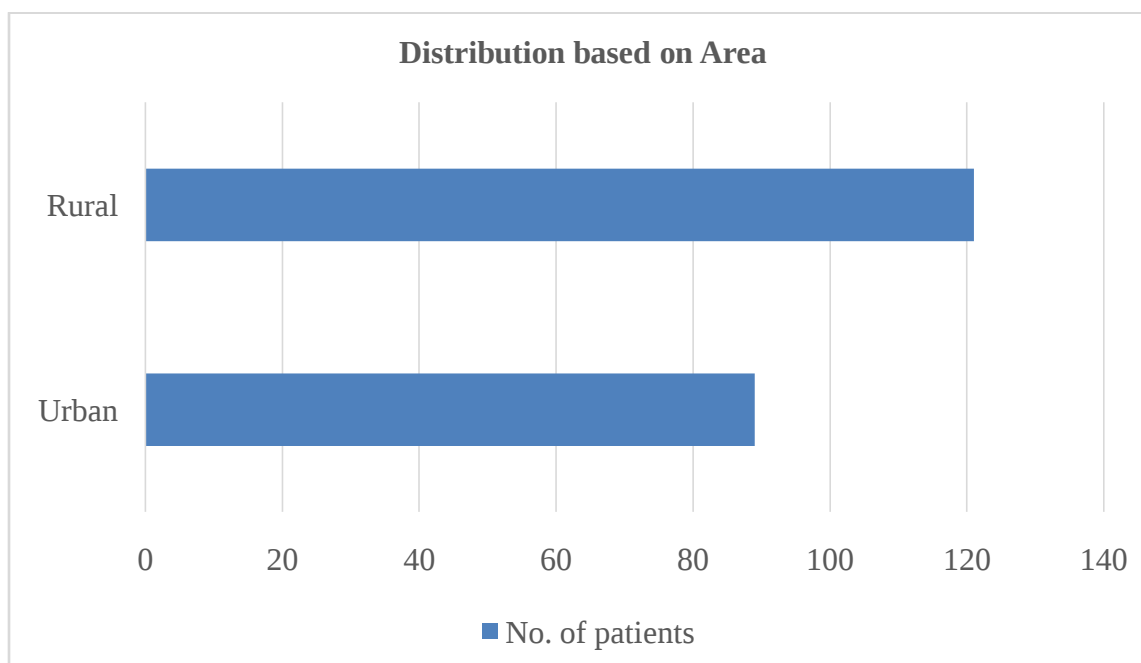


Fig 16:- Distribution based on Area.

Table 7:- Data distribution based on type of family the patient belongs to.

Type of family	No. of patients	Percentage (%)
Joint	108	51.42

Nuclear	102	48.57
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Out of 210 cases, 108 (51.42%) patients lived in joint families and 102 (48.57%) were found to be living in nuclear families. This data is shown in Table 7 and Fig 17.

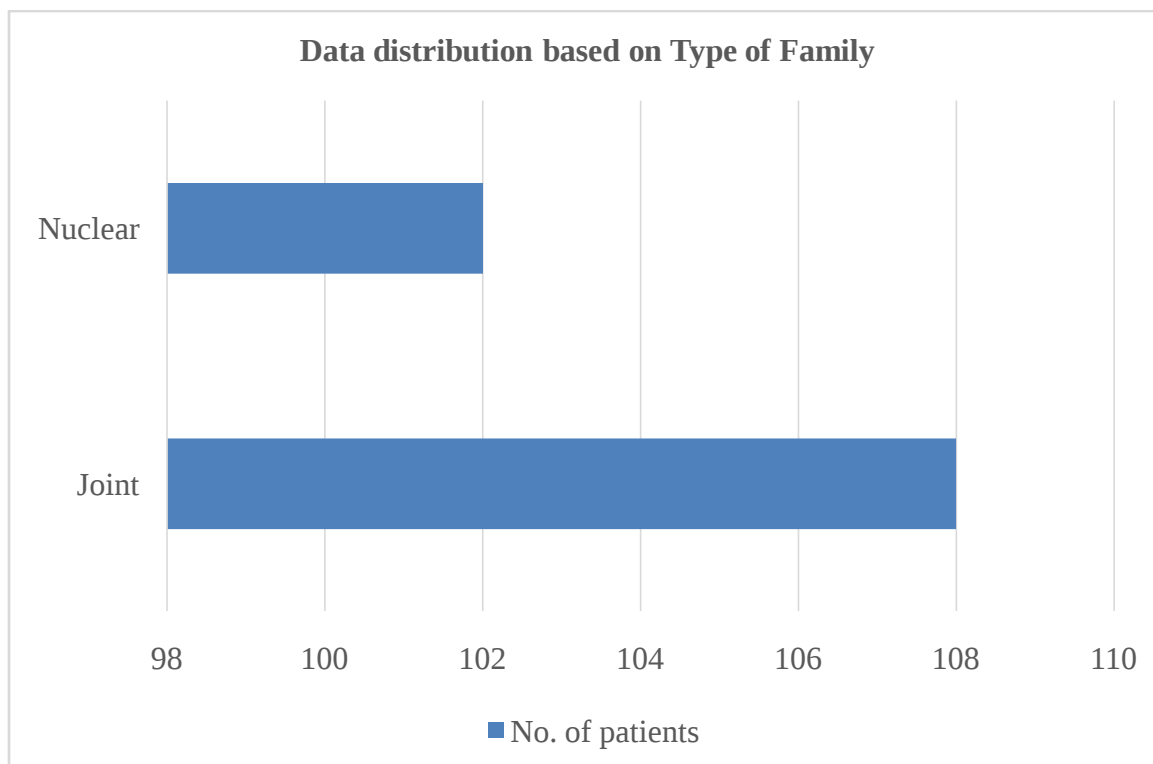


Fig 17:- Data distribution based on type of family.

Table 8:- Data distribution based on duration of present illness.

Duration of present illness	No. of patients	Percentage (%)
1 Month	44	20.95
2-5 Months	98	46.66
6 Months	22	10.47
≥ 1 Year	46	22
Total	210	100

Out of 210 patients, 98 (46.66%) patients were noted to be suffering from their present infection for the past 2-5 months, followed by 46 (22%) patients suffering for the past ≥ 1 year and 44 (20.95%) patients were suffering for a period of 1 month and 22 (10.47%) patients were suffering for the past 6 months. This is shown in Table 8 and Fig 19.

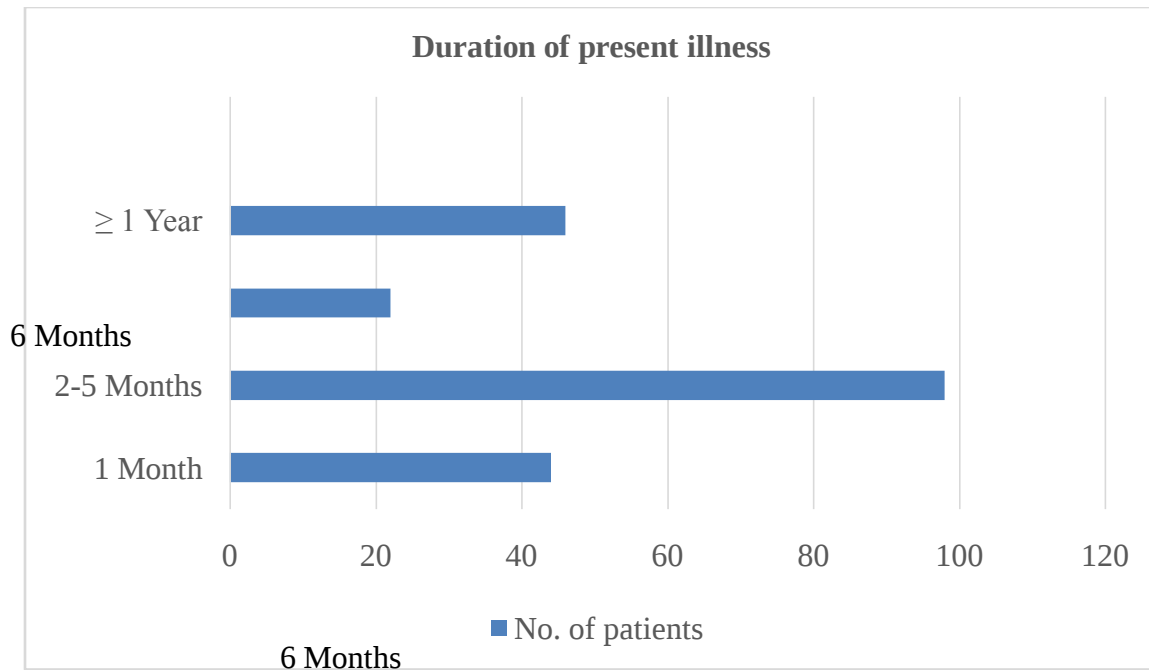


Fig 19:- Duration of illness.

Table 9:- Data distribution based on Transmission and drying of wet body parts.

Variable	No. of patients	Percentage (%)
Transmission		
Yes	149	70.95
No	61	29.04
Drying of wet body parts		
Yes	90	42.85
No	120	57.14

Out of 210 cases, 149 (70.95%) of cases were evident to be transmitted and rest 61 (29.04%) were noticed to be not transmitted. And only 90 patients i.e., 42.85% of the total studied patients were noted to wipe themselves dry and the rest 120 patients i.e., 57.14% didn't follow this. This is depicted in Table 9 and Fig 20.

Fig 20:- Data distribution based on drying of wet body part and transmission.

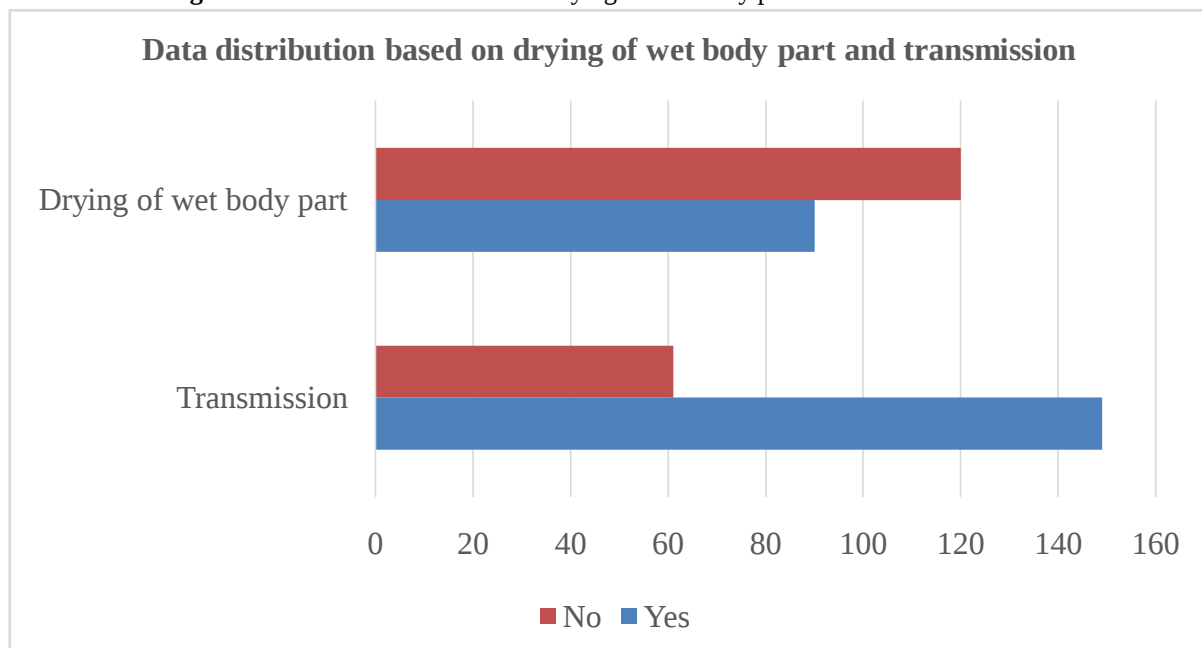
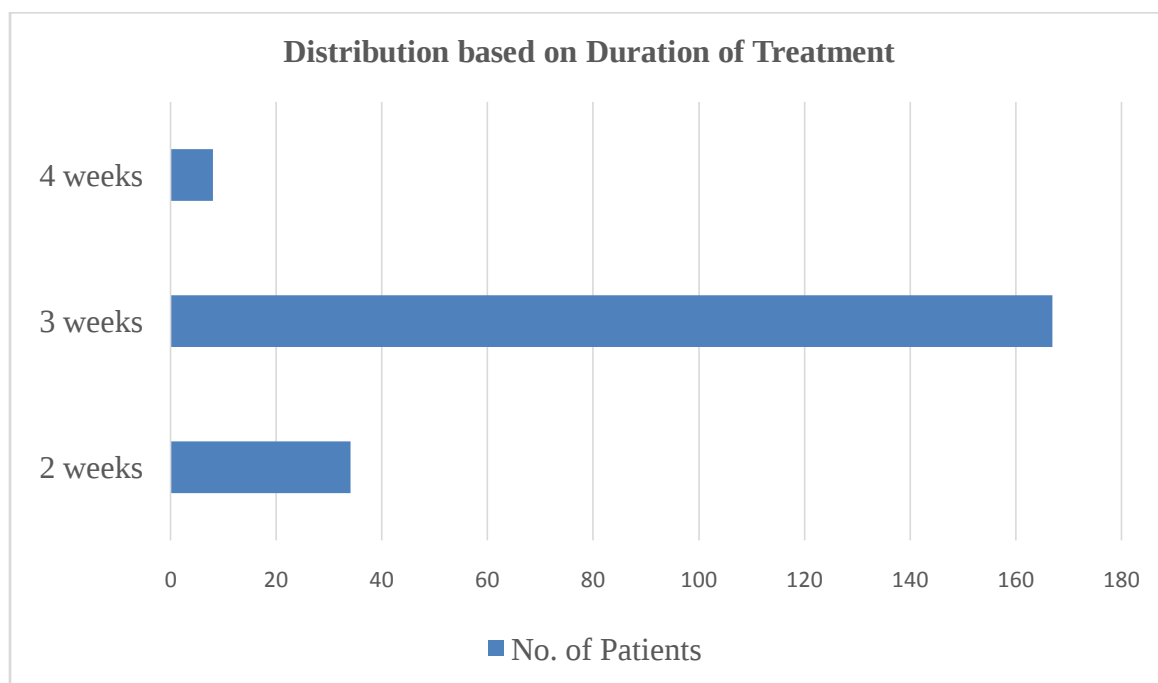


Table 10:- Data distribution based on Duration of Treatment.

Duration of Treatment	No. of patients	Percentage (%)
2 weeks	34	16.19
3 weeks	167	79.95
4 weeks	9	4.28

Out of 210 tinea infection cases, it was noticed that 167 (79.95%) cases had a 3 weeks treatment duration, 34 (16.19%) cases had a 2 weeks treatment duration and 8 (4.28%) cases had 4 weeks. The results were shown in Table 10 and Fig 21.

**Fig 21:-** Distribution based on duration of treatment.**Table 11:-** Data distribution of patients according to type of Tinea Infections.

Type of Tinea Infection	Site of involvement	No. of Patients	Percentage (%)
Tinea corporis	Trunk	118	56.19
Tinea cruris	Groin	60	28.57
Tinea faciei	Face	14	6.66
Tinea incognito		6	2.85
Tinea barbae	Beard region	1	0.47
Tinea mannum	Hand/Leg	2	0.95
Pityriasis versicolor		7	3.33
Onychomycosis	Nail	2	0.95

From the above collected data which depicts that Tinea corporis is the most prevalent type i.e., 56.19% followed by Tinea cruris comprising of 28.57%. And the least prevalent being Tinea barbaei.e., 0.47% which is followed by Tinea mannum and Pityriasis versicolor comprising of 0.95%. The results were summarized in Table 11 and Fig 22.

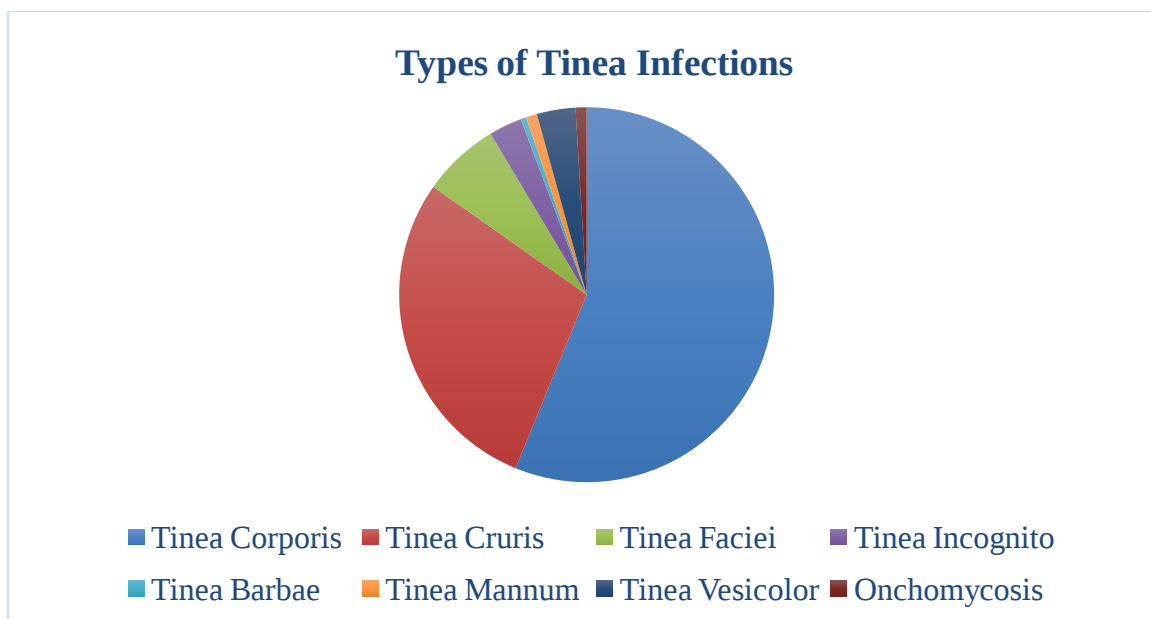


Fig 22:- Types of tinea infections.

Table 12:- Data distribution based on effect of Quality of Life using DLQI.

Severity	No. of Patients	Percentage (%)
Small effect	1	0.47
Moderate effect	51	24.28
Very large effect	140	66.6
Extremely large effect	18	8.57

The study shows that the severity of tinea infections has small effect of 0.47%, moderate effect of 24.28%, very large effect of 66.6% and extremely large effect of 8.57%. Among these, as the very large effect percentage is the most, we can conclude that tinea infections can also cause impaired effects on the quality of life on patients. The results were depicted in Table 12 and Fig 23.

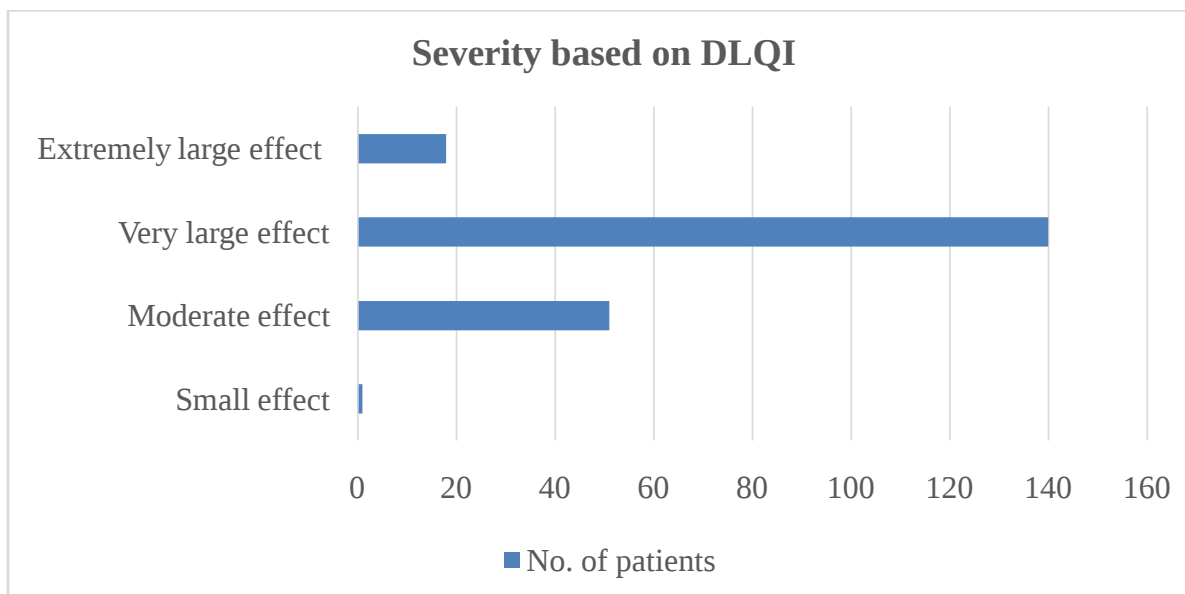


Fig 23:- Severity based on DLQI.

Table 13:- Prescription monitoring using WHO core prescribing indicators.

Parameters	Outpatient value	Ideal value
Avg. no. of drugs prescribed	4.14	< 3
% Generic drugs prescribed	0.014%	100%
% Antibiotics prescribed	0.047%	< 30%
% Injections prescribed	0.000%	< 10%
% Drug prescribed as per WHO EDL	0.970%	100%

On studying the prescribing pattern of the prescriptions of the tinea infections in the dermatology OPD, it was observed that an average of 4.14 drugs were prescribed per prescription encounter. Out of which 0.014% generic drugs were prescribed. As it is a fungal infection, the percentage of antibiotics and injections were found to be 0%. Only 0.97% of the prescribed drugs were prescribed as per the WHO EDL. As shown above in Table 13.

Conclusion:-

Regardless of gender, superficial fungal infections are known to occur in practically all age groups. This study came to the conclusion that men were more commonly impacted than women. Tinea corporis was identified as the most prevalent kind of tinea infections. According to reports, low-income groups had a greater frequency of dermatophyte infections than middle-income groups. Poor living circumstances, big families, and intimate relationships between family members—either directly or via sharing items like towels and combs—are the main causes in low socioeconomic groups. It was determined by examining prescription patterns according to WHO prescribing indicators that prescription patterns did not adhere to the ideal values provided by WHO EDL. It was shown that these diseases were caused by inadequate personal hygiene practises. Transmission incidents have also been reported as a result of negligence and clothing sharing while the sick person is still there. In a few instances, this may have happened accidentally as well. We got to the conclusion that there is a very big impact on quality of life as the DLQI scale was used to analyse the influence of the state of the individual's life. With patient counselling and the distribution of booklets, awareness was raised on the safety measures that should be followed to prevent both the re-infection and the recurrence of superficial fungal infections.

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