EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 11
Issue: 04
336-354
Year: 2024

A STUDY ON VARIOUS SKIN DISEASES AND PRESCRIBING PATTERN IN DERMATOLOGY OPD OF A TERTIARY CARE TEACHING HOSPITAL

R. Gayathri, R. Shivani, Razia Ansari* and Rida Fathima

India.

***Corresponding Author: Razia Ansari**

India.

Article Received on 21/02/2024 **Article Revised on 12/03/2024** **Article Accepted on 02/04/2024**

ABSTRACT

Skin diseases are a common morbidity in all ages, irrespective of gender. Some of them may be a minor while some may be life- threatening. Many of the skin infections were contributed by negligence, poor personal hygiene. Instructions on self-care and hygiene would be very useful in most of the patients to reduce the skin related problems. Drug utilization study is an effective tool to promote rational drug prescribing. Causes of irrational use of drugs include lack of knowledge, skills or independent information, unrestricted availability of medicines, inappropriate promotion of medicines. A standard tool to measure the severity of the disease and to evaluate the condition of the patient helps us to improve the health-related quality of life. Using such a tool makes a study more accurate and effective to predict the results. **Methodology:** A Prospective study was conducted in the OPD in Dermatology ward for a period of 6 months. A sample of 106 was considered and were evaluated for the study. The study was executed at Chalmeda Anand Rao Institute of Medical Sciences, Karimnagar. **Results:** Our study constituted 106 subjects out of which (52.8%) were males and (47.2%)were females where male preponderance for dermatological diseases was higher. The age group 21-30 were found to be maximum. The patients of low status were found to be the highest prone to infections. Infective diseases were more common than non-infective and 35.8% of fungal diseases were found. Prescribing pattern was analyzed and anti- histamines were the most prescribed drug among the population. QoL was assessed by using Dermatology Life Quality Index. Furthermore, the effect of various skin diseases on the QoL of patients was significant. **Conclusion:** The prevention of skin diseases necessitates a need for better health education, improved hygiene and good living standards. Public resources should make people aware of skin diseasesand their preventive measures. So that we can reduce the burden of skin diseases in our society. Although most of the drugs were prescribed rationally, involvement of Clinical Pharmacist in patient care may help in every aspect. According to the analyzed results and theconclusions made are; skin disease in one of the major health issues which affects the daily livelihood of human kind. Assessment of drug usage and quality of life will bring awareness with respect todiseases and improve the quality of life.

KEYWORDS: Skin diseases, Out-Patient department, Prescribing pattern, Clinical Pharmacist, Quality of life.

1. INTRODUCTION

- Skin has a major role in protecting and fostering life. The skin of the body functions as an organ, a differentiated structure is consisting of cells and tissues.
- The most sensitive and top most layer of our human body is the skin; hence, it has "direct" contact with all the trigger factors that causes many infections and diseases.[1]
- Several intrinsic and extrinsic factors cause injury to the exposed skin 'Intrinsic factors- genetic, metabolic and immunological factors.' 'Extrinsic factors-chemical, environmental, and infectious agents.'
- Skin health affects the individual's self-esteem. Skin diseases affect people in all ages.[2]

1.1 Structure and Functions of the skin

The skin is differentiated into multiple layers, as shown below in Figure 1. The epidermis layeris primarily made of keratinocytes. The 'basement membrane' lies under the epidermis; this narrow, multilayered structure anchors the epidermis to the dermis. The layer under the dermis, the hypodermis, is mostly composed of fat. These structures are described below.

1.1.1 Functions of the skin

The skin has three major functions-

- Protection
- Thermoregulation;

- Sensation.

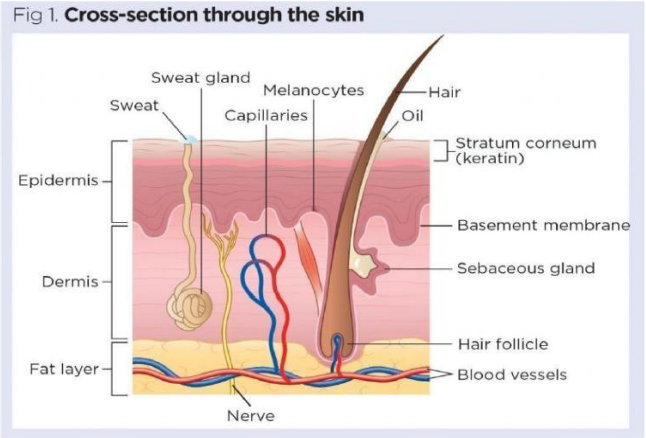

Fig. 1.1: Diagrammatic representation of cross-section through skin.

1.2 Epidemiology

Skin diseases are common and cause a considerable disease burden globally.[3] Collectively skin is the 18th most common cause of health burden worldwide, and it was the fourth major cause of non-fatal illness in 2010 worldwide.[4]

The diseases of skin consists 2% of Outpatient Department (OPD) consultations globally.

1.2.1 The overall prevalence of skin diseases

Many adults have at least one common skin disease and are the world's fourth major cause of non-fatal disease burden (Hay, et al., 2014). Approximately,1 in every 3 general practice patients has a dermatological problem. In more than half of these, the problems of the skin are the primary reason for medical consultation. Diseases of skin are rarely fatal but often chronic, causing disability and decreasing daily quality of life- QOL (Balieva, et al., 2017).

In total, 18 prevalence studies of the general population in developing nations (10 in sub- Saharan Africa) can be assessed representative of vast geographical areas; 13 of these studiesfocused on children, 4 to urban areas, and 17 to rural regions. Reported increased prevalence figures for skin diseases (21-87%), the following disorders being the most common in children:pyoderma (prevalence range 0.2-35%, 6.9-35% in sub-Saharan Africa), tinea capitis(1-19.7%), scabies (0.2-24%, 1.3-17% in sub-Saharan Africa), viral skin disorders (0.4-9%, mainly molluscum contagiosum), tinea capitis (1-19.7%), pediculosis capitis (0-57%), dermatitis (0- 5%), and reactions due to insect bites (0-7.2%). (WHO 2005)

1.2.2 The most common skin findings or diseases

The most frequently seen skin diseases are eczemas, with a prevalence of 9.1%–31.6%. Sebaceous gland diseases are also common: most acne is between 3.9% and 12.8%. Anotherjoint dermatological disease group is fungal skin infections; estimates of the prevalence of tinea have varied between 5.1% and 12.0% (Augustin et al. 2011).

1.2.3 Sex differences in the prevalence of skin diseases

There are contradictory results as to whether skin diseases are more common in males or females. Female predominance (57–67%) was found in three recent studies at primary practices in the U.K. However, male predominance was found in two more extensive population-based studies. It has also been reported that a more significant proportion of male patients than female require dermatological treatment. Some skin diseases are more likely to affect particular sex. Fungal skin infections are more common in males. More precisely, tine was detected in 17.9% of males and 6.4 percent of females, whereas psoriasis was discoveredin 8.9% of men and 4.5 percent of females (Schofield et al. 2011).

1.2.4 Skin diseases and Age

Skin diseases are common in all age groups. Atopic eczema is the most prevalent cause of skin illness among infants and pre-school children. Still, the number of skin infections such as virus warts, impetigo, and contact eczemas increases with age. The prevalence of sebaceous gland diseases increases towards adolescence. Acne vulgaris is most common in people between 12 and 17, In contrast, inflammatory skin diseases such as rosacea, eczemas, and psoriasis are most commonly found in people aged 30–50 years. Among the elderly, skin infections, pruritus, autoimmune skin diseases, and malignant skin tumors are the most common cutaneous disorders. Overall, the prevalence of skin diseases rises with age (Tamer et al. 2008).

1.2.5 Skin Diseases and Socioeconomic status

Socioeconomic status (SES) describes an individual's economic and sociological position in society and is usually measured by determining the educational level, income, and occupation. Education is the most specific indicator of socioeconomic status and is the recommended measure in epidemiological studies.

However, there is no unified consensus onwhether skin diseases disproportionately affect people with higher or lower SES.

1.2.6 Etiological factors with epidemiological importance

Three main factors have been commonly incriminated to explain the high prevalence and incidence of common skin diseases in developing areas: a low level of hygiene, including difficulties in access to water; climatic factors; and overcrowding.

There are difficulties in evaluating the few accessible data on these issues, particularly: a) The major predisposing factors are generally linked or interdependent, making epidemiological confusion sometimes almost impossible to rule out; b) The low general condition of hygiene and overcrowding in the areas make it difficult to study thoroughly this parameter owing to the lack of controls, the only option being, for example, to compare families with poor hygieneto others with less poor hygiene; and c) The majority of authors group all skin diseases as a single entity when it comes to these predisposing factors, although differences between different skin illness appear to be plausible.

1.3 Skin Infections

1.3.1 Fungal infections

- **Tinea corporis**

- Tinea corporis, also known as 'ringworm,' is a dermatophyte infection of the skin,affects all parts of the body except the hands (Tinea manuum), feet (Tinea pedis), scalp (Tinea capitis), bearded parts (Tinea barbae), face (Tinea faciei), groin (Tinea cruris), and nails (Onychomycosis or tinea unguium).
- *Trichophyton rubrum*, *T. tonsurans*, and *Microsporum canis* are the most common causes of Tinea corporis.[5]

Fig. 1.3.1: Ringworm of the body (Tinea corporis).

- A damp, warm environment, sharing towels and clothing, and wearing occlusive garments all aid in the spread of the fungus.[6]
- Tinea corporis is usually diagnosed clinical, especially if the lesion is typical.[5] A well-demarcated, sharply circumscribed, erythematous, annular, the scaly plaque with a raised leading edge, and scaling and central clearing on the body is characteristic.

Treatment

Non-pharmacologic measures

Patients should be instructed to dress in light, loose-fitting clothing because fungus grow in wet, warm conditions.[7] The skin must be kept clean and dry at all times.

Pharmacotherapy

- Commonly used topical antifungal agents include

Azoles (e.g. Econazole, Ketoconazole, Miconazole, Co-trimoxazole, Miconazole, Oxiconazole, Sulconazole, Sertaconazole, Eberconazole, and Luliconazole),

- ✓ Allylamines (e.g. Naftifine, Terbinafine).
- ✓ Benzylamine (Butenafine), Ciclopirox, and Tolnaftate.[8]

1.3.2 Parasitic skin infections

In Parasitic skin infections, parasite-host interactions are limited to the top layer of the skin. The central parasitic skin infections are scabies, pediculosis (Captious, Corporis and Pubis), tungiasis, and hookworm-related cutaneous larva migraines.

- **Scabies**

Several epidemiological factors have been indicated as influencing the distribution of scabies infestation in people, including age, gender, ethnicity, overcrowding, hygiene, and season. Scabies prevalence was previously used to be cyclical. Still, studies of long-term incidence suggest that epidemics and other observed fluctuations are multifactorial, being related to social and environmental changes such as wartime, overcrowding, and climatic changes.[9]

Fig. 1.3.2: Scabies bites.

- The frequency of secondary infection compounds scabies in resource-poor environments by group A Streptococci and Staphylococci.[10]
- The clinical symptoms of scabies follow the invasion of the adult mite into the skin.[11] Itching, which may be severe and increased at night, is the predominant symptom.
- The clinical signs are minor (<5 mm) papules or

pustules, and small increased or flattened burrows, marking the course of the mite within the epidermis. These are curved linear lesions that end in a tiny papule or pustule, the site of the adult mite.

These are difficult to find, as they are often criticized, but they are easiest to see on the hands, fingers, wrists, and ankles.

Treatment
Topical agents are considered to have first-line treatment, with oral Ivermectin generally being reserved for recurrent, difficult-to-treat cases, or for patients with crusted scabies; however, there is increasing interest in Ivermectin for the treatment of uncomplicatedscabies.

Drugs
Topical
Permethrin 5% Apply overnight (8–14 10-25% Leave on skin for 24 h. Crotamiton 10% Apply for 24 h, and then wash and reapply.
Gamma benzene hexachloride 1%, Melatonin 0.5%, Sulfur ointment 6%. Oral-
Ivermectin 200 μg/kg orally repeat after 1–2 weeks.

1.3.3 Inflammatory skin diseases
The production of pro-inflammatory cytokines activates the innate and adaptive immune systems in inflammatory skin disorders. Inflammatory skin diseases examples- Acne vulgaris, Psoriasis, Allergic contact dermatitis, Lupus erythematosus.

- **Acne vulgaris**

Acne is a disease of the pilosebaceous unit which consists of hair follicles in the skin linked with an oil gland. Seborrhea (Excess grease), non-inflammatory lesions, inflammatory lesions (Papules and pustules), and varied degrees of scarring are all clinical features of acne.[12]

Fig. 1.3.3: Acne vulgaris on the face.

Treatment
Drugs- Benzyl peroxide, Retinoids, Antiandrogens, Azelaic acid, Tetracyclines, Erythromycin, Isotretinoin.

1.3.4 Autoimmune skin diseases
Examples- Pemphigus, Dermatitis Herpetiformis, Alopecia areata, Pemphigus.

- **Alopecia areata**

Clinical features- Alopecia affects men and women equally.[13] Sixty percent of patients have their first patch before the age of twenty.

Patients usually report temporary hair loss and marked hair shedding. A circular or oval, completely bald, smooth patch involving the scalp or any hair-bearing area on the body is acharacteristic A.A. lesion.[14]

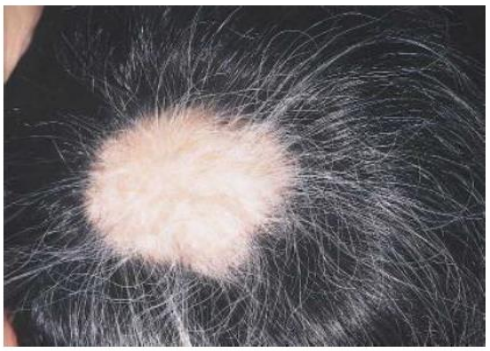

Fig. 1.3.4: Alopecia areata.

Treatment
Topical therapy
Corticosteroids, Minoxidil, Anthralin.

Systemic therapy- Photochemotherapy (Puva)
The psoralen is used topically or orally and then UVA is applied 1 or 2 hrs later. Treatments are given two to three times per week with the UVA dosage gradually increasing.

1.3.5 Allergic skin disease
Examples- Eczema, Urticaria, Seborrheic Dermatitis.

- **Urticaria**

Urticaria, often known as hives, is a common skin and mucous membrane illness characterised by erythematous, edematous, irritating, and transient plaques.

Etiology
Many factors such as infections (Respiratory infections), medicines (Penicillin, Aspirin, NSAIDs, Sulfonamides, Thiazide diuretics), food (Seafood, Citrus fruits), Psychogenic factors (Stress, Depression), and respiratory allergens are accused of etiology, but sometimes, it is idiopathic.

Fig. 1.3.5: Urticaria (Hives).

Clinical presentation

It involves red, swelling, and itchy plaques. The lesions normally disappear spontaneously within 2 to 3 hours without a trace. The patients are sometimes confronted with angioedema that can also involve the respiratory tract. Mucous membranes, such as the eyelids and lips, enlarge in this situation, causing pain and a burning sensation.(Melek Aslan Kayiran 2019)

Treatment

H1 Antihistamines- Diphenhydramine, Chlorpheniramine, Hydroxyzine, Cyclizine, Dimenhydrinate, Doxepin, Dopamine, Meclizine, Promethazine.

Cyclosporine, Omalizumab, Zafrilukast, Montelukast.

1.4 Evaluation of drug use pattern

- The assessment of drug utilization is essential for clinical, educational, and pharmacoeconomic purposes.[15] Setting standards and evaluating the quality of care through performance review should become part of everyday clinical practice.

- There are many problems in prescription drugs like overuse of multivitamins, irrational drug combinations, unnecessary use of antibacterial in fungal conditions, and prescribing medications of the same class in India.[16,17] It also plays a role in the development of antibiotic resistance. Dermatologists prescribe over 5% of all antibiotics worldwide, and the majority of the illnesses require long-term treatment.[18,19]

- Appropriate or rational use of medications, according to the 1985 WHO Conference of Experts on Drug Use, occurs only when medications are prescribed when clinically indicated and in the proper dosages for the suitable duration and at the lowest cost bothto the patient and their community.

- In addition, skin problems are misdiagnosed and treated. Thus, continuous monitoring is needed to evaluate drug use patterns to detect any changes from contemporary practices or available guidelines. As a result, drug consumption studies are urgently needed to generate data.

- Most skin diseases are chronic, and they require lifelong treatment. Therefore appropriate diagnosis by a physician and rational prescription of drugs based on his understanding of both risk and benefit of pills is an essential component of drug therapy.[20] Various combination of medications generally used in the treatment of skin diseases like a proactive Antibiotic, Antifungal, Benzoyl peroxide, Steroids, Salicylic acid, Anti-histaminic, Vitamins and Minerals, Analgesics usually depends upon prescriber's choice.[21]

- The data regarding the pattern of drugs used in India, particularly in dermatology departments, are minimal. Ignorance of the seriousness of the disease and improper medication worsens the health condition. More than 80% of the population suffering from skin problems may not seek medical help.

1.5 Counselling

Counselling is a process where the clinician must relate to the patient with three key personality attributes: Empathy, positive regard, and a non-judgmental attitude. Counselling would be helpful with patients who have a disfiguring skin condition and hence have some difficulty when "facing" the public or with those whose skin condition impacts their relationships.

1.6 Awareness

Skin changes may also indicate the involvement of more severe diseases that needtreatment.

Previously, such conditions were ignored or given minimal importance by health officials because they did not, on the whole, kill individuals, and they often did not present in tertiary care facilities.

Hygiene refers to conditions and practices that use to maintain health and prevent the spread of diseases. According to World Health Organization (WHO), safe water, sanitation, and hygiene (WASH) can contain at least 9.1% of the global disease burden and 6.3% of all deaths.[22,23] WASH is critical in preventing and treating all the 17 neglected tropical diseases (NTDs) scheduled for intensified control or elimination by 2030. Therefore, WASH is a global strategy for maintaining sustaining progress on eliminating NTDs.[24,25]

The core to tackling the problems is proper training at the primary care level. Many of these conditions have quite simple treatments, and they aren't that expensive. Treatment will confer significant gains to both personal and public health." (WHO Vol 83: 2005) therefore, maintaining good personal hygiene is necessary for physical, mental, and socialwell-being.[26]

1.7 Impact of skin diseases on qol

Skin conditions have significant threat to patients' well-being, mental health, ability to function, and active in social activities, a measure of impairment defined broadly by the WHO as ability of person to be involved and engaged in relations with others. Quality of life(QoL) tools help to estimate the impact of medical illness on various health determinants.

The Dermatology Life Quality Index (DLQI) and the Skindex are two QoL measurement tools that can be adapted to diverse contexts.[27]

Skin disorders have a profound detrimental effect on the quality of life of the general population by increasing the suffering in terms of a physical, social, psychological, and financial burden as most skin diseases are chronic and require more prolonged duration treatment.[28]

Setting medical treatment standards at all levels of the health-care delivery system canimprove quality of life. Setting standards and evaluating the quality of care through performance review should become routine in clinical practice.[29]

1.8 Dermatology life quality index (DLQI)[30]

The Dermatology Life Quality Index questionnaire is invented for patients over 16. It is self-explanatory and can be given to a patient without a thorough explanation and asked to fill out. It normally takes one or two minutes to complete.

The Dermatology Life Quality Index (DLQI) is a common, self-administered, and user- friendly validated questionnaire. The DLQI is designed to measure adult patients health- related quality of life suffering from the disease of the skin.

About the questionnaire

Published in 1994, the DLQI was the primary dermatology-specific quality of life questionnaire. The DLQI is a 10-question survey that asks patients about the impact of skindisorders on several elements of their health-related quality of life in the previous week.

It has been used in over 80 nations for a variety of skin conditions and is available in over 110 translations. Over 3,000 publications have described it, including numerous multinational studies. The most often utilised patient-reported outcome is the DLQI.

Recall period

The questions were created with a one-week recall period (i.e., the last seven days). The DLQI is self- and can be simply handed to the patient asked to fill it in. It is unnecessary togo into extensive research.

2. Review of literature

1. T. Praveen Kumar, S Shivani conducted a prospective observational study titled "Epidemiological study of various skin diseases and prescription pattern of drugs in dermatological OPD" in and around Khammam region in 2020. The study included a total sample of 300 patients from the outpatient department of Dermatology of district headquarter Government hospital Khammam. The study was conducted for over six months from November 2018 two April 2019. The study's main objective was to identify the prescription pattern of drugs in the skinoutpatient department and know the distribution of clinical types based onage, gender, socio- economic status, and disease; out of 300 patients included in the study, 151 were male, and 149 were females. The study revealed that most of the cases identified were inflammatory 34%, followed by parasitic 28.3% Fungal 19.6%, bacterial 14.3%. The least percentage was observed with viral diseases, 3.6%. Female patients were more susceptible to scabies, Tinea corporis, eczema, acne, urticaria. The prescription pattern of drugs included antihistamines 23.8%, antacids 20.9%, antibiotics (20.8%) followed by antifungals 8.4%, anti-parasitic 8.3%, corticosteroids 5%. Creating public awareness regarding personal hygiene and healthy living was recommended to improve the quality of life and reduce the burdenof skin diseases.
2. Md. Razu Ahmed, Md Khorshed Alam Mondal performed a descriptivestudy titled "The Pattern of Skin and venereal disease among the patients attending OPD of Dermatology and Venereology department" of Rangpur Medical College, Bangladesh. This study comprises 6203 patients attending the OPD Rangpur Medical College and hospital Rangpur Bangladesh during Jan 1st to 31st December 2019. The study included newly diagnosed cases, and relapsing Cases are presented in the OPD irrespective of gender and age. The diagnosis is based on a clinical basis out of 6203 patients; 3373 were male and 2830 were females. Males were the most commonly affected age group between 15 to 29 years carried maximum incidence. The prevalence of noninfective dermatoses was higher than infective dermatoses. Fungal infection and eczema were the largest groups in their respective categories.
3. Md. Niyamat Alahi, Md. Anowar Hossain, Abu Sayeed Md conducted a cross- sectional study titled, "Pattern of skin illnesses among patients attending OPD of Dermatology and Venereology in a tertiary care hospital in Bangladesh". The study was conducted in OPD from 2013 to2016 for four years. A total number of 119,228 out of which 57825 were men and 61403 were women—the socio-demographic profiles and disease patterns were recorded in a data sheet. Infective diseases were more common than noninfective. Infective diseases found parasitic, fungal, bacterial, viral, SDS, and nonspecific infections were found. In the case of

noninfective conditions, eczema, acne, vitiligo, urticaria, neoplastic skin disorders Were found. A study was performed that infectious disease is mostly bacterial and parasitic add still predominant in Bangladesh. It was found by the research that there is a considerable burden on alpha skin diseases in the OPD.

4. Sonia Jain, M.S Barambhe, Jyoti Jain, UN. Jajoo, Neha Pandey performed a community-based observational study titled "Prevalence of Skin Diseases in rural Central India", in and around Wardha from October 2011 to March 2012. Patients 10yrs old and above of both gender were included in the study. The study participantswere enquired about the potential risk factors of skin diseases with a questionnaire. The questionnaire included age, gender, residence, social, economic variables, social habits, and family history ask skin diseases. The height, weight, BMI, and BP are very corded clinically. The study results show that eczema was the most common dermatosis found affecting 60% of females, and fungal infections were found to be more in female participants. Fungal infections and acne were more in the adolescent age group, accounting for 17.4% to 30.4%. The study reveals a higher prevalence of eczema in females and fungal infection in males. Adolescents suffered from fungal infections and acne due to pubertal change. Various causes such as environment, poor living conditions, overcrowding are factors, and the entire population between 21 and 50 years of age was more commonly affected by eczema and infectious dermatoses.

5. Saravana Kumar RT, Prasad GS, Ragul G, Mohanta GP, Manna PK, Moorthi C performed a study in Dermatology titled "Study of prescribing pattern of topical corticosteroids" Raja Mutthaiah College and Hospital's department Chidambaram, Tamil Nadu. Collected a sample size of 500 between November 2011 to May 2012. Data collection form used to collect data that included age, gender, drugs prescribed, the strength of drugs, mode of drug administration, and duration of therapy. In the collection of prescriptions, 69% we males, and 31%were of females. 155 prescriptions, psoriasis was higher with 43.6%, followed by dermatitis with 31%. With 1.82 percent of the population, ulcerative erythema, nodosum, leprosum, and subacute cutaneous lupus erythematosus were the least common. The prescription ofcorticosteroids was very potent and was prescribedonly unless the diagnosis is prettysure.

6. Md. Saleem TK, Dilip C, Nishad VK performed a study titled "Assessment of drug prescribing Pattern in Dermatology OPD" Inthe tertiary care hospital Malabar, Kerala. The study was a prospectivestudy carried out over six months from August 2010 to January 2011 with a sample size of 500. Out of 500, 248 were female, and 252 were male. The age group of 20-29 years was accounted for the highest number of patients. The number of drugs per prescription varied from1 to 7, of which the most commonly prescribed systemic agents were antihistamines, antibiotics and antifungals. Topical steroids and their combination and topical antifungal agents were the most widely prescribed topical agents. This study revealsthat the generic prescription is very low.

7. Md. Saleem TK, Dilip C, Nishad VK performed a study titled "Assessment of drug prescribing Pattern in Dermatology OPD" Inthe tertiary care hospital Malabar, Kerala. The study was a prospectivestudy carried out over six months from August 2010 to January 2011 with a sample size of 500. Out of 500, 248 were female, and 252 were male. The age group of 20-29 years was accounted for the highest number of patients. The number of drugs per prescription varied from1 to 7, of which the most commonly prescribed systemic agents were antihistamines, antibiotics and antifungals. Topical steroids and their combination and topical antifungal agents were the most widely prescribed topical agents. This study revealsthat the generic prescription is very low.

8. Monika Kohli, Balvir S. Tomar, Rakesh Bilawal conducted a study titled "Prevalence and demographic profile of skin disorders in school-going children of urban and rural Jaipur." A descriptive cross-sectional study was conducted in 410 children aged 6-17 years from 10 randomly selected schools in Jaipur from Jan 1st, 2017 to Jun 30th, 2018, and collected A detailed history of socio-economic status and standard of sanitation and physical examination. A clinical diagnosis was made. Matter of duration, number, progression, symptoms, family history of skin disorders, history of past illness, allergy, Atopy, treatment, and dietary history recorded in the data collection form. Out of 410 children, males were 60.7%, whilefemales were 39.3%. Skin disorders were found to be prevalent in 48.3 percent of school-aged children. The skin disorders were more common in females (59.6%) than males (41%). Seborrhoea capitiswas the most common disease, followed by acne vulgaris. School- aged children have a high prevalence of skin disorders.

9. Mrs. Manjusha Sajith, Kaveri D Lokhande, Soumya Padma, A.P. Pawar performed a prospective study titled "Prevalence of various skin disorders and prescribing pattern of antihistamines and tertiary care hospitals." The study wasconducted for a sample size of 320, including 158 males and 162 female patients for four months. Patients of all ages and genders were included in the study. All the relevant data for the study was collected, which has age, gender, and drug- related data such as the name of the drug,

dosage, frequency, duration, route of administration, and diagnosis. The maximum number of patients was within the age group of 20-30 years, and the minimum was children. Acne was the most common disease, followed by eczema, and antibiotics were the mainly prescribed drug followed by antihistamines. The majority of medicines were defined by brand and suggested periodic evaluation of prescribing patterns to improve prescribing standards.

10. Dr. Sanjay Purohit conducted a Retro-Prospective study titled "Epidemiological study of dermatological disorders at tertiary care centre". The study duration was of 6 months from January 2018 to June 2018. A total sample of 1200 patients were considered out of which 672 were males and 528 were females. Detailed clinical history with general physical examination was done and recorded in the proforma and consent was given to them. The study revealed that fungal infection was the most common disease and was found in 204 patients followed by bacterial infection and viral infection. The study concluded that the climate, occupation, gender and age of the patient were associated with the occurrence of skin diseases. Fungal diseases, eczema and contact dermatitis were the most common.

11. K.B. Yap, MG Siew, CL Goh conducted a retro-prospective study at the National Skin Centre, Singapore titled "Patterns of skin diseases an elderly seen at the National Skin Centre (Singapore) in 1990" for a period of 1 year from January 1st1990 to December 31st 1990. A total sample of 2571 patients aged 65 years and above were studied. The male to female ratio was 1.3 to 1 and the pattern of skin problemswere different compared with the young. In the elderly, xerosis and eczema were very common. The most common dermatosis in the elderly is eczema. Eczema, fungal, viral infections and psoriasis were the least common diseases seen in the elderly compared with the general population.

3. Need for the study

- This study assess the overall prevalence of distribution of skin diseases, prescribing pattern of drugs and impact of skin diseases on quality of life of patient.
- To create public awareness regarding personal hygiene and promoting healthy living to reduce the burden of skin diseases.
- The prevention of skin diseases – a need for better health education, improve hygienic and good living standards.
- To assess how quality of life affects the patients with skin diseases.

4. AIM AND OBJECTIVES

Aim of the study

The aim of the study is to identify the various skin diseases, prescription pattern and impact of skin diseases on quality of life of patients.

Objectives

- To identify the overall prevalence of skin diseases.
- To assess the prescribing pattern of drugs.
- To evaluate the impact of skin diseases on quality of life.
- To educate the patients regarding different skin ailments.

5. Methodology

5.1 Study site

This study was carried out in Chalmeda Anand Rao Institute of Medical Sciences,Bommakal, Karimnagar.

5.2 Study design

Prospective, questionnaire based observational study.

5.2.1 Study period

The study was conducted over a period of 6 months.

5.3 Sample size

Individuals.

5.4 Study population

Patients attending dermatology OPD.

5.5 Study criteria

5.5.1 Inclusion criteria

- Patients of all ages including both the gender and with different types ofdermatological diseases.

5.5.2 Exclusion criteria

- Patients already recruited in the study coming for review to the OPD, CAIMS.
- Pregnant women.
- Lactating mothers.

5.6 Source of data

- Patient record and a specially designed (Patient data collection form) isused to obtain the data required for the study.
- Direct communication with patients and their care takers.

5.7 Parameters to be considered

- Demographics of patients.
- Diagnosis.
- Treatment.
- Assessment of quality of life (QOL) by Questionnaire.

5.8 Study procedure

Male and female patients visiting outpatient settings at CAIMS and male and female were reviewed and the subjects who met the inclusion criteria were enrolled. A

suitable data collection form was designed to collect, document and analyse the data. Further the patients are classified according to their demographic details, social status. Then the patients were categorized accordingto their disease condition. Then the drugs in the prescription were classified according to the pharmacological classification. The prevalence of skin diseasesandpattern of prescribed drugs were identified.

5.8.1 Dermatology life quality index

The Dermatology Life Quality Index (DLQI) is a simple, self-administered and user- friendly validated questionnaire. The DLQI is designed to measure the health-related quality of life of adult patients suffering from a skin disease.

The DLQI questionnaire, first introduced by Finlay and Khan, in 1994 was usedas the study instrument for this study after obtaining a formal written permission. DLQI is a validated questionnaire which grades QoL by assessing the following domains: (a) physical symptoms and feelings (questions 1 and 2), daily activities (questions 3 and 4), (c) leisure (questions 5 and 6), (d) work/school (questions 7), (e) personal relationships (questions 8 and 9), and (f)treatment (question 10). Each question is scored as "very much" (score 3), "a lot" (score 2), "a little" (score 1), and "notat all" (score 0), keeping in mind the problems faced the previous week due to the disease. Final DLQI score is the sum of all scores (range0–30). High scores indicate poor QoL.

DLQI score interpretation is done as follows

0–1 no effect on patient's life
2–5 small effect on patient's life
6–10 moderate effect on patient's life
11–20 very large effect on patient's life
21–30 extremely large effect on patient's life.

Patients were asked to fill up the DLQI questionnaire without assistance.

5.9 Study methodology

Data was collected, documented in the data collection form and entered intoMicrosoft Excel and analysed using GraphPad Prism software version-8.

- Chi square test was used.

6. RESULTS

A Prospective observational study was conducted in a out-patient setting of Chalmeda Anand Rao Institute of Medical Sciences (tertiary care hospital) for a period of 6 months. A total of 106 patients were recruited under inclusion and exclusion criteria.

Demographic data

Table 6.1: Patient distribution based on Gender.

Gender	No. of patients	Percentage (%)
Male	78	73.6
Female	28	26.4
Total	106	100

In our study, we screened 106 cases for skin related problems. Out of 106 patients 78 (73.6%) were male and 28 (26.4%) were females, results shown in Table 6.1 and Figure 6.1.

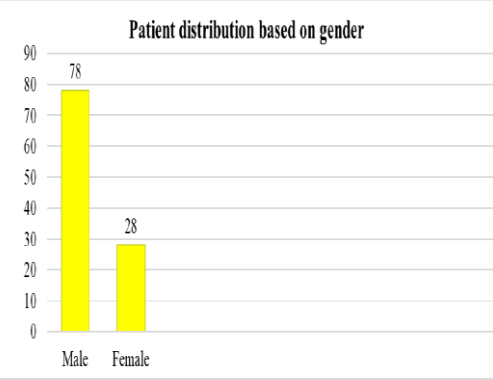

Fig. 6.1

Table 6.2: Patient categorization based on Age.

Age group	No. of patients	Percentage(%)
0-10	6	5.7
11-20	18	16.9
21-30	27	25.47
31-40	19	17.9

41-50	17	16.04
51-60	16	15.09
>60	3	2.8
Total	106	100

Out of 106 patients, 6 (5.7%) patients were found between the age group of 0-10, 18 (16.9%) were in between 11-20, 27 (25.47%) were in between 21-30, 19 (17.9%) were in between 31-40, 17 (16.04%) were in between 41-50, 16 (15.09%) were in between 51-60, 3 (2.8%) were in greaterthan 60. The results were shown in Table 6.2 and Figure 6.2.

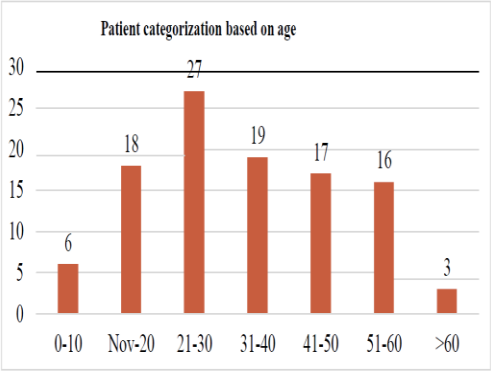

Figure 6.2

Table 6.3: Distribution of Skin Diseases among the study population.

Type of infection	No. of patients	Percentage (%)
Fungal skin diseases	38	35.8
Autoimmune skin diseases	19	17.9
Parasitic skin diseases	15	14.1
Inflammatory skin disease	12	11.3
Pigmentary skin diseases	7	6.6
Allergic skin diseases	6	5.67
Bacterial skin diseases	5	4.7
Photosensitive skin diseases	1	0.9
Viral skin diseases	1	0.9
Others	2	1.88
Total	106	100

Out of 106 patients, fungal diseases have been found to be 38 (35.8%), 19 (17.9%) have been found for Autoimmune diseases, 15 (14.1%) have been found for parasitic diseases, 12 (11.3%) have been found for inflammatory skin diseases, 7 (6.6%) have been found for pigmentary diseases, 6 (5.6%), 1(0.94%). The least observed were viral 1 (0.94%) and photosensitive disease, followed by 1 (0.94%) have been found for other category of skin diseases. The results were summarized in Table 6.3 and Figure 6.3.

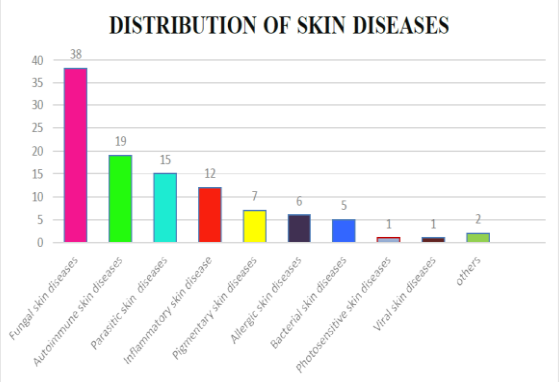

Figure 6.3

Table 6.4: Medication categories prescribed for patients.

Class of drug	No. of drugs	Percentage (%)
Anti-Histamines	95	17.27
Antibiotics	50	9.09
Anti-Virals	20	3.63
Corticosteroids	86	15.63
Immunosuppressants	45	8.18
Anti-Leprotics	25	4.54
Anti-inflammatory agents	38	6.90
Anti-Fungals	75	13.63
Anti-Parasitics	67	12.18
Vitamin supplements	40	7.27
Others	9	1.63
Total	550	100

A total of 550 medicines were prescribed for 106 patients. Anti-histamines were the most prescribed drug (17.27%) among the population, followed by other category of drugs as shown in the Table 6.4 and Figure 6.4.

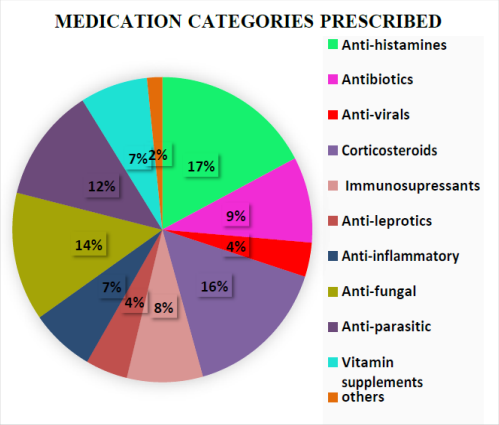

Figure 6.4: ***Disease wise distribution.***

Table 6.5: Bacterial diseases categorization.

Bacterial disease	No. of cases	Percentage (%)
Acne	3	60
Leprosy	2	40
Total	5	100

Out of 5 bacterial diseases, Acne has been found to be highest in number 3 (%) followed byleprosy 2 (%). The results were shown in Table 6.5 and Figure 6.5.

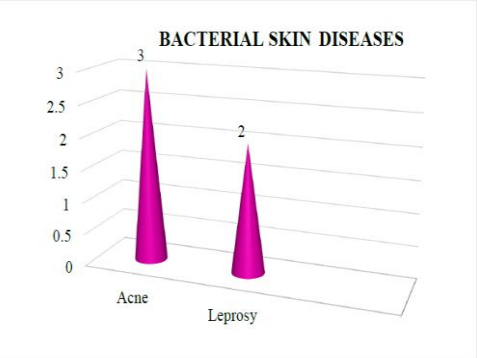

Figure 6.5

Table 6.6: Fungal diseases categorization.

Fungal disease	No. of cases	Percentage(%)
Tinea corporis	18	47.4
Tinea cruris	12	31.6
Tinea faciei	8	21.05
Total	38	100

Out of 38 fungal diseases, Tinea corporis has been found to be highest in number 18 (47.4%) followed by, Tinea cruris 12 (31.6%), and Tinea faciei 08(21.5%). The results were summarizedin Table 6 and Figure 7.

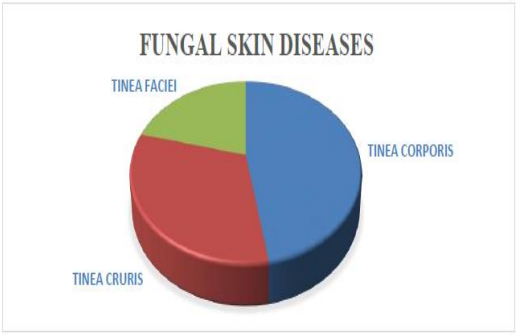

Figure 6.6

Table 6.7: Parasitic diseases categorization.

Parasitic disease	No. of cases	Percentage (%)
Scabies	15	100

In our study, Scabies is the only parasitic disease of 15 cases reported. The results were shown inTable 6.7 and Figure 6.7.

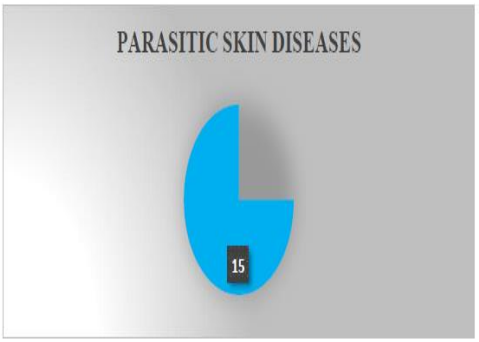

Figure 6.7

Table 6.8: Viral diseases categorization.

Viral disease	No. of cases	Percentage (%)
Herpes zoster	1	100

In our study, Herpes zoster is the only viral disease reported shown in Figure 6.8.

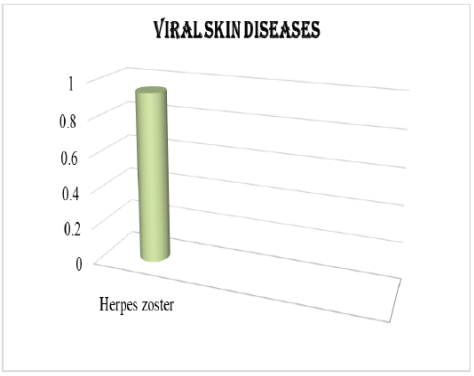

Figure 6.8

Table 6.9: Inflammatory skin diseases categorization.

Inflammatory skin diseases	No. of cases	Percentage (%)
Eczema	5	41.7
Contact dermatitis	7	58.3
Total	12	100

Out of 12 Inflammatory skin diseases, Eczema has been found to be highest in number, 5 (41.7%) followed by Contact dermatitis 7 (58.3%). The results were summarized in Table 6.9 and Figure6.9.

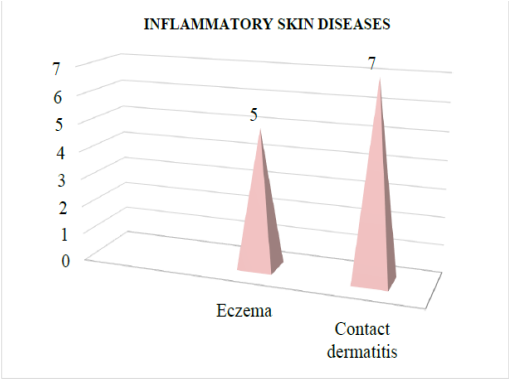

Table 6.10: Pigmentary skin diseases categorization.

Pigmentary skin diseases	No. of cases	Percentage (%)
Vitiligo	7	100

In our study, Vitiligo is the only disease of 7 (100%) cases reported. The results were summarizedin Table 6.10 and Figure 6.10.

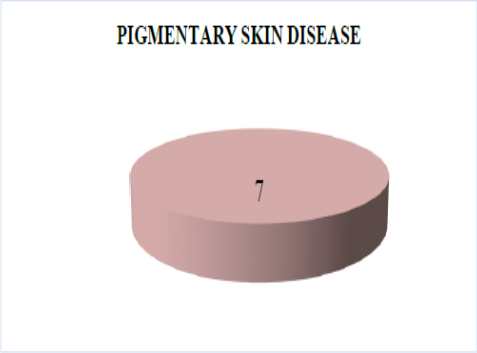

Figure 6.10

Table 6.11: Photosensitive skin diseases categorization.

Photosensitive skin diseases	No. of cases	Percentage (%)
Melasma	1	100

In our study, Melasma 1(100%) is the only disease reported. The results were summarized in Table 6.11 and Figure 6.11.

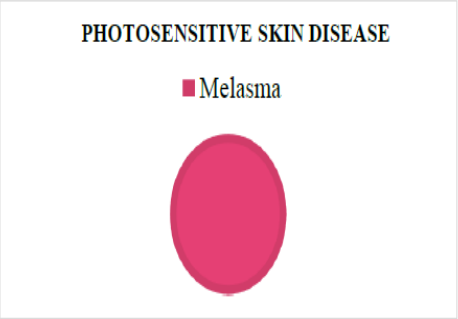

Figure 6.11

Table 6.12: Allergic skin diseases categorization.

Allergic skin diseases	No. of cases	Percentage (%)
Urticaria	6	66.7
Acne	3	33.3
Total	9	100

In our study, 6(66.7%) cases of Urticaria and 3(33.3%) cases of Acne were reported. The results were summarized in Table 6.12 and Figure 6.12.

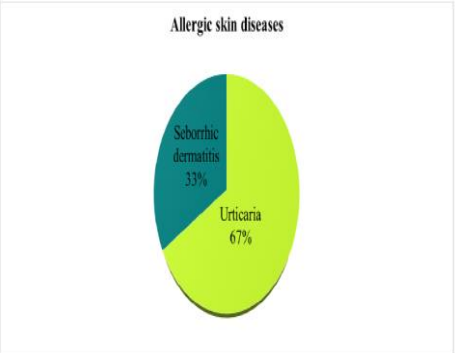

Figure 6.12

Table 6.13: Autoimmune skin diseases categorization.

Autoimmune skin diseases	No. of cases	Percentage (%)
Psoriasis	10	52.7
Alopecia	9	47.3
Total	19	100

Out of 19 Auto immune skin diseases, Psoriasis has been found to be 10 (52.7%) and Alopecia has been found to be 9 (47.3%). The results were shown in Table 6.13 and Figure 6.13.

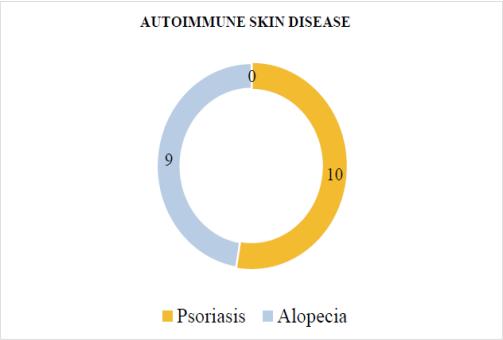

Figure 6.13

Table 6.14: Awareness of skin diseases.

Gender	Awareness	No Awareness	Total
Male	70	08	78
Female	19	09	28
Total	89	17	106

In our study, awareness among the skin diseases was very less among males compared to females,so awareness was created among 70 (90%) of males and 19 (68%) of females. Chi square test wasperformed and the value was found to be ($p<0.05$). The results were shown in Table 6.14 and Figure 6.14.

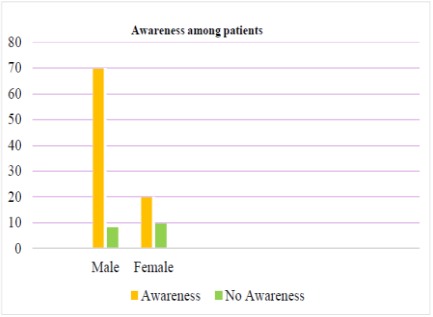

Figure 6.14

Table 6.15: Impact of Skin Diseases using DLQI or Assessment of Dermatological Life Quality Index (DLQI).

Severity	Number of patients	Percentage of patients
No effect	0	0
Small effect	2	1.9
Moderate	27	25.47
Very large	70	66.03
Extremely large	07	6.60

The study shows that severity of skin diseases has no effect of 0%, small effect of 1.9%, moderate effect of 25.47, very large effect of 66.03%, extremely large of 6.60%. Among these, as the very large effect was showing more percentage we can conclude that impaired quality of life on patients. Mean DLQI scores in this study increased with increasing age. The results were shownin Table 6.15 and Figure 6.15.

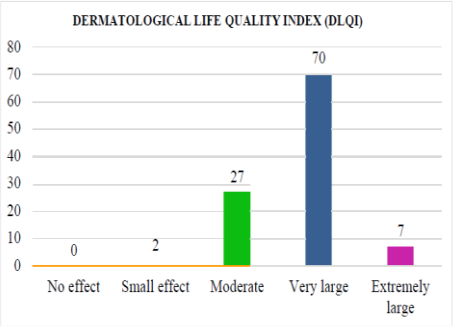

Figure 6.15

Table 6.16: Severity percentage of skin diseases in patients.

Severity	No. of male patients	Percentage of male patients	No. of female patients	Percentage of femalepatients
No effect	0	0	0	0
Small effect	2	1.89	2	1.89
Moderate	26	24.53	8	7.54
Very large	40	37.73	14	13.20
Extremely large	10	9.45	4	3.77

The percentage of male patients with high severity of skin disease is 37.73% while the percentageof female patients is 13.20%. Here, as the percentage of male patients is higher, it shows that themale have more impaired quality of life than females. The results were shown in Table 6.16 andFigure 6.16.

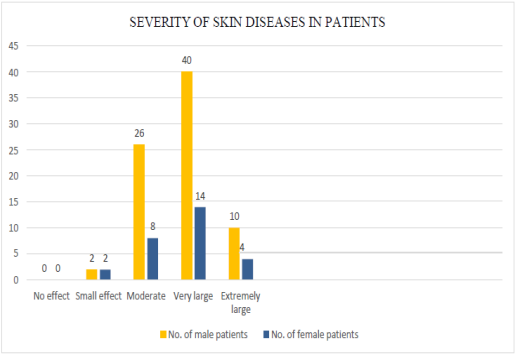

Figure 6.16

Table 6.17: DLQI questionnaire and their mean scores.

Impairment in activities	Total mean score of both the genders	Males	Females
Presence of itching	2.28	2.21	2.35
Embarassment	2.01	2.28	1.74
Interference in going out	2.39	2.67	2.11
Interference in clothing	1.53	1.64	1.43
Interference in social activity	1.14	1.17	1.52
Interference in sport	0.39	0.21	0.58
Interference in working	1.54	1.71	1.38
Interference inrelationship	0.59	0.5	0.69
Sexual disturbances	0.15	0.14	0.16
Treatment difficulty	0.78	0.75	0.82

Patients showed the highest mean score in interference in going out (2.39) followed by presence of itching (2.28), embarrassment (2.01), interference in working (1.54), interference in clothing (1.53), interference in social activity (1.140, interference in treatment difficulty (0.78), interference in relationship (0.59), interference in sport (0.390 and sexual disturbances (0.15). Female patients showed a greater impact on presence of itching

and interference in going out while male patients reported interference in going out and embarrassment. The results were shownin Table 6.17 and Figure 6.17.

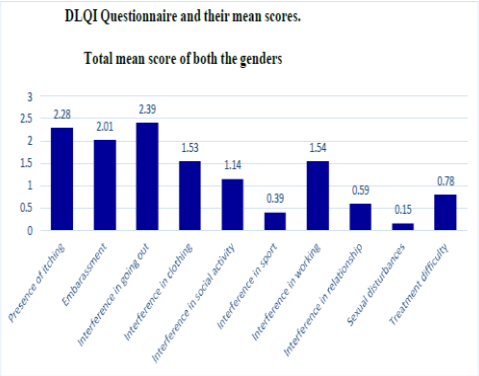

Figure 17

7. DISCUSSION

The pattern of skin diseases in India is influenced by the developing economy, social backwardness, varied climate, industrialization, access to primary health care, and different cultural factors.

Our study investigated that that minor skin complaints often cause more anguish than more serious medical problems. The factors associated with high prevalence of skin diseases include low socioeconomic status, over-crowding, and poor standards of hygiene. The study includes a total of 106 patients who met the inclusion criteria. The study is evaluated according to the age, gender, social status, disease distribution and prescribing pattern of drugs.

The present study was carried out in a tertiary care teaching hospital located in Karimnagar. Our study constituted sample of 106, out of which (52.8%) were males and (47.2%) were females. Our study showed male preponderance for dermatological diseases which is similar to study of Md.Razu Ahmed et., al. performed a study with 6203 patients among which 3373 (57.38%) were males while 2830 (45.62%) were females. All the cases were subjected tothorough history including name, age, gender, economic status, address, family and treatmenthistory. (Md. Razu Ahmed, et al., 2019)

Out of 106 subjects involved in the study 6 (5.7%) patients were found between the age group of 0-10, 18 (16.9%) were in between 11-20, 27 (25.47%) were in between 21-30, 19 (17.9%) were in between 31-40, 17 (16.04%) were in between 41-50, 16 (15.09%) were in between 51-60, 3 (2.8%) were in greater than 60. Majority of the subjects were of age 21-30 (25.4%). These finding were consistent with the study of Rashmeen Naaz. The majority of the patients belong to the age group were 21 to 40 years (55%).

According to Praveen Kumar, the study concluded that the patients in the age group of 11 to20 were found to be maximum (20%) followed by 0 to 10 aged patients (19%). Their study is evaluated according to age, gender, social status and disease. Based on the social status the low class were found to be the most affected with a percentage of 51.8%. The patients of middle status were found to be the highest prone to infections (54%) followed by low status (44%). (T. Praveen Kumar, et al., 2018)

The most common disease pattern seen in patients attending the dermatology OPD, out of 106 subjects, fungal diseases have been found to be 38 (35.8%), 19 (17.9%) have been found for Autoimmune diseases, 15 (14.1%) have been found for parasitic diseases, 12 (11.3 %) have been found for inflammatory skin diseases, 7 (6.6%) have been found for pigmentary diseases, 6 (5.6%), 1(0.94%). The least observed were viral and photosensitive disease with (0.94%). Our study is consisted with the study of Md. Niyamat Alahi (2016) who reported infective diseases were more common than non-infective.

Drug utilization study is an effective tool to promote rational drug prescribing. Our study constituted the data by evaluating the prescription The total 550 medications were prescribed for 106 patients. Anti-histamines were the most prescribed drug among the population. In the total of 550 drugs, prescription was analyzed in which Antihistamines (95) were the maximum prescribed with a percentage of 19.27, followed by Corticosteroids (86) 15.63%. The least prescribed drugs were other drugs (1.63%) comprising of emollients, antioxidants. The other drugs prescribed were antibiotics 50 (9.09%), antivirals 20 (3.63%), immune suppressing agents 45 (8.18%), antileprotics 25(4.54%) anti inflammatory 38(6.90%), anti-fungals 75(13.63%), anti-parasite 67(12.18%), vitamin supplements 40(7.29%) and others 9 (1.63%). Our study consisted the results with the study of S. Shivani (2018) who reported Anti-histamines were mainly prescribed in almost every prescription.

In our study disease wise distribution were evaluated. Out of 106 prescriptions obtained, 35.8% were fungal

diseases and among them T. corporis (16.98%) was the most common followed by T.cruris (11.32%), T.faciei 8(7.54%). The second most commonly observed type of skin disease was autoimmune (17.92%) with a (9.43%) of psoriasis and (8.49%) of alopecia. Acne and Leprosy were the two bacterial diseases reported with the percentage of 2.8 an and 1.8. Scabies was the only parasitic infection reported with a percentage of 14.5. The inflammatory diseases 12 (11.32%) consisted of eczema 5 (4.71%) and contact dermatitis 7 (6.62%) and were most observed in OPD. Vitiligo was the only pigmentary disease reported and same with the allergic disease-Urticaria. The least observed skin diseases were viral diseases with 0.94%. Other skin diseases like Lichen planus and Keloid, were also reported.

Assessment of DLQI was done in our study to analyze the impact of skin diseases affectingthe quality of life of the patient. Significant impairment of QoL was observed and worsening of QoL was observed with advancement in age, longer duration of disease, lack of awareness. Mean DLQI scores in this study increased with increasing age (Indian J Dermatol, 2015) and results are interpreted as follows; the severity of skin diseases has no effect of 0%, small effect of 1.9%, moderate effect of 25.47, very large effect of 66.03%, extremely large of 6.60%. Among these, as the very large effect was showing more percentage we can conclude that this reveals impaired quality of life on patients. Furthermore, the effect of various skin diseases onthe QoL of patients was significant

8. CONCLUSION

This study is mainly focused on the, prescribing pattern of drugs in dermatology OPD and impact of skin diseases on patient's quality of life. A huge burden of skin diseases is present in the OPD of tertiary care hospital with the predominance of infective disease mostly fungal, autoimmune and parasitic in which male patients were more susceptible. It has been established that overcrowding, poor living standards & poor hygiene are the major factors & correction of these conditions shall significantly reduce the occurrence of these dermatoses.

Assessment of drug usage with respect to diseases was analyzed, and drugs were prescribed rationally, involvement of clinical pharmacist in patient care may help in every aspect. On reviewing the questionnaire of the patients, it was observed that the males were at a higher risk of impaired quality of life compared to females. A positive impact on the QOL of patient was resulted through counselling and awareness. Public resources should make peopleaware of skin diseases and their preventive measures. So that we can reduce the burden of skindiseases in our society.

According to the analyzed results and the conclusions made are; skin disease in one of the major health issues which affects the daily livelihood of human kind. This study suggests that there is immense scope of improvement of good living standards- a need for better healtheducation. So such studies should be carried out on continuous basic.

REFERENCES

1. Clark RA, Ghosh K, Tonnesen MG. Journal of Investigative Dermatology, 2007; 127: 1018-29.
2. Sumana MH, Santhosh Kumar. Prescription analysis of drugs used in the outpatient department of dermatology at tertiary care hospital. Asian J of Biomedical and Pharmsciences, 2015; 5(46): 13-15.
3. The global burden of skin disease in 2010: an analysis of the prevalence and impact of skin conditions.Hay RJ, Johns NE, Williams HC, Bolliger IW, Dellavalle RP, Margolis DJ, Marks R, Naldi L, Weinstock MA, Wulf SK, Michaud C, J L Murray C, Naghavi MJ Invest Dermatol, 2014; 134(6): 1527-1534.
4. Saravanakumar RT, Prasad GS, Ragul G, Mohanta GP, Manna PK, Moorthi C. Study of prescribing pattern of topical corticosteroids in the department of dermatology in a multi- specialty tertiary care teaching hospital in south India. *Int J Res Pharm Sci*, 2012; 3(4): 685–87.
5. Differential diagnosis of annular lesions. Hsu S, Le EH, Khoshevis MR Am Fam Physician, 2001; 15, 64(2): 289-96.
6. Tinea corporis gladiatorum. Adams BBJ Am Acad Dermatol, 2002; 47(2): 286-90.
7. Tinea corporis, tinea cruris, tinea nigra, and piedra. Gupta AK, Chaudhry M, Elewski B Dermatol Clin, 2003; 21(3): 395-400.
8. New Antifungal Agents and New Formulations Against Dermatophytes. Gupta AK, Foley KA, Versteeg SG Mycopathologia, 2017; 182(1-2): 127-141.
9. CG Burkhart, CN Burkhart, KM Burkhart. An epidemiologic and therapeutic reassessment of scabies. Cutis, 2000; 65: 233-240.
10. BJ Currie, JR Carapetis, Skin infections and infestations in Aboriginal communities in northern Australia, Aust J Dermatol, 2001; 41: 139-143.
11. A Mahé, A Prual, M Konaté, P Bobin. Skin diseases of children in Mali: a public healthproblem. Trans R Soc Trop Med Hyg, 1995; 89: 467-470.
12. Degitz K, Ochsendorf F. Pharmacotherapy of acne. Expert opinion on pharmacotherapy, 2008; 1, 9(6): 955-7.
13. Muller SA, Winkelmann RK. Alopecia areata: an evaluation of 736 patients. Arch Dermatol, 1963; 88: 290-97.
14. Camacho F. Alopecia areata: clinical features. Dermatopathology. In: Camacho F, Montagna W, editors. Trichology: diseases of the pilosebaceus follicle. Madrid: Aula Medica Group, 1997; 417-40.
15. Shehwade DG, Pradhan SC. Auditing of prescriptions in a government teaching hospital and four retail, medical stores in Pondicherry. Indian J Pharmacol, 1998; 30: 408-10.

16. Soumerai S. Factors influencing prescribing. The Australian Journal of Hospital Pharmacy., 1988; 18(3): 9-16.
17. Hogerzeil HV. Promoting rational prescribing: an international perspective. Br J ClinPharmacol, 1995; 39(1): 1-6.
18. Divyashanthi CM, Nandhini A, Kumar SA. Study on drug utilization pattern of antibiotics among dermatology in-patients of a tertiary care teaching hospital, Karaikal, Puducherry. Int J Basic Clin Pharmacol, 2014; 3(6): 1072-7.
19. Chon SY, Doan HQ, Mays RM, Singh SM, Gordon RA, Tyring SK. Antibiotic overuse andresistance in dermatology. Dermatologic Therapy, 2012; 25(1): 55- 69.
20. Motaghare VM, Bajait CS, Turnakar A, Sontakke SD, Chavan S. Prescription pattern andadverse drug reaction profile of drugs prescribed in dermatology outpatient department at a tertiary care teaching hospital. Int J Pharm and Pharmacol, 2016; 3(4): 173-177.
21. Vineeta D, Sharad P, Ganachari MS, Geetanjali S, Santosh S. Assessment of drug prescribing pattern and cost analysis for skin disease in dermatological department of tertiary care hospital: An interventional study. J Pharmacovigil, 2016; 4(3): 211.
22. Global Water, Sanitation and Hygiene (WASH) facts. Available at https://www.cdc.gov/ healthy water/global/wash_statistics. Accessed Dec, 2017; 12.
23. United Nations Children's Fund (UNICEF): Water, Sanitation and Hygiene. Available at https://www.unicef.org/wash. I accessed it on Dec, 2017; 12.
24. World Health Organisation: Water, Sanitation and Hygiene for accelerating and sustaining progress on Neglected Tropical Diseases. A global strategy, 2015; 2020.
25. World Health Organisation: Hygiene. Available at http://www.who.int/topics/hygiene. Accessed Jan, 2018; 2.
26. The effect of skin diseases on quality of life in patients from different social and ethnic groups in Cape Town, South Africa. Jobanputra R, Bachmann M.
27. Joel JJ, Jose N, Shastry CS. Patterns of Skin Disease and Prescribing Trends in *Rural India*. *Sch Acad J Pharm*, 2013; 2(4): 304–09.
28. Abebaw T. Prescribing Pattern for Skin Diseases in Dermatology OPD in Boru Meda Hospital, North East, Ethiopia. Journal of Basic and Clinical Pharmacy, 2018; 9(1): 31-3.
29. Vineeta D, Sharad P, Ganachari MS, Geetanjali S, Santosh S. Assessment of drug prescribing pattern and cost analysis for skin disease in dermatological department of tertiary care hospital: An interventional study. J Pharmacovigil, 2016; 4(3): 211.
30. Lewis V J, Finlay A Y. Ten years experience of the Dermatology Life Quality Index (DLQI) J Investig Dermatol Symp Proc, 2004; 9(2): 169-180.