ORIGINAL ARTICLE

PREVALENCE OF SKIN DISEASES IN A DERMATOLOGY OUTPATIENT CLINIC IN RIMS, KADAPA, A CROSS-SECTIONAL, RETROSPECTIVE STUDY

N. L. Sirisha¹, M. Pavan Kumar², S. Sowjanya³

HOW TO CITE THIS ARTICLE:
N. L. Sirisha, M. Pavan Kumar, S. Sowjanya. "Prevalence of Skin Diseases in a Dermatology Outpatient Clinic in RIMS, Kadapa, a Cross-Sectional, Retrospective Study". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 57, July 16; Page: 9903-9909, DOI: 10.14260/jemds/2015/1

ABSTRACT: BACKGROUND: Dermatological diseases vary widely as a result of geographic location, climate, socioeconomic status and personal habits and internal factors such as age, gender and heredity. OBJECTIVE: The aim of the study was to determine the main causes for outpatient visits in dermatology outpatient clinic in RIMS Kadapa. MATERIALS AND METHODS: The outpatient clinic records of the department of dermatology RIMS Kadapa, dated between 1st March 2014 to 1st March 2015 were retrospectively assessed. Patients were grouped according to age, gender, and clinical diagnosis. RESULTS: A total of 8,545 new patients with 9,416 skin problems were included in the study. The study group was 52.3% female and 47.7% male. The age range was between 1 and 99 years. The most commonly encountered diseases were: contact dermatitis (11.7% of patients), scabies (8.9%), fungal infections (8.9%), urticaria (6.0%), acne (4.4% each). CONCLUSION: It appears that certain skin diseases contact dermatitis, scabies, fungal infections, urticaria, and acne causes serious health problems. Public health policies should be implemented in order to manage these problems rationally.

KEYWORDS: Acne, Contact dermatitis, Dermatophytosis, Prevalence, Scabies, Urticaria.

INTRODUCTION: Skin diseases, which are commonly encountered in the community, are an important disease group in healthcare units.¹ The development of skin disease is influenced by external factors, such as geographic region, climate, socioeconomic status, and personal habits, and internal factors, such as age, gender, and heredity. The prevalence of skin diseases varies from one country to another country and in various regions within the same country.² Dermato-epidemiology refers to study of the epidemiology of dermatological disorders.³ One of the need assessments in dermatology is to establish the size and nature of the dermatological needs based on epidemiological data. Epidemiology is often used to describe the distribution, causes and burden of diseases in human population. It also helps health service planners.

The definition of skin disease prevalence is important in planning therapeutic and preventive healthcare services. The ideal method for prevalence studies is the use of population based studies. However, many studies have been performed by examining the hospital application records of patients.

Three skin conditions, fungal skin diseases, other skin and subcutaneous diseases, and acne were in the top 10 most prevalent diseases worldwide in 2010.⁴ There are numbers of people in India suffering from common skin problems. They are found in children, young and adults as well as in old persons. The common skin problems are Acne, Burn scars, Hyperhidrosis, Psoriasis, Scabies, Skin grafting, Vitiligo, Pediculosis, Herpes simplex infection, Varicella, Herpes Zoster, Erythema, Urticaria etc.⁵ Most of the skin diseases are not notifiable diseases in the World. Therefore information on the frequency of skin diseases is limited.
As pattern of skin diseases varies in different parts of India we decided to undertake a retrospective analysis of skin disease as observed in Kadapa. This is original study, because this study was performed on the new patients who attended to dermatology outpatient clinics in the certain period of time.

OBJECTIVE: The aim of the study was to determine the prevalence of skin diseases and their distribution according to age and gender.

MATERIALS AND METHODS: In this study, the outpatient clinic records of the Dermatology department of Rajiv Gandhi institute of medical sciences Government college dated between 1st March 2014 to 1st March 2015, were retrospectively assessed. Cases with the doubtful diagnosis were excluded from the study. Diagnosis was made on clinical grounds and laboratory investigations were done whenever required.

RESULTS: A total of 8545 new patients were included in the study who were attended the dermatology outpatient clinic in RIMS Kadapa dated between 1march 2014 to 1march 2015. Out of the 8545 patients, 4469(52.3%) were female, and 4076(47.7%) were male (male/female=0.91). The greatest number of patients were (n=1870; 21.8%) was present in the 20-29 years of age group, while 1474 patients (17.1%) were 10-19 years of age and 1255 patients (14.6%) were 0-9 years of age. These three age groups constituted 53.5% of the total number of patients. The distribution of cases according to age and gender are given in table 1.

The most commonly encountered disease groups were dermatitis and eczema (244.4%), mycoses (13.8%) and parasitic disease (10.14%). These three disease groups constituted 48.34% of the observed cases. The frequencies and rates of the diseased groups are shown in table 2.

The three most commonly encountered diseases were contact dermatitis (11.7%), scabies (8.9%), dermatophytosis (8.9%). Urticaria (6%), acne (4.4%), atopic dermatitis (3.7%), lichen simplex chronicus (3.3%), furuncle carbuncle and cutaneous abscess (3.2%) followed. Hansen's disease formed 0.55% of total cases. Vesiculobullous disorders formed only 0.3% of the cases, out of which pemphigus group (0.2%) followed by bullous pemphigoid (0.09%). The distribution of 5 common diseases in this study is shown in table 3 according to gender. Age distribution of some common skin diseases are shown in table 4.

DISCUSSION: Rajiv Gandhi institute of medical sciences hospital contains 650patient beds with 170 specialists working in different branches. The majority of the patients attending to the dermatology clinic outpatient in RIMS were from rural areas. The most commonly encountered diseases diagnosed in the study were dermatitis and eczema (24.4%). Dermatitis and eczema were the most commonly encountered skin diseases in previous studies conducted in India6-11 USA12 and England13 The most commonly encountered disease in this disease group is contact dermatitis. Agriculture workers (Phytophotocontact dermatitis), occupational exposure to substances like cement, chemicals etc. are the responsible factors for contact dermatitis to become most common disease. The incidence of contact dermatitis is more in men (53.4%) in our study compared to study in turkey (42.7%).14 this may be due to occupational differences from region to region. Contact dermatitis was more common in the age group 20-29yrs whereas the incidence was more in 30-39yr age group in turkey study.
### Table 1: The Distribution of Cases According to Age and Gender

| Age (yr) | Male (n) | % | Female (n) | % | Total (n) | % |
|----------|----------|---|------------|---|-----------|---|
| 0-9      | 676      | 7.9| 579        | 6.7| 1255      | 14.6|
| 10-19    | 657      | 7.6| 817        | 9.5| 1474      | 17.1|
| 20-29    | 911      | 10.6| 959       | 11.2| 1870     | 21.8|
| 30-39    | 475      | 5.5| 680        | 7.9| 1155      | 13.4|
| 40-49    | 414      | 4.8| 704        | 8.2| 1118      | 13 |
| 50-59    | 355      | 4.1| 381        | 4.4| 736       | 8.5|
| 60-69    | 445      | 5.2| 319        | 3.7| 764       | 8.9|
| >70      | 143      | 1.6| 30         | 0.3| 173       | 1.9|
| **Total**| **4076** | **47.7**| **4469** | **52.3**| **8545** | **100**|

### Diseases

| Diseases                              | Patients | %  |
|---------------------------------------|----------|----|
| **Infectious and parasitic diseases** |          |    |
| Mycoses                               | 2720     | 28.8|
| Dermatophytosis                       | 841      | 8.9 |
| Pityriasis versicolor                 | 260      | 2.7 |
| Candidiasis                           | 200      | 2.1 |
| Viral infections                      | 464      | 4.9 |
| Viral warts                           | 146      | 1.5 |
| Herpes zoster                         | 178      | 1.8 |
| Herpes simplex infections             | 108      | 1.1 |
| Moluscum contagious                   | 32       | 0.33|
| **Parasitic diseases**                | 955      | 10.14|
| Scabies                               | 843      | 8.9 |
| Pediculosis                           | 112      | 1.1 |
| **Neoplasams**                        | 204      | 2.1 |
| Malignant neoplasm                    | 34       | 0.3 |
| Benign neoplasm                       | 170      | 1.8 |
| Melanocytic naevi                     | 102      | 1   |
| Other benign neoplasm of skin         | 68       | 0.72|
| **Diseases of the oral cavity, salivary glands and jaws** | 74 | 0.78 |
| Recurrent oral apthae                 | 51       | 0.54|
| Cheilitis                             | 23       | 0.24|
| **Diseases of the skin and subcutaneous tissues** | 764 | 8.1 |
| Infections of the skin and subcutaneous tissue | 304 | 3.2 |
| Impetigo                              | 172      | 1.8 |
| Cellulitis                            | 62       | 0.65|
| Pyoderma                              | 181      | 1.9 |
| Erythrasma                            | 45       | 0.4 |
| **Bullous disorders**                 | 34       | 0.3 |
| Pemphigus                             | 20       | 0.2 |
| Bullous pemphigoid                    | 9        | 0.09|
| Dermatitis herpetiformis              | 5        | 0.05|
| **Dermatitis and eczema**             | 2303     | 24.4 |
| Contact dermatitis                    | 1105     | 11.7|
| Lichen simplex chronicus              | 320      | 3.3 |
### Table 2: The frequencies and rates of the diseases groups

| Disease                                      | Male(n) | %    | Female(n) | %    | Total(n) | %    |
|----------------------------------------------|---------|------|-----------|------|----------|------|
| Contact dermatitis                          | 350     | 3.7  | 676       | 7.1  | 1026     | 11.8 |
| Scabies                                      | 178     | 1.8  | 148       | 1.5  | 326      | 3.7  |
| Dermatophytosis                              | 270     | 2.8  | 124       | 1.3  | 394      | 4.4  |
| Acne                                         | 80      | 0.84 | 33        | 0.3  | 113      | 1.3  |
| Other papulosquamous disorders               | 126     | 1.3  | 148       | 1.5  | 274      | 3.1  |
| Urticaria and erythema                       | 639     | 6.7  | 565       | 6.0  | 1204     | 13.7 |
| Urticaria                                    | 565     | 6.0  | 33        | 0.3  | 598      | 6.8  |
| Erythema nodosum                            | 33      | 0.3  | 27        | 0.3  | 60       | 0.7  |
| Erythema multiforme                          | 27      | 0.3  | 33        | 0.3  | 60       | 0.7  |
| Other erythematous condition                 | 14      | 0.1  | 14        | 0.1  | 28       | 0.3  |
| Radiation related disorders of skin          | 246     | 2.6  | 246       | 2.6  | 492      | 5.5  |
| Polymorphous light eruption                  | 246     | 2.6  | 246       | 2.6  | 492      | 5.5  |
| Skin disorders of appendages                 | 850     | 9.3  | 850       | 9.3  | 1700     | 19.3 |
| Acne                                         | 420     | 4.4  | 420       | 4.4  | 840      | 9.6  |
| Alopecia aerate                             | 118     | 1.2  | 118       | 1.2  | 236      | 2.7  |
| Androgenetic alopecia                       | 94      | 0.99 | 94        | 0.99 | 188      | 2.1  |
| Hirsutism                                    | 18      | 0.19 | 18        | 0.19 | 36       | 0.4  |
| Rosacea                                      | 25      | 0.2  | 25        | 0.2  | 50       | 0.6  |
| Miliaria rubra                               | 175     | 1.8  | 175       | 1.8  | 350      | 4.0  |
| Other disorders of skin and subcutaneous tissue | 829 | 8.8 | 829 | 8.8 | 1658 | 18.5 |
| Callus                                       | 82      | 0.8  | 82        | 0.8  | 164      | 1.8  |
| Melasma                                      | 210     | 2.2  | 210       | 2.2  | 420      | 4.7  |
| Other disorders of pigmentation              | 66      | 0.7  | 66        | 0.7  | 132      | 1.5  |
| Vitiligo                                     | 275     | 2.9  | 275       | 2.9  | 550      | 6.2  |
| Dermatosis papulosa nigra                   | 30      | 0.3  | 30        | 0.3  | 60       | 0.7  |
| Lupus erythematosus                          | 36      | 0.38 | 36        | 0.38 | 72       | 0.8 |
| Other disorders, not elsewhere classified    | 130     | 1.38 | 130       | 1.38 | 260      | 3.0  |
| Congenital malformations, deformations and chromosomal abnormalities | 25 | 0.26 | 17 | 0.18 | 42 | 0.48 |
| Neurofibromatosis                            | 17      | 0.18 | 17        | 0.18 | 34       | 0.4 |
| Icthyosis vulgaris                           | 6       | 0.06 | 6         | 0.06 | 12       | 0.1 |
| Xeroderma pigmentosus                       | 2       | 0.02 | 2         | 0.02 | 4        | 0.05 |
| Hansens                                      | 52      | 0.55 | 52        | 0.55 | 104      | 1.2 |

### Table 3: The distribution of the 5 most common diseases according to gender

| Disease          | Male(n) | %  | Female(n) | %  | Total(n) | %  |
|------------------|---------|----|-----------|----|----------|----|
| Contact dermatitis | 591     | 53.4 | 514       | 46.6 | 1105     | 11.7 |
| Scabies          | 404     | 47.9 | 439       | 52.1 | 843      | 8.9  |
| Dermatophytosis  | 361     | 42.9 | 480       | 57.1 | 841      | 8.9  |
| Acne             | 195     | 46.4 | 225       | 53.6 | 420      | 4.4  |
| Urticarial       | 220     | 38.9 | 345       | 61.1 | 565      | 6.2  |

---

**Note:** The tables and figures have been converted into their natural representation. The text at the beginning of the page has been omitted for brevity. The tables and figures have been converted into their natural representation. The text at the beginning of the page has been omitted for brevity.
Age Groups (Years):

| Disease         | 0-9 | 10-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 | >70 | T  |
|-----------------|-----|-------|-------|-------|-------|-------|-------|-----|----|
| Contact dermatitis | 157 | 163   | 177   | 127   | 176   | 95    | 139   | 71  | 1105 |
| Scabies         | 175 | 227   | 197   | 60    | 88    | 49    | 40    | 7   | 843  |
| Dermatophytosis | 53  | 143   | 203   | 161   | 143   | 53    | 52    | 33  | 841  |
| Acne            | 12  | 120   | 196   | 66    | 21    | 3     | 2     | 0   | 420  |
| Urticaria       | 45  | 47    | 126   | 80    | 110   | 76    | 67    | 14  | 565  |

Table 4: Age distribution of most common skin diseases

Scabies was 2nd most common disease in our study. The low socioeconomic status of such patients, the scarcity of clean water may act as contributor factor in this regard. The lowest and highest rate of scabies which is increased by factors related to community life conditions and non-compliance with hygiene rules, were reported in Japan (0.15%)\(^\text{15}\) and Mali (16.6%)\(^\text{16}\) Dermatophytosis infection were the 3rd most common disease in our study. Tinea cruris is the most common among this group followed by tinea corporis. Tinea faciei is rare among this group. The hot climate of the Kadapa may account for high incidence of fungal infection in the study group. Acne (4.4%), urticaria (6%), were relatively common both with female propendarence (53.6% & 61.1% respectively) in this study which is very close to turkey study.\(^\text{14}\)

Skin and its appendages disorders constitute around 9%. Infection of skin and subcutaneous tissues like pyoderma, furuncle, cellulitis, and abscess constitute 8.1%. Papulosquamous diseases encountered in this study (7.1%) while the most commonly encountered disease in this group was psoriasis (2.9%), followed by lichen planus (1.4%).

The incidence of Hansen's in this study is 0.55% which is less than 1% but very high compared to study in Imphal.\(^\text{17}\) The incidence of melasma was 2.2% which was more in females and those who are exposing to sun frequently.

CONCLUSION: Our study has clearly defined the different types of skin disease among the patients attended to the dermatology department of RIMS Kadapa. The study reveals that the people in this region are more prone to skin disease and the incidence of skin disease among females was more. The majority of the patients fall under the adult category. We found that allergic skin disease and skin infections were more common in this location.

The study represents a rough estimate of the incidence of skin disease in this location. It is clearly understood that the prevalence of skin diseases such as eczema and skin infections are more common in this region. This may be due to joint family, nature of occupation and living in unhygienic environments. Public awareness regarding personal hygiene and healthy living is necessary to reduce the burden of skin diseases and for improved quality of life in people especially in rural areas and developing nations.

ACKNOWLEDGEMENT: We are grateful to the Medical Superintendent, RIMS Hospital, Kadapa, for allowing us to use the hospital records.
REFERENCES:

1. Federman DG, Reid M, Feldman SR, Greenhoe J, Kirsner RS. The primary care provider and the care of skin disease: the patient's perspective. Arch Dermatol. 2001; 137: 25-29. PMID: 11176657.

2. Rook A, Savin JA, Wilkinson DS. The prevalence, incidence and ecology of diseases of skin, In: Rook A, Wilkinson DS, Ebling FJ, Champion RH, Burton JL, editors, text book of dermatology. Oxford university press: Mumbai 1987. P. 39-53.

3. Chuang T-Y, Reisner G T. Dermatoepidemiology Part1 Epidemiologic methods. Int J Dermatol 1993; 32: 251-6.

4. An insight into the global burden of skin disease. Loes M Hollestein and Tamar Nijsten Journal of Investigative Dermatology (2014) 134, 1499-1501.

5. Michael randall and Karen E Neil. Diseases management, A guide to clinical pharmacology pg-413.

6. Mehta TK. Pattern of skin diseases in India. Indian J Dermatol Venereol Leprol 1962; 28: 134-9.

7. Gangadharan C, Joseph A, Sarojini PA. Pattern of skin diseases in Kerala. Indian J Dermatol Venereol leprol 1976; 42: 49-5

8. Dayal SG, Gupta GP. A cross section of skin diseases in Bundelkhand region, UP. Indian J Dermatol Venereol Leprol 1977; 43: 258-61.

9. Jaiswal AK, Singh Gurmail. Pattern of skin diseases in Kashmir region of India. Indian J Dermatol Venereol Leprol 1999; 65: 258-60.

10. Nair S Pradeep, Nair TV. Gopala Krishnan. Pattern of dermatological diseases in Trivandrum. Indian J Dermatol Venereol Leprol 1999; 65: 261-3.

11. Kuruvilla M, Sridhar KS, Kumar P, Rao SG. Pattern of skin diseases in Bantwal Taluq, Dakshina Kannada. Indian J Dermatol Venereol Leprol 2000; 66: 247-8.

12. Johanson M-LT. Skin conditions and related need for medical care among persons 1-74 years, United States, 1971-74 Vital and Health Statistics: Series 11, No 212. 1978: 1-72.

13. Horn R. The pattern of skin disease in general practice. Dermatol Pract 1986; Dec: 14-19.

14. Prevalence of skin diseases in dermatology outpatient clinic in turkey. Bilgili et al

15. Furue M, Yamazaki S, Jimbow K, Tsuchida T, Amagai M, Tanaka T, Matsunaga K, Muto M, Morita E, Akiyama M, Soma Y, Terui T, Manabe M. Prevalence of dermatological disorders in Japan: a nationwide, cross-sectional, seasonal, multicenter, hospital-based study. J Dermatol. 2011; 38: 310-320. PMID: 21426384.

16. Mahe A, Cisse IA, Faye O, N'Diaye HT, Niamba P. Skin diseases in Bamako (Mali). Int J Dermatol. 1998; 37: 673-676. PMID: 9762817.

17. Th. Bijayanti devi, G Zamzachin. Pattern of skin diseases in Imphal. Indian J Dermatol 2006: 51(2): 149-50.
AUTHORS:
1. N. L. Sirisha
2. M. Pavan Kumar
3. S. Sowjanya

PARTICULARS OF CONTRIBUTORS:
1. Assistant Professor, Department of DVL, RIMS, Kadapa, Andhra Pradesh.
2. Post Graduate, Department of DVL, RIMS, Kadapa, Andhra Pradesh.

FINANCIAL OR OTHER COMPETING INTERESTS: None

3. Post Graduate, Department of DVL, RIMS, Kadapa, Andhra Pradesh.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:
Dr. M. Pavan Kumar,
Post Graduate,
Department of Dermatology, Venereology, Leprology, RIMS, Kadapa, Andhra Pradesh.
E-mail: pavan.modepalli@gmail.com
Date of Submission: 24/06/2015.
Date of Peer Review: 25/06/2015.
Date of Acceptance: 10/07/2015.
Date of Publishing: 14/07/2015.