



## PSYCHO-CUTANEOUS DISORDERS: A COMPREHENSIVE ANALYSIS IN PSYCHIATRIC AND DERMATOLOGY PATIENTS

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### Abstract

To document the incidence and nature of cutaneous disorders in patients with diagnosed psychiatric condition. To compare it with the control group. To find out if any relationship exists between the two groups. The study included 103 patients diagnosed with psychiatric conditions who also presented with cutaneous diseases, constituting the study group. These patients were categorized according to the ICD-11 classification of psychocutaneous disorders. Additionally, a control group comprising 312 patients seeking care at the dermatology outpatient department due to various skin disorders, with no documented history of psychiatric conditions, was included in the study for comparative analysis. The majority of cases within the study group fell within the age range of the 2nd to the 4th decade. Among the study group patients, 54% exhibited infective dermatoses, while the remaining presented non-infective dermatoses. Notably, a high prevalence of 'dermatophyte' infections was observed among male patients, while 'infestations' were more frequent among female patients in the study group. Within the non-infective dermatoses category, 19% of patients were diagnosed with eczema, and primary psychocutaneous disorders were identified in 7% of the study group. In conclusion, the study group exhibited a significantly higher incidence of infestations, genodermatoses, and dermatophyte infections. Additionally, patients with polysubstance abuse had a heightened occurrence of non-infective dermatoses, notably eczema. The most prevalent psychogenic skin disorder in the study group was 'Trichotillomania,' followed by 'Delusion of parasitosis' and 'Dermatitis Artifact.'

**Keywords-** cutaneous disorders, psychiatric condition, Psycho-Cutaneous Disorders

### Introduction

Skin is the largest organ of human body and psyche is attributed to have the largest function. Both have common embryonic origin from 'Ectoderm' and hence are affected by the same set of hormones and neurotransmitters. Yet the connection between Psyche and skin has unfortunately

been underestimated such that the present knowledge of the relationship between psychiatric conditions and skin conditions is still rudimentary.<sup>1</sup>

The interface between psychiatry and dermatology is very complex and varied. Skin has a special place-particularly in psychiatry since skin as an organ of emotional expression responds to various emotions of anger, fear, shame and frustration.<sup>2</sup> Not only skin provides a cosmetic edge, self-esteem and thereby enhances personality but also plays an important role in socialization which starts perceptual function of skin, lies in the fact that cutaneous perceptions from the environment and self-exploration of the one's body in the 1<sup>st</sup> and 4<sup>th</sup> year of life of the child results and eventually becomes the prominent organizers of body image.<sup>3</sup> Now if the emotional environment is not favourable to the infant/child, it may result into obsessional worries about the skin integrity giving rise to 'Delusion of body image' in later life to affirm his or her very own existence. If the primary caretaker responds empathically and positively, the infant feels valued. In contrast to those who are less favoured, the child feels depressed which results later in life as 'Idiopathic Pruritis, Obsessions and compulsions, Eczema, and psoriasis.'<sup>4</sup>

Thus, complex interplay of dermatologic disturbances can affect the patient, his or her family members and at times the society by large. Now various conditions which occur clinically due to the interaction between the mind and the skin can be appropriately grouped and termed as 'Psychocutaneous disorders.'<sup>5</sup> Psychophysiological disorders, primary psychiatric disorders, and secondary psychiatric illnesses are the three types of psychocutaneous disorders. Skin conditions such as psoriasis and eczema, which are psychophysiological illnesses, are linked to emotional states like stress rather than being directly related to mental health issues.<sup>6</sup> Trichotillomania and the illusion of parasitosis are examples of primary psychiatric diseases, which are mental illnesses that cause self-induced cutaneous symptoms. Disfiguring skin conditions and other conditions are linked to secondary psychological problems.<sup>7</sup>

## **Aim and Objectives**

### ***Aim***

To study the cutaneous disorders in primary psychiatric conditions.

### ***Objectives:***

1. To document the incidence and nature of cutaneous disorders in patients with diagnosed psychiatric condition.
2. To compare it with the 'control group'
3. To find out if any relationship exists between the two groups.

### **Material and methods:**

The study is an observational, case control, hospital based study. The present study was undertaken at tertiary care teaching hospital in Western India during a period of 18 months. Sample size of 200 was undertaken for case study and 300 of control was taken.

### ***Inclusion criteria***

1. Both male and female patients from age 15 to 60 years were included.
2. Patients with diagnosed psychiatric illnesses having cutaneous lesions were included.

### ***Exclusion criteria***

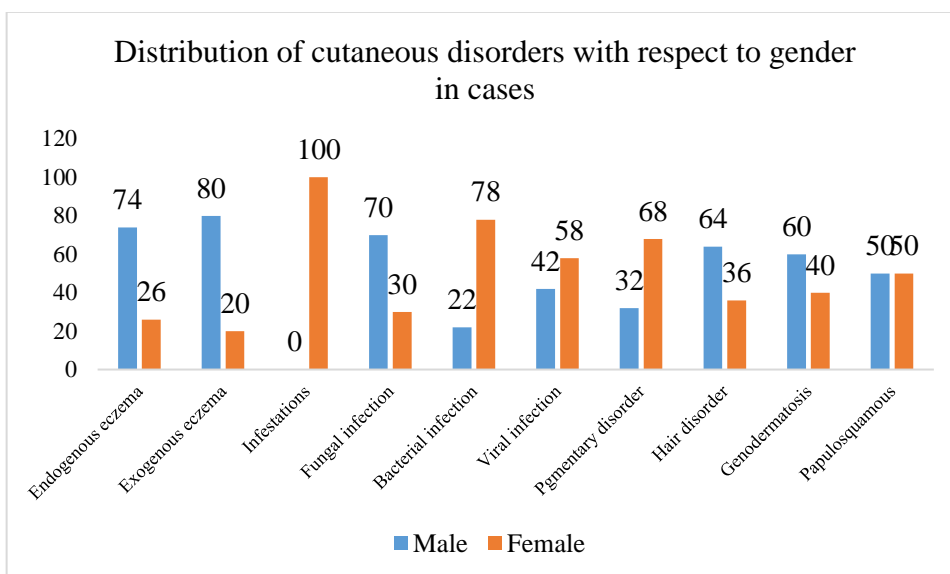
1. Patients below fifteen years of age and above sixty were excluded.

### ***Collection of Data***

1. Detailed history taking
2. Detailed clinical examination will be done and recorded. Examination will include General examination, Systemic examination, Dermatological examination.

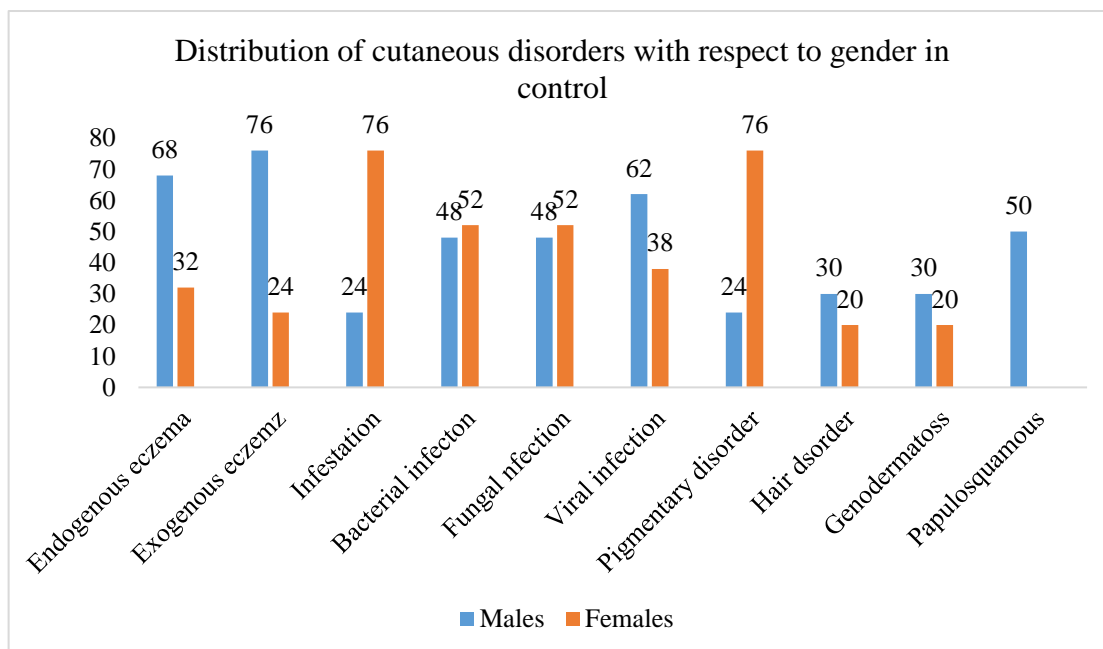
**Results**

Graph 1 depicts gender wise distribution of patients in case group. Out of the total 209 patients in case group, 109 are males and remaining 100 are females. Males accounted for 52.16% of the case population and females accounted for 47.84%.



**Graph 1:** Distribution of cutaneous disorders with respect to gender in cases

Graph 2 depicts the gender wise distribution of patients in control group. Out of total 312 patients in control group, 134 are males and remaining 178 are females. Males accounted for 42.95% of the control population and females accounted for 57.05%.



**Graph 2:** Distribution of cutaneous disorders with respect to gender in control

Table 1 depicts the distribution of primary psychiatric disorder in the case group. Out of the total 209 patients, 95 were male and 114 were female. Males constituted 45.45% of the study group and females accounted for 54.55%. The most common primary psychiatric conditions are schizophrenia -46.88%. Males accounted for 29% and females 71% from the schizophrenia group. Mood disorders constituted about 21.05% of all primary psychiatric conditions of which males accounted 45.45% and females 54.55%. The third most common primary psychiatric condition found in this study was

alcohol dependence syndrome-18.66% in which the males constituted maximum of 76.92% and females nearly to 23.08%. The next common condition included polysubstance abuse -9.09%. Males were 58% and females equally to 42%. This were followed by psychosis and depression, 2.40% and 1.92% respectively. Our study has shown a high incidence of schizophrenia (46.88%) and mood disorders (21.05%) followed by alcohol dependence syndrome (18.66%) and polysubstance abuse (9.09%).

**Table 1:** Distribution of primary psychiatric disorder

Psychiatric Disorders	Distribution of primary psychiatric disorder				Total	
	Male		Female		NO	%
	NO	%	NO	%		
<b>SCHIZOPHRENIA</b>	28	29%	70	71%	98	46.88%
<b>MOOD DISORDER</b>	20	45.45%	24	54.55%	44	21.05%
<b>ALCOHOL DEPENDANCE SYNDROME</b>	30	76.92%	9	23.08%	39	18.66%
<b>POLYSUBSTANCE ABUSE</b>	11	58%	8	42%	19	9.09%
<b>PSYCHOSIS</b>	4	80%	1	20%	5	2.40%
<b>DEPRESSION</b>	2	50%	2	50%	4	1.92%

Table 2 depicts the distribution of cutaneous disorders in case and control group. Of the study group, 58% patients had infective dermatoses while non infective dermatoses were seen in 42% of patients. Among infective dermatoses, higher incidences of fungal infections (28%) like dermatophytosis and pityriasis versicolor was noted, out of which 71.43% were males and 28.57% were females from the study group. A female preponderance of pityriasis versicolor and parasitic infestations was noted. Overall, parasitic infestations were seen in 9% of the study group patients. Of these, pediculosis capitis n 6%, scabies was present in 2%, pediculosis corporis in 0.33% of the patients. Bacterial infections accounted for total 20% of the study cases. Of these 75% occurred in females and remaining 25% were seen in males. Acne excoriates and secondary pyodermas were the notable conditions seen more in female study cases.

**Table 2:** Distribution of cutaneous disorders in case and control group

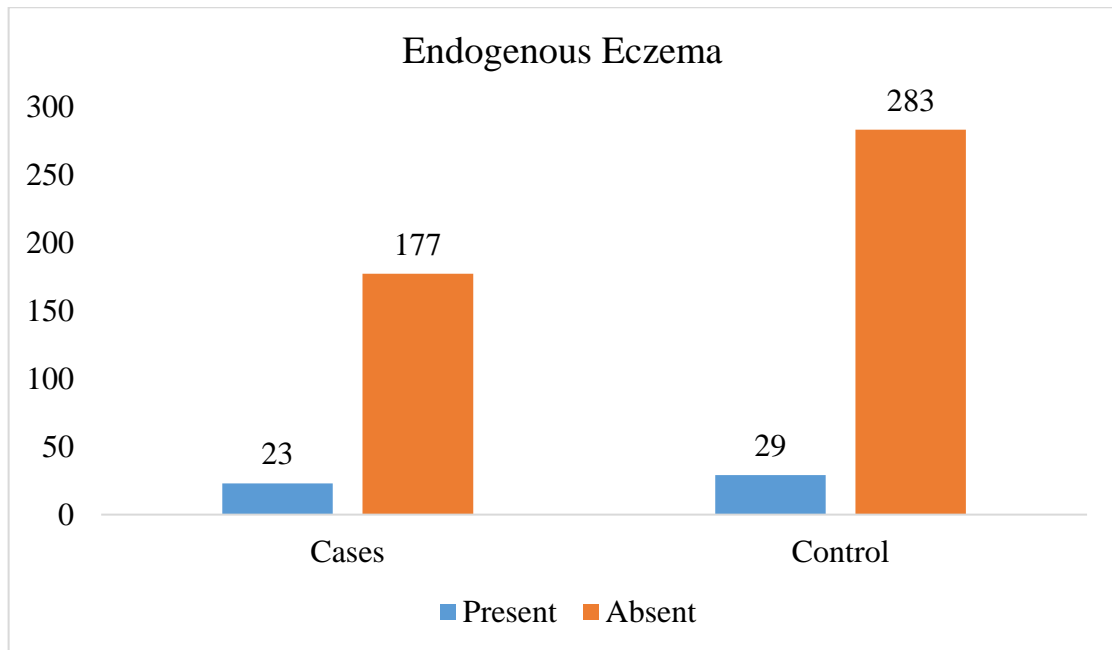
	Distribution of cutaneous disorders in case and control group												p-value
	Case						Control						
	M	%	F	%	T	%	M	%	F	%	T	%	
<b>Endogenous Eczema</b>	17	73.91	6	26.09	23	11.51	20	68.96	9	31.04	29	9.29	0.42
<b>Exogenous Eczema</b>	20	80	5	20	25	12.5	25	75.75	8	24.25	33	10.57	0.503
<b>Infestation</b>	0	0	18	100	18	9	2	25	6	75	8	8	3.56
<b>Fungal infection</b>	40	71.42	16	28.58	56	28	22	47.82	24	52.18	46	14.74	<0.001
<b>Bacterial infection</b>	10	25	30	75	40	20	28	47.45	31	52.55	59	18.91	0.0761
<b>Viral infection</b>	3	42.85	4	57.15	7	3.5	10	62.5	6	37.5	16	5.12	0.386
<b>Pigmentary disorder</b>	6	31.57	13	68.43	19	9.5	5	25	15	75	20	6.41	0.198
<b>Hair disorder</b>	8	66.66	4	33.34	12	6	6	30	14	70	20	6.41	0.852
<b>Genodermatosis</b>	3	60	2	40	5	2.5	1	50	1	50	2	0.64	0.077
<b>Papulosquamous</b>	2	50	2	50	4	2	15	71.42	6	28.58	21	6.73	0.015
<b>Miscellaneous</b>	0	0	0	0	0	0	20	34.48	3	65.52	58	18.5	

Table 3 depicts distribution of psychogenic skin disorders in the case group. Psychogenic skin disorders were seen in 11 patents, of which 4 were males and 7 were females.

**Table 3:** Distribution of psychogenic skin disorders in cases

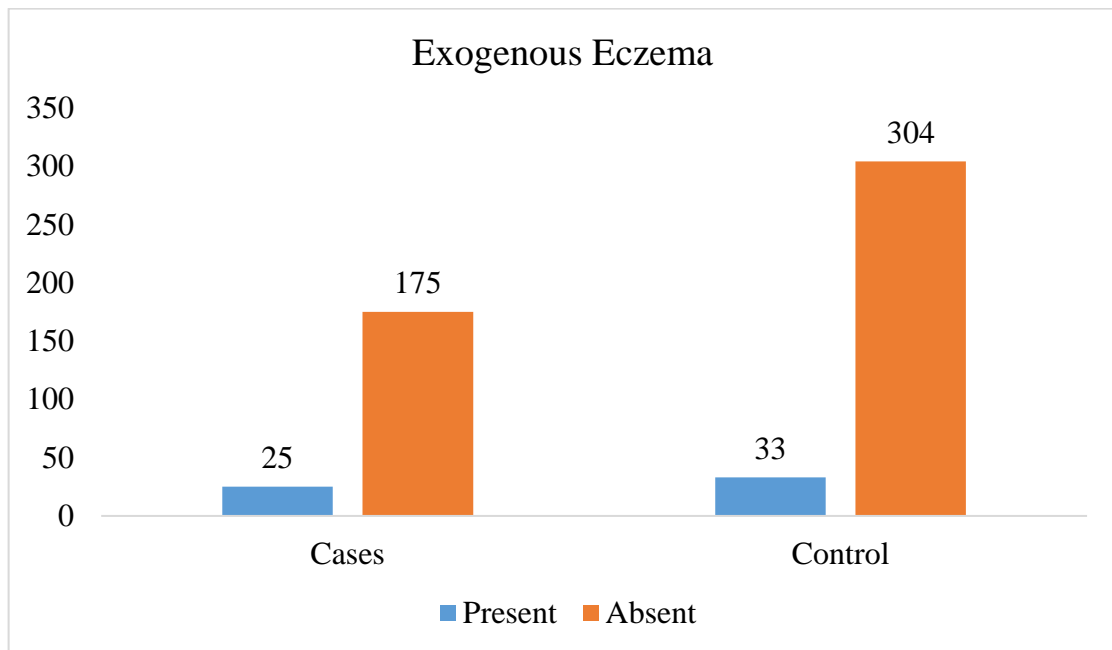
Psychogenic skin disorder	Psychogenic skin disorders in cases				Total	%
	male	%	female	%		
<b>Trichotillomania</b>	0	0%	5	100%	5	45.45%
<b>Delusion of Parasitosis</b>	3	80%	1	20%	4	36.36%
<b>Dermatitis Artefacta</b>	1	50%	1	59%	2	18.18%
<b>Total</b>	4		7		11	

Graph 3 depicts the comparison of the group of endogenous eczema present in the population of case and control groups. 11.51% was present in case group as against 9.29% in the control group.



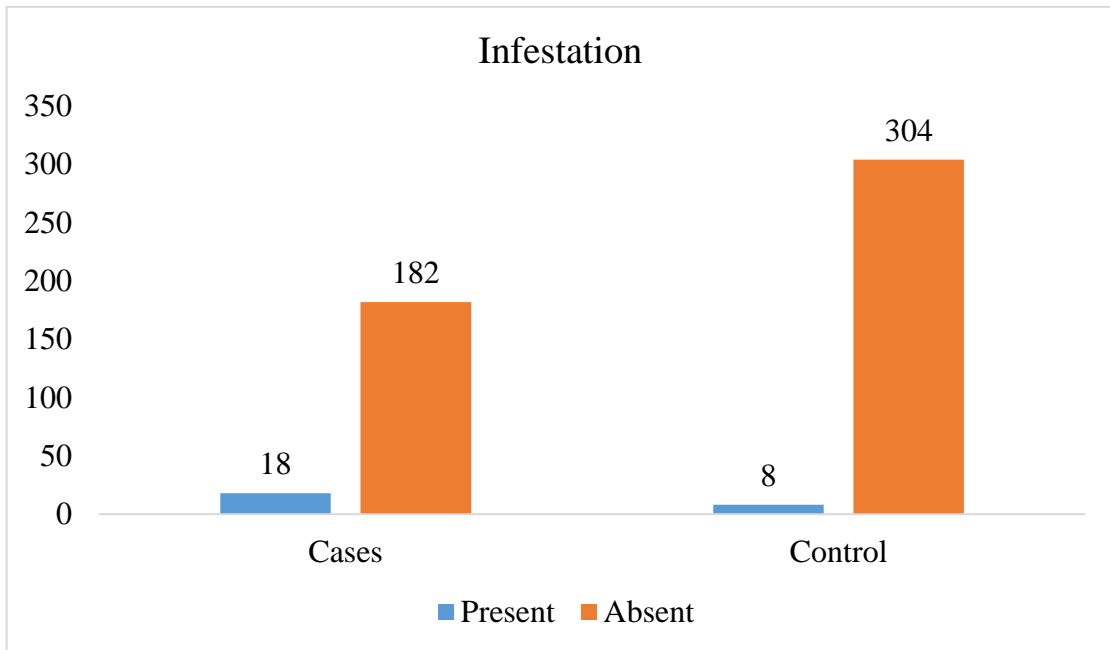
**Graph 3:** Depicts the comparison of the group of endogenous eczema

Graph 4 depicts the comparison of the group of exogenous eczema present in the population of case and control groups. 12.5% was present in case group and 10.57% was present in control group.



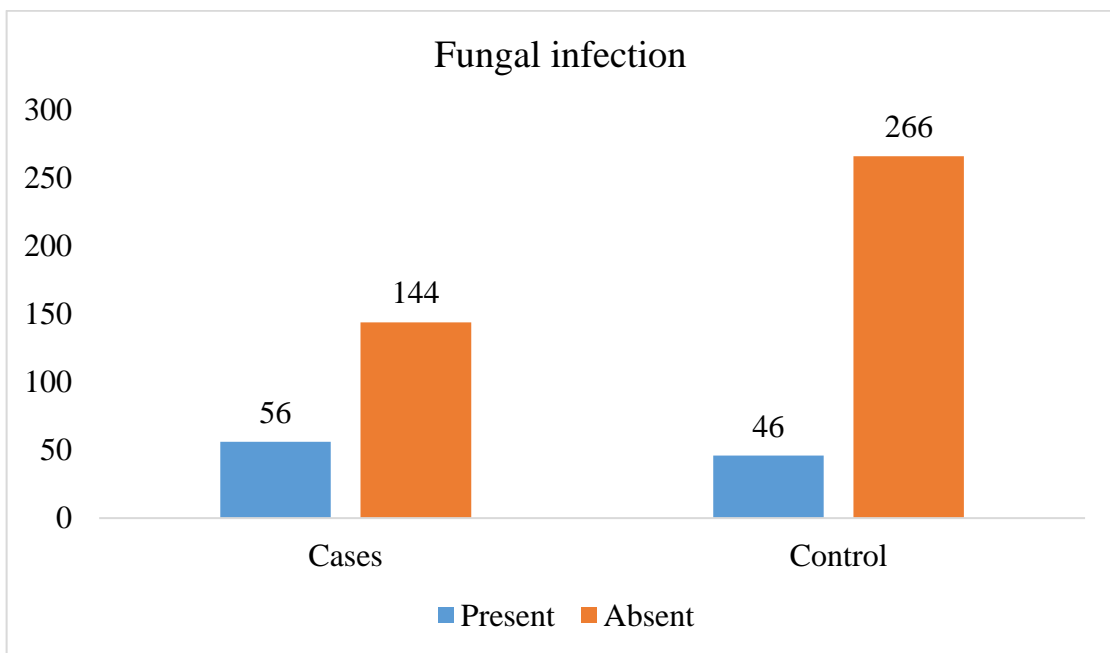
**Graph 4:** Exogenous Eczema

Graph 5 depicts the comparison of parasitic infestations present in the population of case and control groups. 9% was present in case group as against 3.56% in the control group. The total number of patients presenting with parasitic infestation in case group constituted. In control group, the total number of patients having parasitic infestation was 8.



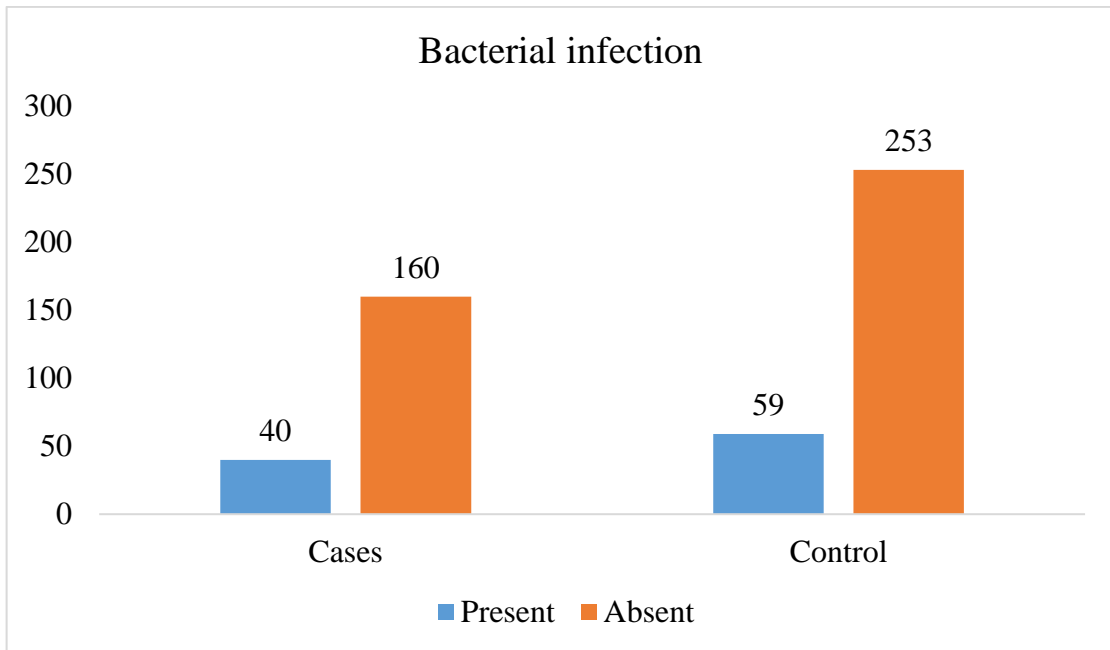
**Graph 5:** Comparison of parasitic infestations

Graph 6 depicts the comparison of fungal infections present in the population of case and control groups. 28% was present in case group as against 14.74% in the control group. The total number of patients presenting with fungal infections in case group constituted 56. In control group, the total number of patients having fungal infection was 46.



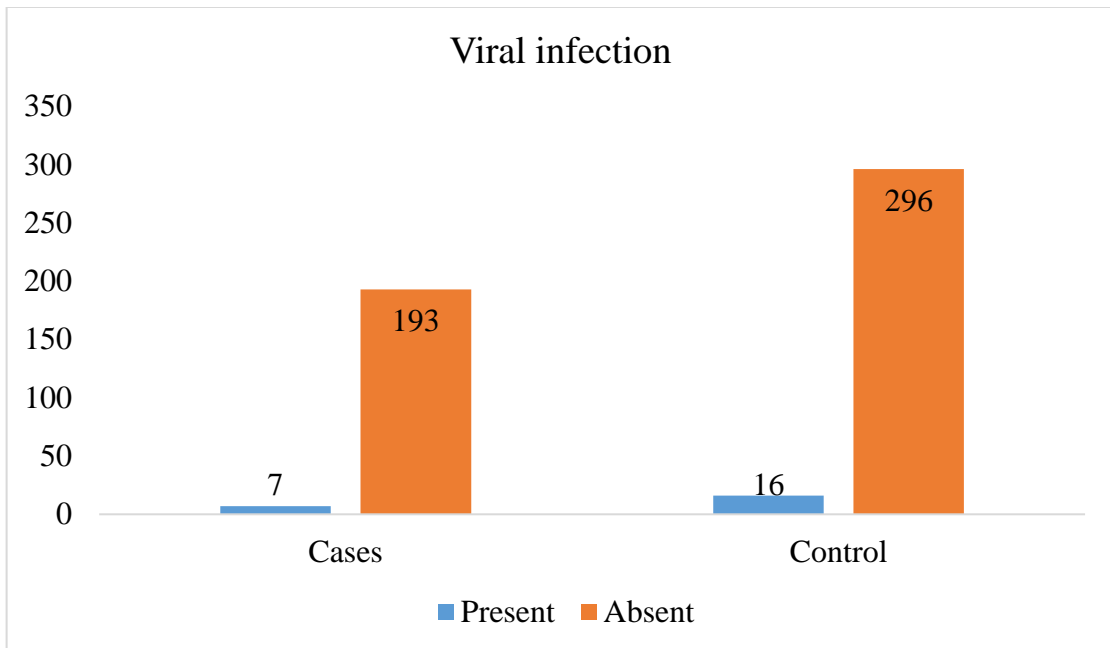
**Graph 6:** Comparison of Fungal Infection

Graph 7 show that the high incidence of bacterial infections like secondary pyodermas and acne vulgaris (20%).



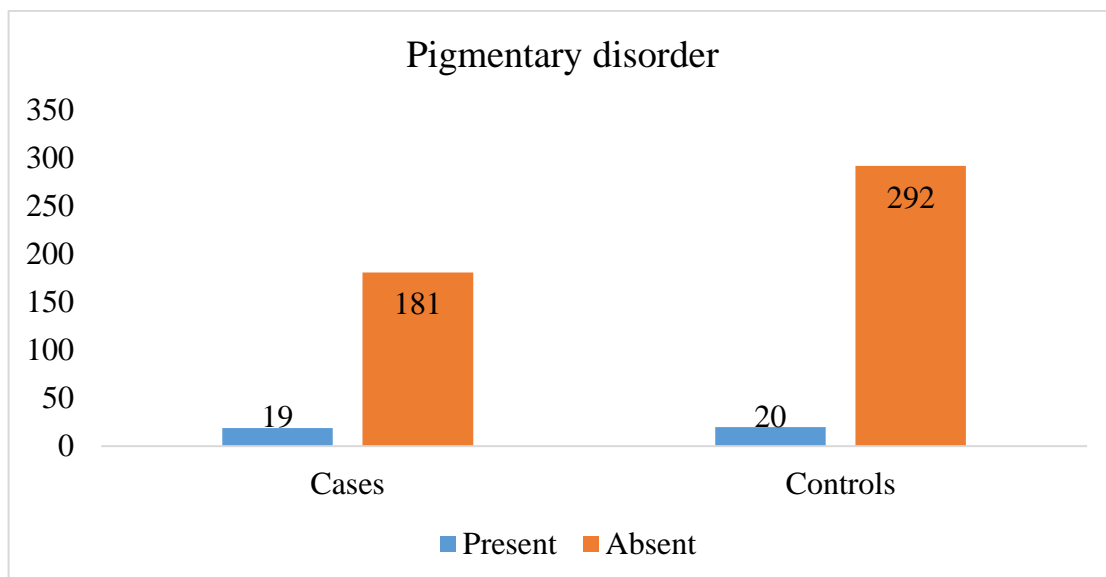
**Graph 7:** Comparison of Bacterial infection

Graph 8 depicts the comparison of viral infections present in the population of case and control groups. 3.5% of patients were present on case group and 5.33% of patients were present on control group.



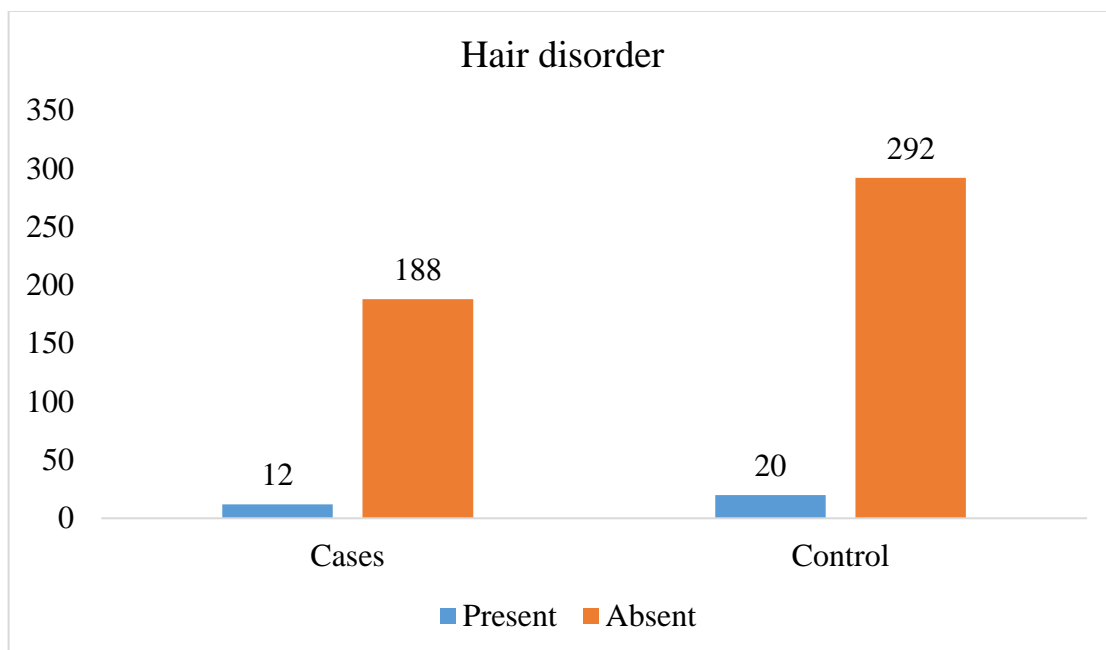
**Graph 8:** Comparison of Viral infection

Graph 9 depicts the comparison of pigmentary disorders present in the population of case and control groups. 9.5% of patients were present in case group and 6.41 % of patients were present on control group.



**Graph 9:** Comparison of pregnancy disorder

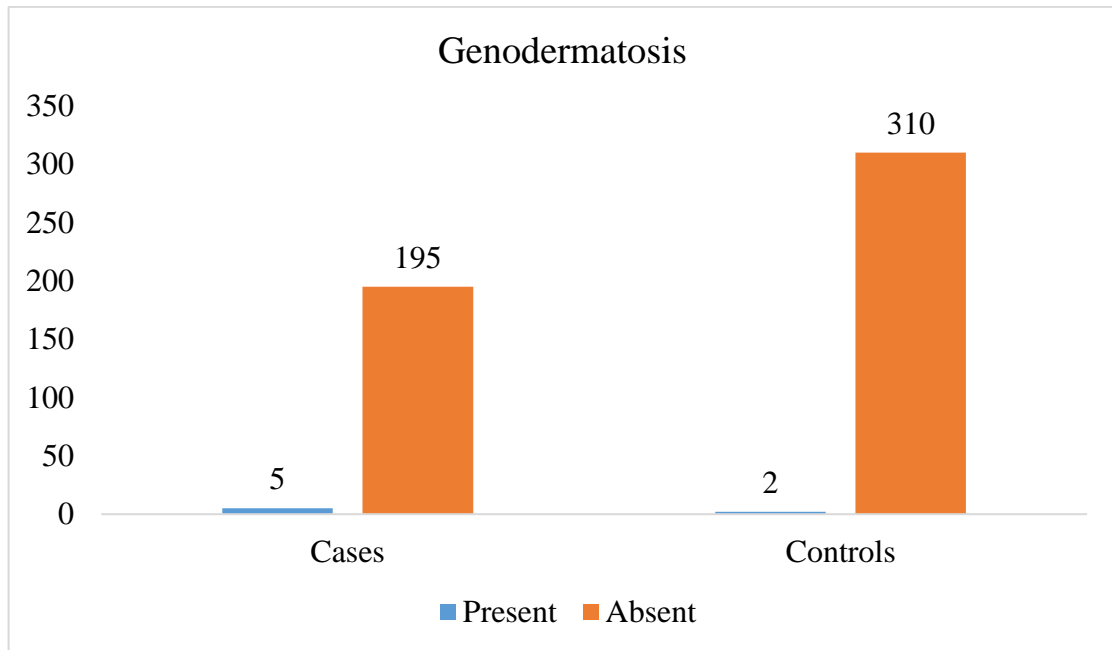
Graph 10 depicts the comparison of hair disorders present in the population of case and control groups. 6% of patients was present in case group and 6.41% of patients were present in control group.



**Graph 10:** Comparison of hair disorder

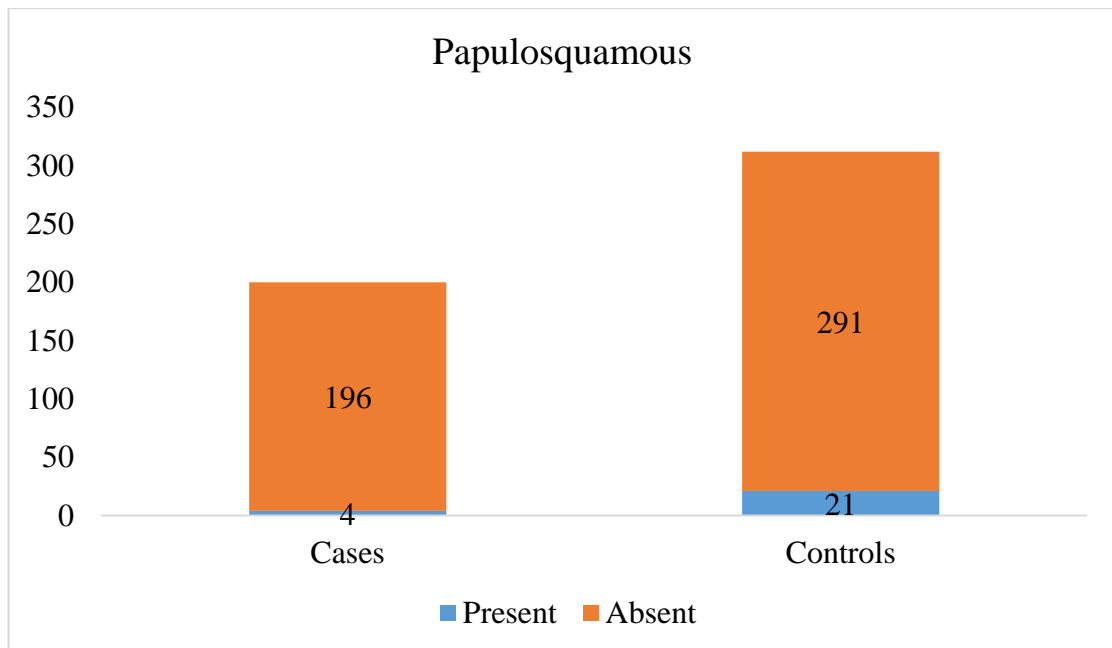
Graph 11 depicts the comparison of genodermatotic present in the population of case and control groups. 2.5% was present in case group as against 0.64% in the control group.





**Graph 11:** comparison of genodermatotic

Graph 12 depicts the comparison of papulosquamous disorder present in the population of case and control groups. 2% was present in case group as against 6.73% in the control group.



**Graph 12:** comparison of papulosquamous

**Discussions**

Five hundred and twenty-one patients (Case group- Two hundred and nine patients and control group- Three hundred and twelve patients) were studied within a period of 18 months. Our study has shown a high incidence of schizophrenia (46.88%) and mood disorders (21.05%) followed by alcohol dependence syndrome (18.66%) and polysubstance abuse (9.09%) as against the findings of **Kuruvila M et al**, where Manic depressive psychosis (53.33%) was foremost followed by Depression (36.33%) and Schizophrenia (8.33%).<sup>8</sup> In a study by **George et al**, For the study, 210 patients with skin diseases and mental disorders were enrolled. There were 314 cutaneous symptoms in all that were noted. The male to female ratio among the patients assessed was 0.72:1, with 88 patients (41.9%) being male and the remaining 122 patients (58.1%) being female.<sup>9</sup>

Our study has shown increased incidence of trichotillomania (45.45%) as compared to studies of **Kuruvila et al** (14.29%) moderately similar incidence of delusion of parasitosis (36.36%) and equal incidence of dermatitis artefact (18.18%).<sup>8</sup> In a study by **George et al** 75.2% of patients had an insight regarding the skin illness, while 51.4% of patients had an insight regarding the psychiatric disorder.<sup>9</sup> In a study by **Moftah et al** There were found to be a substantially higher percentage of primary psychiatric patients (143 patients, or 71.5%) with skin problems than there were non-psychiatric control patients (44 patients, or 22%), with skin disorders ( $P < 0.001$ ).<sup>10</sup> In a study by **George et al** exogenous eczema present in the population of 24.8%.<sup>9</sup> In a study by **Moftah et al** comparison of group of eczema present in the population of patients with primary psychiatric disorders (5.7%) and subjects free from psychiatric disorders groups (4.5%).<sup>10</sup>

In our study, the total number of patients presenting with fungal infections in case group constituted 56. In the study of **Kuruvila et al**, 23.5% of fungal infections (mainly dermatophytosis and pityriasis versicolor) was present in the case group.<sup>8</sup> This shows our percentage of 28% in almost like the findings in study of **Kuruvila M et al** having 23.5% of fungal infections.<sup>11</sup> Our study has shown an increased incidence of fungal infections like dermatophytosis and pityriasis versicolor (28%).<sup>8</sup> In a study by **Moftah et al** There were 96 psychiatric patients (48% of all psychiatric patients and 66.9% of psychiatric patients with skin diseases) who had infectious skin diseases.<sup>10</sup>

### Conclusion

This study found that schizophrenia and mood disorders were the most common psychiatric conditions linked to dermatological issues. Psychogenic skin disorders like trichotillomania and delusion of parasitosis were also observed. Additionally, fungal infections, especially dermatophytosis and pityriasis versicolor, were more common among those with psychiatric conditions. This highlights the intricate connection between psychiatric and dermatological health, underscoring the need for more research and awareness in this field.

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**Conflict of interest-** None

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### References

1. Poot F, Sampogna F, Onnis L. Basic knowledge in psychodermatology. *J Eur Acad Dermatol Venereol JEADV*. 2007;21(2):227-234. doi:10.1111/j.1468-3083.2006.01910.x
2. Basavaraj KH, Navya MA, Rashmi R. Relevance of psychiatry in dermatology: Present concepts. *Indian J Psychiatry*. 2010;52(3):270-275. doi:10.4103/0019-5545.70992
3. Jhangiani DR, Tarry DH. 3.3 The Social Self: The Role of the Social Situation. Published online January 26, 2022. Accessed September 25, 2023. <https://opentextbc.ca/socialpsychology/chapter/the-social-self-the-role-of-the-social-situation/>
4. Gunduz S, Usak E, Ozen S, Gorpelioglu C. Obsessive Compulsive Symptoms and Quality of Life in mothers of Children With Atopic Dermatitis. *Actas Dermosifiliogr*. 2017;108(5):432-437. doi:10.1016/j.ad.2017.01.004
5. Jafferany M. Psychodermatology: A Guide to Understanding Common Psychocutaneous Disorders. *Prim Care Companion J Clin Psychiatry*. 2007;9(3):203-213.
6. Koo J, Lebwohl A. Psycho dermatology: the mind and skin connection. *Am Fam Physician*. 2001;64(11):1873-1878.

7. Rahman SM, Abduekmula A, Jafferany M. Psychopathological symptoms in dermatology: A basic approach toward psychocutaneous disorders. *Int J Dermatol*. 2023;62(3):346-356. doi:10.1111/ijd.16344
8. Kuruvila M, Gahalaut P, Zacharia A. A study of skin disorders in patients with primary psychiatric conditions. *Indian J Dermatol Venereol Leprol*. 2004;70:292.
9. George A, Girisha BS, Rao S. A perspective study of cutaneous manifestations in primary psychiatric disorders in a tertiary care hospital. *Indian J Psychiatry*. 2018;60(2):213-216. doi:10.4103/psychiatry.IndianJPsychiatry\_156\_18
10. Moftah NH, Kamel AM, Attia HM, El-Baz MZ, Abd El-Moty HM. Skin diseases in patients with primary psychiatric conditions: A hospital based study. *J Epidemiol Glob Health*. 2013; 3(3):131-138. doi:10.1016/j.jegh.2013.03.005
11. Khalid N, Rogers T, Torguson R, Zhang C, Shea C, Shlofmitz E, Chen Y, Musallam A, Wermers JP, Case B, Hashim H. Feasibility and safety of high-risk percutaneous coronary intervention without mechanical circulatory support. *Circ Cardiovasc Interv*. 2021;14(9): e011275. doi:10.1161/CIRCINTERVENTIONS.121.011275