Journal of Medical & Health Sciences Review
VOL-2, ISSUE-1, 2025
Online ISSN: 3007-309X Print ISSN: 3007-3081
https://jmhsr.com/index.php/jmhsr

PREVALENCE OF PHOTODERMATOSES IN DISTRICT BUNER, PAKISTAN

NASEER AHMAD[1*], SUHAIL AHMAD[2], KASHIF AHMAD[3]

[1]Department of Zoology University of Buner Khyber Pakhtunkhwa, Pakistan

Email: naseerahmaduob7@gmail.com

[2]Department of Zoology University of Buner Khyber Pakhtunkhwa, Pakistan

Email: Suhailaman456@gmail.com

[3]Department of Zoology University of Buner Khyber Pakhtunkhwa, Pakistan

Email: kashifahmad9217544@yahoo.com

***Corresponding Author: NASEER AHMAD,** Department of Zoology University of Buner Khyber Pakhtunkhwa, Pakistan. Email: naseerahmaduob7@gmail.com

Abstract

The present research was conducted during August 2021 to August 2022. About four hundred patients of Photodermatoses were investigated. In which five different types of Photodermatoses were reported from the population of district Buner. The prevalence of Photodermatoses types are Idopathic Photodermatoses 301 (Polymorphic light eruption 212, Chronic Actinic prurig 35, Solar uriticaria 25, Phototoxic and photoallergic reactions 53, Phorphyrias 16, Photoexacerbated dermatoses 10 and Genodermatoses 20. During the present survey, we reported a total of five types of Photodermatoses in which the prevalence ratio of Idiopathic Photodermatoses in male is 57.25% and female is 18% higher in male than female, Phototoxic and photoallergic reactions is high in male 8.75% and in female which is lower 4.5%, Phorophyrias is 2.7% in male and in female is 1.25%, Photoexacerbated dermatoses is 1.25% high in male and lower in female 0.75%, Genodermatoses is also high in male 3.5% and lower in female 1.5%. Based on all the facts it can be concluded that due to the presence of variety of Photodermatoses disorders that affect different parts of the skin and are known to alter the quality of life of the individual through the prolonged period of morbidity, including the economic, social, political and educational aspects.


Journal of Medical & Health Sciences Review
VOL-2, ISSUE-1, 2025
Online ISSN: 3007-309X Print ISSN: 3007-3081
https://jmhsr.com/index.php/jmhsr


KEYWORDS: Epidemiology, Gender Differences, Skin Disorders, Morbidity, Quality of Life, Socioeconomic Impact

INTRODUCTION

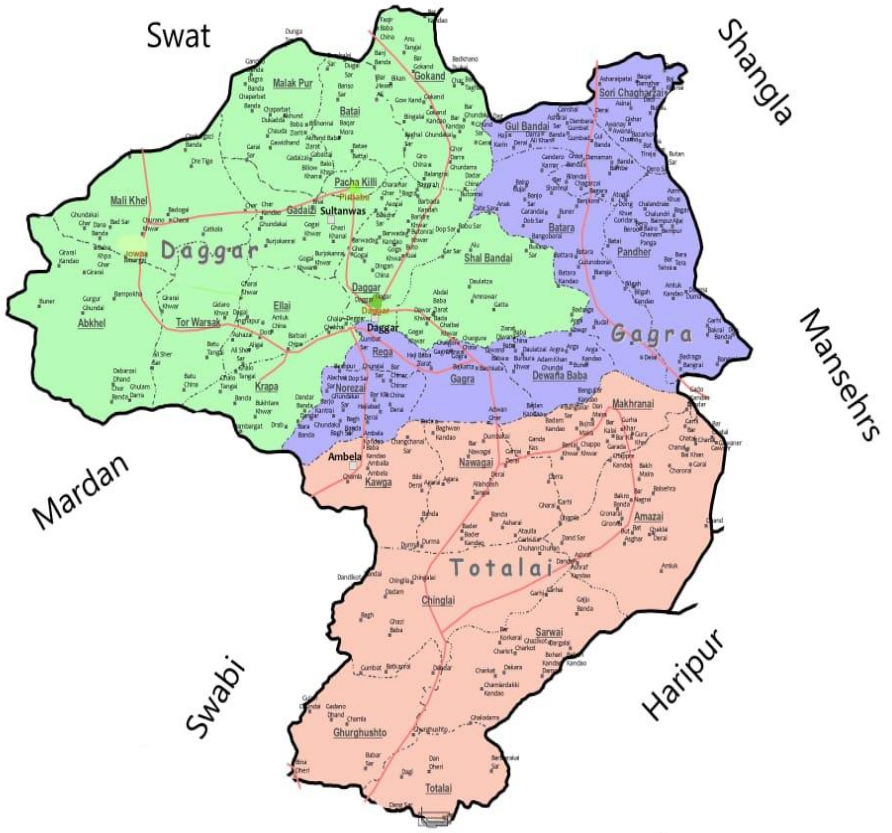
Photodermatoses are a group of skin disorders induced by ultraviolet radiation (UVR) and, in some cases, visible light. To establish a diagnosis it is important to carefully take a history, physical examination and perform phototesting as well as other testing when appropriate patch and photopatch tests, antinuclear antibodies, porphyrin profile. This article focuses on the photodermatoses that affect the elderly, which with the ageing of population, particularly in the industrialized societies, are becoming an increasingly important group for the healthcare systems. The most common photodermatoses with onset in the elderly are chronic actinic dermatitis and drug induced (Trakatelli *et al*., 2009). Photodermatoses are caused by an abnormal reaction to sunlight, usually to its ultraviolet component. The word Photodermatoses composed of two word; photo mean light and dermatomes mean any skin defect or lesion on the skin (Lehmann *et al.,* 2011). Only a limited portion of the solar spectrum reaches the Earth's surface, and this includes 2% of ultraviolet radiation (UVR), 32% of visible light, and 66% of infrared light. UVR is divided into ultraviolet B (UVB; 290–320 nm, the sunburn spectrum) and ultraviolet A (UVA; 320–400 nm). UVA is further subdivided into UVA-1 (340–400 nm) and UVA-2 (320–340 nm). UVB, and to a lesser extent UVA-2, is mainly responsible for erythema, whereas UVA is predominantly responsible for tanning, photoaging, and drug-induced photosensitivity (Choi *et al.,* 2014). Interactions with ultraviolet radiation (UVR) and chromospheres in the skin happen on a daily basis. Photodermatoses, which are abnormal responses to UV exposure, can be classified into subgroups based on pathogenesis. These are pathogenesis, photobiologic evaluation, prognosis and therapies of the most common photodermatose (Santoro *et al*., 2011).

3. MATERIALS AND METHODS

Study area

Buner is a district of Malakand division Khyber Pukhtunkhwa, Pakistan. It consists of Tehsil Daggar, Gagra, Khudukhail, Chagharzi, Mandanr and Gadeze. The Daggar is the head quarter of the district. Buner lies between 34-09 and 34-43◦ N latitude and 72-10 and 72-47◦ E longitude. It is bounded on the north by Swat District, on the west by Malakand agency, on the south by Mardan District, and on the east by river Indus and Hazara division. Elevation varies from 1200 ft. in Totalai in the south to 9,550 ft. of Dosara peak (Saeed *et al*., 2013).

Figure 1: map of study area (Saeed *et al*., 2014)



Study design

This study was planned to show the Prevalence of Phtodermatoses diseases among the people of district Buner. We consulted with our professor and made the decision. Then we were visited to the District head quarter (DHQ) Hospital Buner, for the collection of data.

Approval

On the first day of visit we discuss our aim and objective with all doctors of District head quarter (DHQ) Hospital Buner, and they were give us approval for data collection.

Data collection

We have collected the medical records of all patients attending the District head quarter (DHQ) Hospital Buner, were reviewed from 1 March 2022 to 1 august 2022. In the morning from 8 a.m. to 1 p.m. new cases and follow-up patients were seen in the hospital. The people are coming to this hospital for checkup from the six tehsil of district Buner having photodermatoses problems.

Data obtained from their medical records included age, gender, and race. Patients with photodermatoses diseases were examined. Five major groups along with their sub types of photodermatoses were seen. The percentage of prevalence of the photodermatoses diseases was calculated based on the total number of patients examined.

Study population

We were investigated about 400 individual as sample of the study by using purposive sampling. Purposive sampling is a non-random sampling technique. The purposive sampling can use on survey based research. In this types of sampling, sample know about the purpose of study and provide information.

Data collection instrument

We used copy or register for collecting of data from the District head quarter (DHQ) Hospital Buner staff, By putting the data from the register (OPD) of hospital.

Statistical data analysis

Graphical representation and various charts like column, pie, line, and table were applied to the collected data by using Microsoft Excel 2010 software.

RESULTS

The present research was conducted during August 2021 to Agust 2022. A total of four hundred (400) patients of Photodermatoses were investigated in which a total of five (5) major different types were reported from the population of district Buner. The reported prevalence Photodermatoses types are, Idiopathic Photodermatoses 301 (Polymorphic light eruption 212, Chronic Actinic dermatitis 35 and Solar uriticaria 25) Phototoxic and photoallergic reactions (53), Phorphyrias (16), Photoexacerbated dermatoses (10) and Genodermatoses (20).

Table 1: Total Number of Study Population = 400 collect from the medical record (OPD of DHQ Daggar Buner)

S. No	Disease type	Male No	Male %	Female No	Female %	Total	Total %
1	Idiopathic Photodermatoses	212	57.25	89	10.25	301	75.2%
2	Phototoxic & Photo allergic reaction	35	8.7%	18	4.5%	53	13.25%
3	Porphyrias	11	2.5%	5	1.2%	16	4%
4	Photoexacerbated Dermatoses	7	1.7%	3	0.7%	10	2.5%
5	Genodermatoses	14	3.5%	6	1.5%	20	5%

Age range

In this survey /study the range of both male and female was from 7 day to 100years old. A total of four hundred(400) patient medical records were study individually. The prevalence ratio was high in yong than older and children, because they are expose more to sunlight as compared to older and children.

Total number of participants = 400

From 7 day to 20 year = 102 (25.5%)

From 20 year to 40 year = 199 (49.75%)

From 40 tear to 100 year = 99 (24.75%)

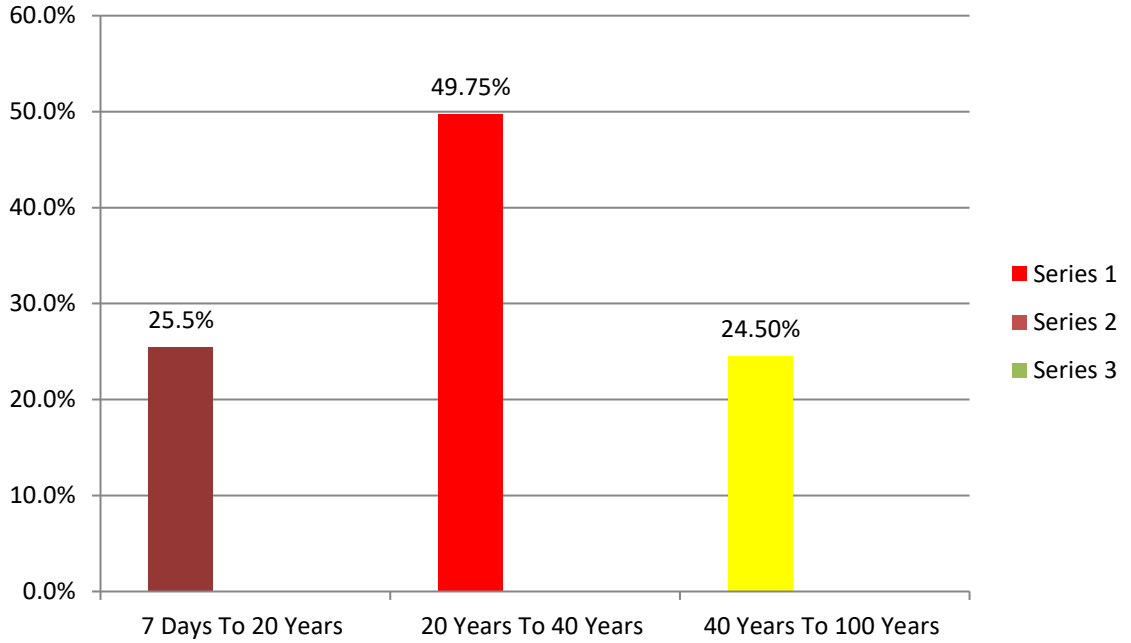


Figure 1: Age Distribution among sample participants

Gender

In this survey include number of samples were 400, among them (77%) participant are male and (23%) are female. The male have high prevalence ratio then female because male are more expose to sunlight.

Total number of participant = 400

Male= 279 (69.75%)

Female= 121 (30.25%)

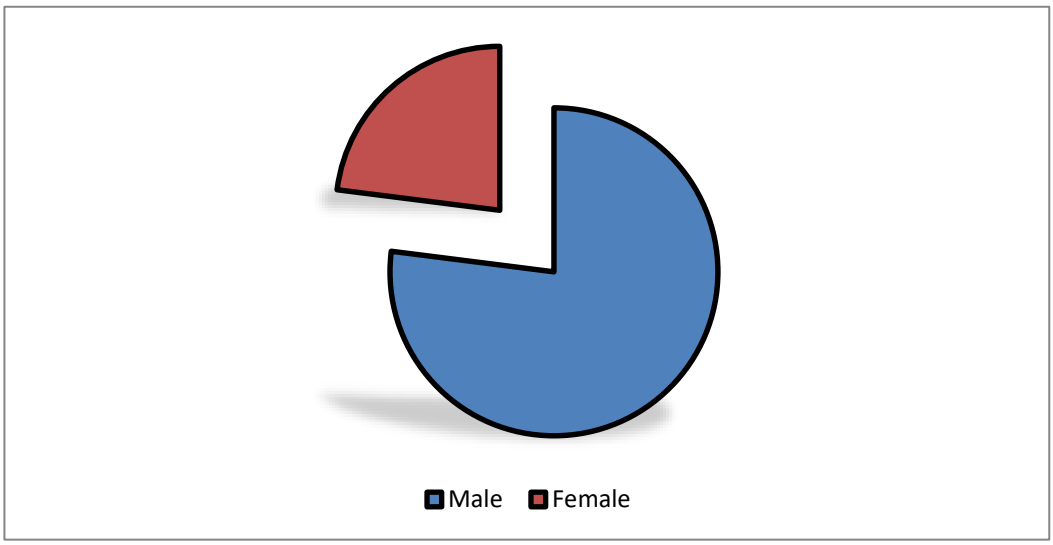


Figure 2: Male & Female % Prevalence of Photodermatoses

Different types of Photodermatoses found in district Buner

During the present survey we were reported a total of five types of Photodermatoses in which the prevalence ratio of Idiopathic Photodermatoses in male is (57.25%), and female is (18%), higher in male than female sub-types polymorphic light eruption in male (171,42%) and female (10.25%), chronic actinic dermatitis in male (25,6.25%) and female (10,2.5%) and solar uriticaria in male(15,3.7%) and female (10,2.5%), Phototoxic and photoallergic reactions is high in male (8.75%) and in female which is lower (4.5%), Phorophyrias is (2.7%) and in female is (1.25%), Photoexacerbated dermatoses is (1.25%) high in male and lower in female (0.75%), Genodermatoses is also high in male (3.5%) and lower in female (1.5%).statistically in the following table show the description about (gender and perentage etc.), of each diseases individually.

Table 2: Total Number of Study Population = 400 collect from the medical record (OPD of DHQ Daggar Buner)

S. No	Disease type	Male No	Male %	Female No	Female %	Total	Total %
1.	Idiopathic Photodermatoses	212	57.25	89	10.25	301	75.2%
2.	Phototoxic & Photo allergic reaction	35	8.7%	18	4.5%	53	13.25%
3.	Porphyrias	11	2.5%	5	1.2%	16	4%
4.	Photoexacerbated Dermatoses	7	1.7%	3	0.7%	10	2.5%
5.	Genodermatoses	14	3.5%	6	1.5%	20	5%

Different types of Photodermatoses

Idiopathic Photodermatoses

This types is most common among the people.

Symptoms

The upper chest, upper arms, backs of the hands, thighs, and the sides of the face are the primary localizations

✓with reddening, edema

✓vesicles or blisters

✓and subsequently often severe pigmentation

✓Itching

Figure 3: Idiopathic Photodermatoses

Phototoxic and photoallergic reactions

Occure in sun exposed area, face,neck etc.

Symptoms

✓redness

✓lesions on the skin

✓Edema

✓Vesicles or blister

✓Itching of sun exposed area

Figure 4**:** Phototoxic and photoallergic reaction

Phorphyrias

Result from a buildup of natural chemicals that produce porphyrin in your body.

Symptoms

✓Red or brown urine

✓Urination problems

✓Nausea and vomiting

✓Swelling of skin

✓Itching

Figure 5**:** Phorphyrias

Photoexacerbated dermatoses

A group of cutaneous disorders characterized by an abnormal reaction to light exposure.

Symptoms

✓Fever

✓Sweat

✓Itching

✓Blister

✓Lesions

Figure7: Photoexacerbated dermatoses

Genodermatosis

is a hereditary skin disease with three inherited modes including single gene inheritance, multiple gene inheritance and chromosome inheritance.

Symptoms

✓Edema

✓Swelling

✓Redness

✓Itching or burning

✓Blister or visical

✓Fever

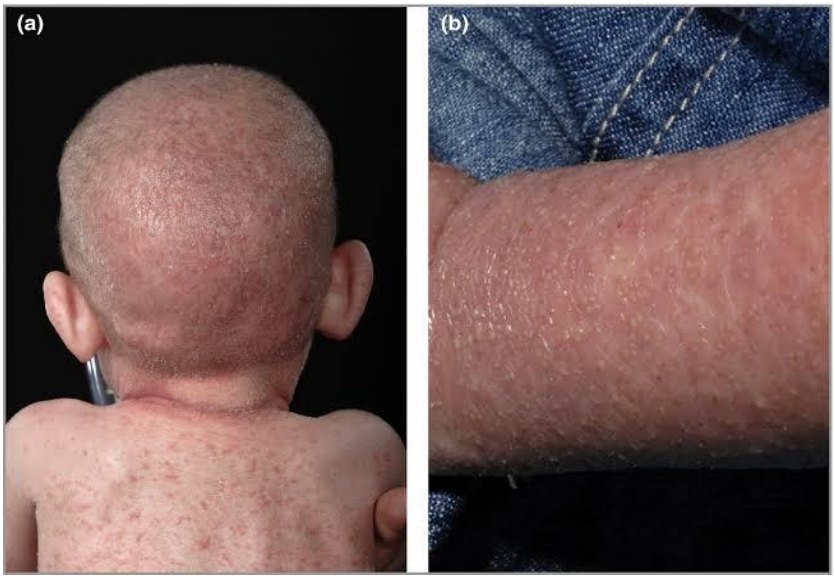


Figure8: Genodermatosis

DISCUSSION

The study was conducted over the (400) patients of DHQ Hospital Daggar, Buner. As well as we reported under this study five (5) different types of Photodermatoses. Among them the Idiopathic Photodermatoses has high prevalence ratio, Phototoxic and photoallergic reactions and Genodermatoses have middle prevalence ratio, and Phorphyrias and Photoexacerbated dermatoses have lowest prevalence ratio among the people of Buner. And we also investigated in our study that the male have grater prevalence ratio than female. The individual in younger stage have high prevalence ratio then children and older.

Our study show prevalence of Idiopathic Photodermatoses (75.25%) Phototoxic and photoallergic reactions (13.25%) and Phorophyrias (4%) Photoexacerbated dermatoses (2.5%) Genodermatoses (5%) among the people of Buner, these difference due to environmental change, food and socioeconomic status, etc. Or this is due to the large population found there.

Deng *et al.,* (2006) studied photodermatosis in four regions at different altitudes in Yunnan province, China. The studied a few dermatoses such as polymorphous light eruption (PLE) and chronic actinic dermatitis (CAD). The prevalence of PLE and CAD in China has not been previously reported. They investigate the population-based prevalence of polymorphous light eruption (PLE) and chronic actinic dermatitis (CAD) in six minority groups living in four regions with significantly different altitudes in the Yunnan province, a questionnaire survey was administered to 4899 residents of random villages in Yuanjiang county (Dai and Hani minorities), Kunming city (Han people and Yi minority), Lijiang county (Naxi minority), and Shangri-La county (Zang minority). The altitudes of these counties are 380 m, 1870 m, 2410 m and 3280 m a.s.l., respectively. The results showed that, first, there were 2400 males (49.0%)

and 2499 females (51.0%). The prevalence of PLE was 0.65% (32/4899), and the prevalence of CAD was 0.18% (9/4899). PLE was higher among females than males (3.8 vs 1, $P < 0.01$). Our current study show the male percentage of polymorphic light eruption is (42.75%) and female is (10.25%) is higher than the study of (Deng *et al.,* 2000) it is because of due to altitude, climate and other environmental factors.

Hamel *et al.,* (2020) conduct survey in racial distribution of photodermatoses in USA. There were 1,080 patients with photodermatoses identified. Statistically significant differences in the frequency of photodermatoses between Whites and Blacks were identified for polymorphous light eruption (more common in Blacks), photoallergic contact dermatitis, phototoxic drug eruption, phytophotodermatitis, porphyria, and solar urticaria (more common in Whites). The most commonly diagnosed photodermatoses were polymorphous light eruption, 672(62.22%) patients.

The current study is conducted in District Buner from first March 2022 to August 2022, the total number of patients is 212(53%).As according to our study the polymorphic light eruption in Buner is less from the racial distribution of photodermatoses in USA.

Our study show Idiopathic Photodermatoses (75%) is less from the survey of SN Wong *et al.,* (2005) and Polymorphic light eruption (PLE) is high (53%)and chronic actinic prurigo (8.7 %)lower and solar urticaria (6.25%) is high, this changes in percentage is due to position, altitude, climate and environmental factors.

Verma *et al*., (2019) reported prevalence of polymorphic light eruption (PLE) calculated was 5% in Malwa region, India. Total 100 cases participated in the study, the minimum and maximum age were 18 and 66 years respectively. There were 61 (61%) females and (39%) males. The majority of cases were found in the age group of 35-years(28%) followed by 30-35 years (19%). 71% cases were Hindus and only 29% Muslims were observed, reason for lesser prevalence in Muslims could be proper covering of the sun-exposed areas.

In our study show polymorphic light eruption (PLE) mostly affect the people which age range (20 to 50 years) and also here the PLE in male is 171(42.7%)patients (higher)and 41(10.2%) female patient (lower), may be due to environmental factors, climate change etc.

CONCLUSION

The present research was conducted during August 2021 to August 2022. A total of four hundred (400) patients of Photodermatoses were investigated in which a total of five (5) major different types were reported from the population of district Buner .The reported prevalence of Photodermatoses types are Idopathic Photodermatoses 301 (Polymorphic light eruption 212,Chronic Actinic prurig 35, Solar uriticaria 25, Phototoxic and photoallergic

reactions (53) Phorphyrias (16), Photoexacerbated dermatoses (10), Genodermatoses (20). In early stages the diagnoses and treatments of Photodermatoses were difficult due to unadvancement and lack of knowledge but now due to high technological tools Photodermatoses become easy to diagnose which lower the problems of Photodermatoses among the population of district Buner.

REFERENCES

Choi, D., Kannan, S., & Lim, H. W. (2014). Evaluation of patients with photodermatoses. *Dermatologic clinics*, *32*(3), 267-275.

Deng, D., Hang, Y., Chen, H., & Li, H. (2006). Prevalence of photodermatosis in four regions at different altitudes in Yunnan province, China. *The Journal of Dermatology*, *33*(8), 537-540.

Hamel, R., Mohammad, T. F., Chahine, A., Joselow, A., Vick, G., Radosta, S., ... & Lim, H. W. (2020). Comparison of racial distribution of photodermatoses in USA academic dermatology clinics: A multicenter retrospective analysis of 1080 patients over a 10-year period. *Photodermatology, photoimmunology & photomedicine*, *36*(3), 233-240.

Lehmann, P., & Schwarz, T. (2011). Photodermatoses: diagnosis and treatment. *Deutsches Ärzteblatt International*, *108*(9), 135.

Saeed, K., Khan, S., & Haq, F. (2013). Diversity and population status of fish fauna of river Barandu district Buner Khyber Pakhtunkhwa Province Pakistan. *Journal of Biodiversity and Environmental Sciences*, *3*(4), 83-88.

Santoro, F. A., & Lim, H. W. (2011, December). Update on photodermatoses. In *Seminars in cutaneous medicine and surgery* (Vol. 30, No. 4, pp. 229-238). WB Saunders.

Trakatelli, M., Charalampidis, S., Novakovic, L. B., Patsatsi, A., Kalabalikis, D., & Sotiriadis, D. (2009). Photodermatoses with onset in the elderly. *British Journal of Dermatology*, *161*, 69-77.

Verma, K., Rokde, R., & Singh, U. (2019). A clinic epidemiological and histo-pathological study of polymorphic light eruptions in malwa region. *Indian J Clin Exp Dermatol*, *5*, 24-9.