



Characteristics of Scabies Patients in Pediatric Population at Dermatology and Venereology Polyclinic

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ABSTRACT

Background: Scabies has affected over 200 million individuals and remains one of the most commonly encountered skin diseases in developing countries, including Indonesia, due to limited access to water, food, and infrastructure. Therefore, scabies poses a significant problem, particularly among children in Indonesia. Severe itching symptoms along with stigma and social isolation can disrupt the quality of life. **Purpose:** This study aims to investigate the prevalence and characteristics of pediatric patients with scabies in the local population, specifically at the Dermatology and Venereology Polyclinic of Prof. Dr. I.G.N.G. Ngoerah Denpasar Hospital. **Methods:** A retrospective descriptive study conducted in a cross-sectional manner. Data were obtained from the medical records of all pediatric patients diagnosed with scabies at the Dermatology and Venereology Polyclinic of Prof. Dr. I.G.N.G. Ngoerah Denpasar Hospital from January 2021 to December 2023. The outcomes sought included the number of cases, gender, age, nutritional status, parents' education level, and treatment administered. **Result:** This study included a total of 53 pediatric patients. The majority of patients were male, comprising 34 patients (64.2%). There were 20 children (37.7%) with normal nutritional status, 16 children (30.2%) classified as underweight, 9 children (17%) classified as overweight, and 8 children (15.1%) classified as obese. Based on parental education level, 29 parents of the patients had completed high school education (54.7%), while the remainder had completed undergraduate (37.7%) and junior high school (7.5%). A total of 52 patients (98.1%) received 5% permethrin as scabies treatment. **Conclusion:** This study has provided important characteristic data in mapping the population vulnerable to scabies among children, particularly in the Bali region.

Keywords: pediatric, scabies, characteristic.

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BACKGROUND

Scabies is a globally prevalent dermatological condition that affects individuals across various age groups, ethnicities, and socioeconomic backgrounds. Epidemiological data indicate that scabies affects over 200 million individuals worldwide. The condition is particularly common among high-risk populations, including pediatric and geriatric individuals. Data from the Indonesian Ministry of Health (2013) estimates the national prevalence of scabies at 3.9% to 6%, with rates as high as 84.8% among children residing in Islamic boarding schools (*pesantren*), which is the age range of 10-18 years.^{1,2,3}

Scabies is highly prevalent in tropical and humid regions, particularly in areas with inadequate sanitation, limited access to clean water, and high

population density.² Several epidemiological factors contribute to its transmission and persistence, including social behaviors, population mobility, limited healthcare access, suboptimal treatment strategies, and poor personal hygiene.^{4,5}

In humans, scabies is caused by the infestation of *Sarcoptes scabiei* female mites, which burrow into the stratum corneum of the epidermis. The hallmark clinical manifestations include intense nocturnal pruritus and erythematous lesions, predominantly affecting intertriginous areas. In pediatric patients, characteristic findings include burrows and erythematous papules. Infants and young children who are unable to scratch may exhibit irritability, restlessness, and feeding disturbances.^{6,7}

A definitive diagnosis is established through microscopic examination of skin scrapings to identify *Sarcoptes scabiei* mites, ova, or fecal material. However, a negative skin scraping does not exclude the diagnosis. Alternative diagnostic modalities include the burrow ink test and adhesive tape stripping. The burrow ink test enhances visualization of the characteristic curvilinear burrows by applying ink to the suspected lesion. Adhesive tape stripping involves applying transparent tape to the affected area to remove the superficial stratum corneum along with mites, which are subsequently examined under a microscope for diagnostic confirmation.^{8,9,10}

The pharmacological management of scabies in pediatric patients primarily involves topical 5% permethrin lotion. In severe cases, oral ivermectin may be considered. Most patients experience symptomatic improvement within three days; however, pruritus and erythema may persist for up to four weeks, a phenomenon referred to as postscabetic itch.^{7,10,11}

Indonesia, as a developing tropical country, continues to face challenges related to limited access to clean water, food, and adequate infrastructure. Consequently, scabies remains a significant public health concern, particularly among pediatric populations. This study aims to determine the prevalence and clinical characteristics of pediatric scabies patients in the local population, specifically at the Dermatology and Venereology Outpatient Clinic of RSUP Prof. Dr. I.G.N.G. Ngoerah Denpasar. The findings from this study are expected to contribute to a better understanding of the clinical profile of pediatric scabies cases in this healthcare setting.

METHODS

This study adopts a retrospective descriptive cross-sectional design, analyzing secondary data from medical records of pediatric patients who presented to the Dermatovenereology Outpatient Clinic at RSUP Prof. Dr. I.G.N.G. Ngoerah Denpasar between 2021 and 2023. The inclusion criteria comprise pediatric patients diagnosed with scabies based on clinical assessment, including history-taking, physical examination, dermoscopy examination, and a positive result from a skin scraping test, skin scraping test performed by a dermatology and venereology specialist, with a documented complete treatment history and comprehensive medical records. Patients with incomplete medical records were excluded from the study. All eligible patients who met the inclusion criteria during the study period were included in the analysis. This research has been reviewed and

approved by the Ethics Committee at the Faculty of Medicine, Udayana University, with number 0733/UN14.2.2.VII.14/LT/2024.

RESULT

Based on medical record data from pediatric scabies cases at the Dermatovenereology Outpatient Clinic of RSUP Prof. Dr. I.G.N.G. Ngoerah from 2021 to 2023, a total of 53 new cases were identified. The annual distribution of cases included 12 cases in 2021, 18 cases in 2022, and 23 cases in 2023. The analysis of these cases assessed various characteristics, including patient age, sex, nutritional status, parental educational level, treatment received, and scraping test result. Table 1 presents a summary of these findings.

Table 1. Characteristics of pediatric scabies patients at the dermatology and venereology outpatient clinic, RSUP Prof. Dr. I.G.N.G. Ngoerah (2021–2023)

Period	Number of Pediatric Scabies Cases (n)	Percentage (%)
2021	12	22.6%
2022	18	34%
2023	23	43%

Pediatric scabies cases were more frequently observed in male patients, comprising 64.2% of the total cases, with the highest prevalence (77.4%) occurring in the 5–17-year age group. The majority of patients had a normal nutritional status (37.7%), and 54.7% of parents had attained a senior high school level of education. Topical 5% permethrin was the primary treatment, administered to 52 patients (98.1%). Mites, mite eggs, and/or scybala were found in all patients. A detailed summary of these findings is presented in Table 2.

DISCUSSION

In this study, a total of 53 pediatric scabies cases were identified at the Dermatology and Venereology Outpatient Clinic of RSUP Prof. Dr. I.G.N.G. Ngoerah Denpasar from 2021 to 2023, accounting for 66% of newly diagnosed cases. The majority of patients were male (64.2%), which aligns with the findings of Paramita et al. (2015), who reported that 66.7% of pediatric scabies cases at RSUD Dr. Soetomo Surabaya occurred in male patients, while 33.3% were female.⁴ Similarly, a study by Fauziah et al. reported that 75.37% of scabies cases at RS Al-Islam Bandung were observed in male patients, suggesting that this

predominance may be associated with lower awareness of personal hygiene practices.¹²

This retrospective study identified that 77.4% of pediatric scabies cases occurred in individuals aged 5–17 years. This finding aligns with previous studies by Paramita et al. (2015) and Retha et al. (2020), which reported the highest incidence among children aged 5–14 years (63.8–69%). The increased prevalence in this age group has been attributed to greater exposure to external environments and close contact with peers, which facilitates transmission within school settings. Additionally, children in boarding schools are at a higher risk due to shared personal items, such as towels and clothing, which contributes to the spread of *Sarcoptes scabiei* within communal living spaces.^{4,13}

Tabel 2. Characteristics of pediatric scabies patients at the dermatology and venereology clinic, RSUP Prof.Dr. I.G.N.G. Ngoerah (2021–2023)

Characteristic	Amount (n)	Percentage (%)
Gender		
Boy	34	64.2%
Girl	19	35.8%
Age		
0-1 years	4	7.5%
1-4 years	8	15.2%
5-17 years	41	77.4%
Nutritional Status		
Underweight	16	30.2%
Normal	20	37.7%
Overweight	9	17%
Obesity	8	15.1%
Therapy		
5% Permethrin 5%	52	98.1%
2% Sodium fusidate	1	1.9%
Parental Education Level		
Junior High School Graduate	4	7.5%
Senior High School Graduate	29	54.7%
Bachelor's Degree	20	37.7%
Scraping Test		
Mites	34	64.1%
Mite Eggs	48	90.5%
Scybala	52	98.1%

In this retrospective study, 37.7% of pediatric patients diagnosed with scabies had a normal nutritional status, while 30.2% were classified as underweight, 17% as overweight, and 15.1% as obese.

These findings align with the study conducted by Oktarina et al. (2021), which reported that the majority (76.7%) of pediatric scabies patients in Indonesian boarding schools had a normal nutritional status, whereas 7% were underweight, 11.8% were overweight, and 4.5% were obese.¹⁴ Although malnutrition is frequently cited as a potential risk factor for scabies, the evidence remains inconclusive. A study by Sehgal et al. in Uttar Pradesh demonstrated that most children diagnosed with scabies had a normal nutritional status, but there was no statistically significant association between nutritional status and scabies. Similarly, Salsabila et al. (2022) reported that the majority of pediatric scabies patients at RSUD Dr. Soetomo had adequate nutritional status.¹⁴

In this retrospective study, the highest proportion of parents of pediatric scabies patients had completed senior high school (54.7%), followed by those with a bachelor's degree (37.7%) and those with a junior high school education (7.5%). A lower level of parental education has been associated with limited awareness of hygiene and suboptimal health-related behaviors. A 2022 study in Ethiopia reported that 61.2% of mothers and 57.53% of fathers of children diagnosed with scabies had insufficient knowledge about the disease. Similarly, a study conducted in Iran found that 39.4% of fathers and 38.1% of mothers of pediatric scabies patients had completed only junior high school or lower, which was correlated with a higher incidence of scabies.^{2,13}

Regarding pharmacological management, 98.1% of patients in this study received topical 5% permethrin as the primary treatment, whereas 1.9% received 2% sodium fusidate due to prior scabies treatment within the past seven days at another healthcare facility and the presence of secondary bacterial infection. These findings are consistent with previous studies reporting that 97.3% of pediatric scabies patients received 5% permethrin as the first-line topical scabicide. This aligns with current clinical guidelines, which recognize 5% permethrin as the gold standard for scabies treatment, demonstrating an efficacy rate approaching 90%. Furthermore, 5% permethrin exhibits a favorable safety profile due to its minimal percutaneous absorption, resulting in low systemic bioavailability.^{13,14}

Based on the result of the scraping examination, three parameters were evaluated in the scraping test, which are mites, mite eggs, and scybala. Mites were detected in 34 cases (64.1%). Mite eggs were found in 48 cases (90.5%), indicating a high prevalence of active infestation. Additionally, scybala, which refers

to mite feces, was present in 52 samples, accounting for 98.1%, further supporting the presence of a significant mite burden.^{14,15}

Between 2021 and 2023, a total of 53 new pediatric scabies cases were documented at RSUP Prof. Dr. I.G.N.G. Ngoerah. The majority of affected patients were male, within the 5–17-year age group, and had a normal nutritional status. The most common parental education level was senior high school, and 5% permethrin was the primary treatment administered.

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