Correlation Between Knowledge, Attitudes and Behavior of General Practitioners in Primary Health Facilities Towards the Diagnosis and Management of Psoriasis

Diska Permai Suri[1], Suandy[2], Rudi Chandra[3]*

[1]Bachelor of Medicine, Faculty of Medicine, Dentistry, and Health Sciences, Universitas Prima Indonesia, Indonesia
[2,3]PUI Phyto Degenerative & Lifestyle Medicine, Universitas Prima Indonesia, Indonesia

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Corresponding Author:
Author Name*: Rudi Chandra
Email*: rudichandra1989@gmail.com

ABSTRACT

This study aimed to evaluate the knowledge, attitude, and behavior of general practitioners regarding the diagnosis and management of psoriasis in Primary Health Care (PHC) settings in Binjai City. A cross-sectional design was employed involving 66 general practitioners recruited through total sampling from PHC facilities in Binjai City. Data analysis was conducted using univariate methods and the Spearman Rho correlation test with a significance level of $\alpha = 0.05$. The results showed that most general practitioners had insufficient knowledge related to the diagnosis and management of psoriasis. A significant correlation was identified between knowledge and both diagnostic accuracy and management practices ($p < 0.001$), whereas attitude and behavior were not significantly associated with these outcomes ($p > 0.05$). In conclusion, improving the knowledge of general practitioners is essential to enhance diagnostic accuracy and management quality of psoriasis in PHC settings. Future research is recommended to utilize different measurement scales to obtain more comprehensive insights.

Keywords: psoriasis, knowledge, general practitioners, diagnosis

INTRODUCTION

The first healthcare facility visited by the community when experiencing medical complaints is Primary Health Care (PHC), which serves as the main gateway to the health system. The primary objective of PHC is to ensure equitable access to healthcare services for all individuals, regardless of geographical location or socioeconomic background [1]. o achieve this objective, various health programs have been implemented, one of which includes routine household visits aimed at identifying and documenting the health conditions of each individual [2]. Data obtained from these programs indicate that skin diseases are among the most frequently reported health complaints in the community. The occurrence of skin diseases is influenced by multiple contributing factors, including climate change, socioeconomic status, and geographical conditions. Areas with high humidity, in particular, play a significant role in increasing the risk and transmission of skin diseases [3].

Among the various skin diseases commonly encountered, psoriasis is one of the most prevalent dermatological disorders. Psoriasis is a chronic inflammatory condition characterized by erythematous plaques covered with thick white scales and sharply demarcated borders, and it can occur across all age groups [4]. The most frequently observed type is plaque psoriasis, which manifests as pinkish-red plaques with silvery white, wax-like scales on the scalp, trunk, and extremities such as the elbows and knees [5][6]. The most common type is chronic plaque psoriasis, which accounts for approximately 90% of all cases. Several other forms of psoriasis exist, including guttate psoriasis, generalized pustular psoriasis, palmoplantar psoriasis, and erythrodermic psoriasis [7]. The medical perspective on psoriasis has shifted significantly over recent decades. Historically, psoriasis was regarded merely as a disorder of skin cell proliferation. However, recent studies have demonstrated that psoriasis is, in fact, an autoimmune disease in which the body's immune system attacks the skin through T-cell activation, leading to inflammation [8]. Researchers have even identified cytotoxic T cells around small blood vessels, as well as within the epidermis and dermis of psoriatic lesions, and further classified T-cell subtypes based on the cytokines they produce [9].

Epidemiologically, psoriasis is a disease with a global impact. Reference [8] reports that the incidence rate of psoriasis across countries ranges from 0.09% to 11.43%, with a global prevalence estimated at approximately 2–5%. In the United States, epidemiological data indicate 63.8 cases of psoriasis per 100,000 people per year, increasing to 92.3 per 100,000 people per year in the age group of 70–79 years. In East

Asia, the prevalence has reached 0.14%. However, to date, Indonesia does not yet have accurate national data regarding the number of individuals affected by psoriasis [10]. Epidemiological reports also show that psoriasis occurs in men and women in nearly equal proportions, although some studies suggest a slightly higher prevalence among men [11].

Psoriasis affects not only the physical dimension but also psychological and social aspects. Individuals living with psoriasis often experience limitations in daily activities, social exclusion, and various mental health issues. Patients living with psoriatic conditions frequently struggle with stigma and reduced self-confidence, tend to withdraw from social interactions, and commonly experience sleep disturbances as well as symptoms of depression [12]. The decline in quality of life is reflected through feelings of low self-esteem, fear of social interaction, and even the emergence of suicidal ideation. Notably, individuals with psoriatic lesions evident in conspicuously visible regions like the face, scalp, and dorsal hand surface often grapple with heightened stigmatization compared to those afflicted with alternate dermatological conditions, consequently encountering diminished social support networks. Psoriasis is commonly associated with significant impairment of quality of life (QoL) [13]. Therefore, measuring the quality of life of patients is essential, for example through the Dermatology Life Quality Index (DLQI) questionnaire, to map the psychosocial burden associated with this disease [14].

The etiology of psoriasis is multifactorial, involving both genetic and environmental factors. Studies have shown that genetic factors account for approximately 60–70% of psoriasis cases, while genetic variations influence cytokine pathways such as TNF and IL-23, which are involved in the inflammatory process of psoriasis [15]. The exact cause of psoriasis is currently unknown, but human genome sequencing has identified nine distinct loci associated with psoriasis susceptibility (PSORS 1-9), which are part of the major histocompatibility complex (MHC) on chromosome 6p2 [16]. The development of psoriatic lesions occurs as a result of inflammation that triggers keratinocyte proliferation, followed by T-cell activation that releases inflammatory mediators and increases levels of pro-inflammatory cytokines [17].

Considering the complexity of the pathophysiology as well as the clinical and psychosocial impact of psoriasis, the management of this disease requires adequate competence from healthcare professionals. According to the national competency standards for general practitioners, psoriasis is categorized under competency level 3A, which indicates that although it is not an emergency condition, general practitioners must be able to provide initial therapy, determine appropriate referrals, and manage patients after they return from referral services. This highlights the crucial role of general practitioners in the diagnostic process and management of psoriasis within primary healthcare settings.

However, in practice, misdiagnosis of psoriasis is still frequently reported in primary healthcare facilities. This condition has the potential to result in inappropriate management, worsening of lesions, delayed specialist care, and an increased risk of physical and psychological complications for patients. Several studies have shown that diagnostic errors and improper management of psoriasis at the primary care level are often influenced by limited physician knowledge regarding clinical presentation, therapeutic options, and the proper referral pathway. In addition, physicians' attitudes toward the urgency of psoriasis management and their clinical behavior in applying treatment guidelines also play an important role. The Knowledge-Attitude-Practice framework, a cornerstone of health literacy, plays a crucial role in shaping human health behaviors [18].

Inadequate knowledge may lead general practitioners to fail to recognize the classic clinical manifestations of psoriasis, while negative attitudes toward chronic diseases can reduce motivation to conduct comprehensive evaluations. Clinical behaviors that do not adhere to established guidelines may also be reflected in inappropriate medication use, delayed referrals, and insufficient patient education. The three aspects knowledge, attitude, and clinical behavior are interrelated and collectively determine the quality of psoriasis diagnosis and management. The novelty of this study lies in its focus on examining these three variables simultaneously within the context of primary health care facilities, where evidence regarding psoriasis management is still limited, particularly in semi-urban regions such as Binjai City. Unlike previous studies that predominantly explore specialist settings, this research provides an updated and localized understanding of how general practitioners approach psoriasis in real-world primary care conditions. Therefore, it is essential to assess the correlation among these variables in general practitioners, particularly in primary health care facilities in Binjai City, as a basis for strengthening clinical competence and improving the quality of health care services for the community.

RESEARCH METHODS

This study employed an analytical quantitative design with a cross-sectional approach, in which data were collected at a single point in time to evaluate the relationship between knowledge, attitudes, and behaviors of general practitioners regarding the diagnosis and management of psoriasis. The research was conducted in primary healthcare facilities in Binjai City. The study population consisted of all general practitioners working in these facilities. A total sampling technique was used, resulting in the inclusion of the entire population as research participants, with a total of 66 general practitioners. The research instrument was a structured questionnaire developed to measure the variables of knowledge, attitude, and behavior related to the diagnosis and clinical management of psoriasis.

This study utilized two types of data, namely primary and secondary data. Primary data were obtained directly from respondents through the completion of questionnaires, making them original data that had not been previously processed. Secondary data were collected from relevant written sources, including textbooks, clinical guidelines, scientific journal articles, institutional reports, and other publications that served to strengthen the theoretical foundation of the study, support the development of research instruments, and assist in the interpretation of research findings.

Data collection techniques consisted of questionnaires and document review. The questionnaire served as the primary instrument to obtain information on the knowledge, attitudes, and behaviors of general practitioners related to the diagnosis and management of psoriasis. The instrument was designed in the form of a structured list of statements and was self-administered by respondents to ensure the objectivity of responses. In addition, document review was conducted to obtain relevant supporting data and references, including scientific literature on psoriasis, diagnostic and management guidelines, as well as

medical policies applicable in primary healthcare facilities.

Data were analyzed quantitatively using the Statistical Package for the Social Sciences (SPSS). The data processing stages included editing, coding, and tabulating to ensure that the collected data were accurately grouped according to the research variables and ready for statistical analysis. Prior to the main data collection, validity and reliability testing of the questionnaire was conducted. The construct validity of the instrument was assessed using the Pearson Product Moment correlation on 30 respondents, while the reliability test was performed using Cronbach's Alpha coefficient.

The research data were then analyzed using the Spearman Rank correlation test, considering that the data were ordinal and did not follow a normal distribution. This test was employed to identify the relationship between the variables of knowledge, attitude, and behavior of general practitioners with the accuracy of diagnosis and management of psoriasis. The criteria for decision-making in the correlation analysis were based on p-value comparison, as presented in the table below.

Table 1. Classification of Correlation Coefficients

Interval Koefesien	Correlation Level
0.000 – 0.199	Very Low
0.200 – 0.399	Low
0.400 – 0.599	Moderate
0.600 – 0.799	Strong
0.800 – 1.000	Very Strong

RESULT AND DISCUSSION

This section presents the findings of the study regarding the relationship between knowledge, attitudes, and behaviors of general practitioners and their accuracy in diagnosing and managing psoriasis in primary healthcare facilities in Binjai City. The analysis was carried out based on questionnaire responses and statistical processing using the Spearman correlation

test. The discussion focuses on the interpretation of the analytical results and their relevance to existing theories and previous research findings.

The study involved 66 general practitioners working in primary healthcare facilities in Binjai City. The characteristics of the respondents included age, sex, years of professional experience, and workplace setting.

Table 2. Respondent Characteristics Based on Age

Age	Frequency	Percentage (%)
20-25	4	6.0
26-30	21	31.8
31-35	27	40.9
36-40	11	16.5
41-45	3	4.5
Total	66	100.0

Based on Table 2, the largest age group consisted of respondents aged 33–35 years, totaling 27 individuals (40.9%), followed by 21 respondents aged 26–30 years (31.8%), 11 respondents aged 36–40 years (16.5%), 4 respondents aged 20–25 years (6.0%), and 3 respondents aged 41–45 years (4.5%). The majority of

respondents were aged 31–35 years (40.9%), indicating that most general practitioners working in primary healthcare facilities in Binjai City fall within the early to mid–adulthood productive age range. Subsequently, classification of respondents was performed based on gender (Table 3).

Table 3. Respondent Characteristics Based on Gender

Gender	Frequency	Percentage (%)
Male	23	34.8
Female	43	65.2
Total	66	100.0

Based on Table 3, the characteristics of respondents by gender indicate a noticeable imbalance

between male and female participants. The female group constitutes the majority, with 43 respondents

(65.2%), suggesting that women were more represented or more willing to participate in the study. In contrast, the male group consists of 23 respondents (34.8%), making up just over one-third of the total sample. This distribution reflects that the overall respondent pool is predominantly female. In total, 66 respondents (100%) were included in the study, demonstrating that the analysis captures perspectives from both genders, although with a higher proportion of female participants.

Table 4. Respondent Characteristics Based on Length of Service

Length of Service	Freuency	Percentage (%)
<1 Year	15	22.7
1-5 Years	26	39.4
>5 Years	25	37.9
Total	66	100.0

The duration of work experience as a general practitioner in this study was categorized into three groups: less than 1 year, 1–5 years, and more than 5 years. Based on the descriptive analysis in Table 4, 15 respondents (22.7%) had worked for less than one year, 26 respondents (39.4%) had worked for one to five years, and 25 respondents (37.9%) had worked for more than five years. The results show that the majority of respondents had a work experience of one to five years.

Table 5. Validity test on the knowledge, attitude, behavior, diagnosis and management questionnaire

Knowledge		Attitude		Behavior		Diagnosis and Management	
Correlation Coefficient	p-value	Correlation Coefficient	p-value	Correlation Coefficient	p-value	Correlation Coefficient	p-value
0.744	0.000	0.956	0,000	0.962	0.000	0.835	0.000
0.875	0.000	0.761	0.000	0.968	0.000	0.819	0.000
0.744	0.000	-0.703	0.000	-0.709	0.000	0.835	0.000
0.892	0.000	0.941	0.000	0.948	0.000	0.819	0.000
0.892	0.000	0.640	0.000	0.632	0.000	0.819	0.000
0.721	0.000	0.809	0.000	0.814	0.000	0.812	0.000
0.744	0.000	0.954	0.000	0.960	0.000	0.835	0.000
0.892	0.000	-0.724	0.000	-0.703	0.000	0.801	0.000
0.892	0.000	0.645	0.000	0.637	0.000	0.819	0.000
0.744	0.000	0.909	0.000	0.916	0.000	0.812	0.000

In Table 5, the instrument validity test showed that all knowledge items and all items related to diagnosis and management demonstrated a significant correlation with the total score ($p < 0.01$), with coefficients categorized as strong, indicating that the items were valid. For the attitude instrument, all items also showed significant correlations, although several items were negatively correlated and therefore required interpretation using reverse scoring.

For the behavior instrument, eight out of ten items were declared valid because they demonstrated a positive and significant correlation, while two items showed negative correlations and were excluded from further analysis. The reliability test results indicated that the knowledge and diagnosis–management instruments had a very high reliability coefficient ($\alpha = 0.946$). The behavior instrument demonstrated good reliability ($\alpha = 0.703$), while the attitude instrument fell into the sufficiently reliable category ($\alpha = 0.696$).

Table 6. Reliability Test Results

Indicators	Cronbach's Alpha	N
Knowledge	0.947	
Attitude	0.696	10
Behavior	0.703	
Diagnosis and Management	0.946	

These results indicate that the instrument has very high dependability (excellent) based on the reliability standard ($\alpha > 0.90$). This finding confirms that the psoriasis diagnostic and management questionnaire is a valid and appropriate tool for subsequent research, as each item consistently evaluates the same construct. Following this stage, a normality analysis was conducted (Table 7).

Table 7. Normality Test for Diagnosis and management questionnaire

Questionnaire	Statistics	p-value
Knowledge	0.764	0.000
Attitude	0.913	0.007
Behavior	0.874	0.001
Diagnosis and Management	0.766	0.000

Based on Table 7, the results of the normality test for the Diagnosis and Management questionnaire

indicate that all variables have p-values below 0.05. The Knowledge variable shows a statistic of 0.764 with a p-value of 0.000; the Attitude variable has a statistic of 0.913 and a p-value of 0.007; while the Behavior variable presents a statistic of 0.874 with a p-value of 0.001. Additionally, the Diagnosis and Management variable has a statistic of 0.766 with a p-value of 0.000. Since all p-values are less than 0.05, the results indicate that the data for all variables do not follow a normal distribution. Therefore, non-parametric statistical tests are required for further data analysis to ensure accurate interpretation of the findings.

Table 8. Correlation Between Variables

Questionnaire	Correlation Coefficient	p-value
Knowledge and Diagnosis	0.988	0.000
Knowledge and Attitude	-0.270	0.107
Knowledge and Behavior	0.181	0.145
Attitude and Diagnosis	-0.253	0.130
Behavior and Diagnosis	0.188	0.131

The results of the Spearman correlation test indicated a significant relationship between general practitioners' knowledge and their ability to diagnose psoriasis. The correlation coefficient of 0.988 with a p-value of 0.000 demonstrates a very strong and statistically significant association, suggesting that the higher the level of knowledge possessed by general practitioners, the better their ability to diagnose psoriasis. These findings reinforce the notion that knowledge is the most influential factor in the diagnostic process compared with the other variables examined.

Conversely, the relationship between knowledge and attitude yielded a correlation coefficient of –0.270 (p = 0.107), and the relationship between knowledge and behavior produced a correlation coefficient of 0.181 (p = 0.145), both indicating a weak and statistically non-significant association. Similar findings were observed in the relationship between attitude and diagnosis, which demonstrated a correlation coefficient of –0.253 (p = 0.130), and between behavior and diagnosis, with a correlation coefficient of 0.188 (p = 0.131). These results indicate that doctors' attitudes and behaviors do not play a significant role in the accuracy of psoriasis diagnosis. Therefore, the findings consistently demonstrate that knowledge is the dominant factor influencing clinical diagnostic ability, whereas attitudes and behaviors have not shown a meaningful contribution.

These findings are consistent with the notion that the diagnosis and management of psoriasis rely heavily on adequate clinical knowledge, considering that psoriasis is a chronic dermatological disease that is relatively uncommon in the general population but can have serious consequences on patients' quality of life, including mental health. The statistical analysis using SPSS also reinforces this conclusion, as the very low significance value (p < 0.001) demonstrates a strong correlation between knowledge and both diagnostic accuracy and clinical practice in patients with psoriasis.

Study [19] further reinforces these findings by explaining that psoriasis is a dermatological disorder characterized by wax-like plaques covered with white scales, typically found in flexural areas such as the elbows and knees. The study employed a web-based cross-sectional design to examine the knowledge, attitudes, and practices of psoriasis patients toward their condition, and the results demonstrated that good knowledge significantly influenced patients' health status, with a p-value < 0.001. According to the Knowledge-Attitude-Practice (KAP) theory, an increase in knowledge is expected to shape positive attitudes and result in appropriate health-related behaviors. This underscores the need to improve medical knowledge regarding psoriasis not only among healthcare professionals but also within the wider community to enhance the quality of life of individuals living with the disease.

Previous study conducted by [20] entitled "Knowledge and Attitude Among Resident Doctors Related to Ethical and Medicolegal Issues in a Teaching Hospital," also reported that there is not always a significant correlation between knowledge and behavior, nor between attitude and behavior among medical personnel. Nevertheless, adequate knowledge remains a fundamental component in the prevention and management of dermatological diseases, as it plays a crucial role in reducing the risk of clinical complications and declining patient quality of life.

Based on the findings of this study, enhancing general practitioners' knowledge regarding psoriasis must become a priority. This effort can be implemented through educational communication, scientific seminars, clinical workshops, and continuing medical education programs. Collaboration between healthcare facilities, professional organizations, and the health department could further strengthen the effectiveness of these initiatives. The health department also plays a vital role in coordinating program planning and regional health information systems.

The lack of updated data on the prevalence of psoriasis cases in the City of Binjai indicates a persistent gap in the disease reporting system, including limitations in the availability of documentation facilities and infrastructure. This condition may result in insufficient clinical exposure to psoriasis among medical personnel, which ultimately affects the accuracy of diagnosis and management. One strategical approach that can be adopted is the implementation of regular seminar programs, for example in conjunction with World Psoriasis Day on October 29, which can serve as a momentum to increase general practitioners' knowledge and awareness regarding the diagnosis and

management of psoriasis in primary healthcare facilities.

CONCLUSION

Based on the findings, this study concludes that general practitioners' knowledge shows a significant and very strong correlation with the accuracy of diagnosing and managing psoriasis in primary health care facilities in Binjai City, while attitudes and behaviors do not demonstrate significant associations with either outcome. These results highlight the dominant role of clinical knowledge, which remains at a moderate level with a 46% correct response rate, indicating the need for competency improvement. Strengthening primary care services should therefore prioritize continuous medical education through seminars, workshops, and integrated clinical training. Future studies with broader geographic coverage, larger sample sizes, and more diverse assessment methods are recommended to validate these findings and support improved early detection, diagnostic accuracy, and overall management of psoriasis in primary care.

REFERENCES

[1] S. A. Zandroto and P. S. M. L. Tobing, "Kesehatan Layanan Primer," *MediMeth J. Mhs. Prodi Sarj. Kedokt.*, vol. 2, no. 1, pp. 1–8, 2024.

[2] C. G. Diannita and E. I. Manurung, "KETERLIBATAN KELUARGA DALAM PELAYANAN KESEHATAN PRIMER: SCOPING REVIEW," *MAHESA Malahayati Heal. Student J.*, vol. 3, no. 3, pp. 711–721, 2023.

[3] R. Alfadli and S. Khairunisa, "Prevalensi Penyakit Kulit Infeksi dan Non-infeksi di Poliklinik Kulit dan Kelamin RSUD Jagakarsa Periode Februari 2023 - Januari 2024," *J. Kedokt. Meditek*, vol. 30, no. 3, pp. 151–156, 2024.

[4] E. Krisnarto, A. Novitasari, and D. M. Aulirahma, "Faktor Prediktor Kualitas Hidup Pasien Psoriasis : Studi Cross Sectional," *J. Kedokt. Muhammdiyah*, vol. 5, no. 1, pp. 43–51, 2016.

[5] A. Raharja, S. K. Mahil, and J. N. Barker, "Psoriasis: a brief overview," *Clin. Med. (Northfield. Il).*, vol. 21, no. 3, pp. 170–173, 2021, doi: 10.7861/clinmed.2021-0257.

[6] A. M. Affandi and K. Thiruchelvam, "Patient perspective on psoriasis: Psychosocial burden of psoriasis and its management in," *PLoS One*, vol. 19, no. 7, pp. 1–14, 2024, doi: 10.1371/journal.pone.0305870.

[7] S. Nawaz *et al.*, "Management of a Chronic Skin Disease in Primary Care: An Analysis of Early-Career General Practitioners' Consultations Involving Psoriasis," *Dermatology Pract. Concept. Manag.*, vol. 11, no. 3, pp. 1–10, 2021.

[8] M. R. E. Putra, D. I. Anggraini, S. H. Nasution, and H. T. Sibero, "Diagnosis dan Tatalaksana Psoriasis," *Medula*, vol. 13, no. 2, pp. 164–170, 2023.

[9] A.-M. Man, M. S. Orăsan, O.-A. Hoteiuc, M.-C. Olănescu-Vaida-Voevod, and T. Mocan, "Inflammation and Psoriasis: A Comprehensive Review," *Int. J. Mol. Sci.*, vol. 24, no. 22, pp. 1–31, 2023.

[10] L. Alverina, D. Hidajat, I. W. Hendrawan, and I. G. A. A. R. Medikawati, "Karakteristik penderita psoriasis di poliklinik rawat jalan dermatologi dan venereologi Rumah Sakit Umum Daerah Provinsi Nusa Tenggara Barat periode Januari 2016 – Desember 2020," *Intisari Sains Medis*, vol. 12, no. 3, pp. 880–885, 2021, doi: 10.15562/ism.v12i3.1118.

[11] M. M. Topik and N. Tacha, "Penatalaksanaan Psoriasis Terkini," *Top. M. M. (2023). Penatalaksanaan Psoriasis Terkini. 3(3).*, vol. 3, no. 3, pp. 134–156, 2023.

[12] F. Albreiki *et al.*, "Patient awareness and perspectives on psoriatic disease: results of the psoriasis and beyond survey from the Gulf region," *J. Dermatolog. Treat.*, vol. 36, no. 1, pp. 1–9, 2025, doi: 10.1080/09546634.2025.2485254.

[13] X. Zhang, H. Du, X. Liu, L. Liu, and T. Zhang, "Knowledge, Attitudes and Practices Towards Psoriasis Among Patients and Their Family Members," *Clin. Cosmet. Investig. Dermatology ISSN*, vol. 15, pp. 769–782, 2024, doi: 10.2147/CCID.S454798.

[14] U. M. R. Maulana, R. Mustikaningsih, and A. Arundina, "Hubungan Derajat Keparahan dan Kualitas Hidup Pasien Psoriasis RSUD dr. Soedarso Pontianak," *J. Mhs. PSPD FK Univ. Tanjungpura*, vol. 5, no. 1, pp. 1–15, 2017.

[15] Mutmainna, A. Sofyan, and M. Nasir, "Psoriasis Vulgaris," *J. Med. Prof.*, vol. 2, no. 2, pp. 129–134, 2020.

[16] W. K. Budianti, S. Anindya, A. A. Debinta, E. Novianto, E. M. Fitri, and E. H. Effendi, "KESESUAIAN TATA LAKSANA PSORIASIS DENGAN PANDUAN PRAKTIK KLINIS (PPK) DI RSUPN DR. CIPTO MANGUNKUSUMO," *MDVI*, vol. 46, no. 4, pp. 172–177, 2019.

[17] N. Nitiyoso, "Pilihan Pengobatan Sistemik pada Psoriasis," *Cermin Dunia Kedokt.*, vol. 49, no. 3, pp. 164–169, 2022.

[18] A. Mei, M. Luan, P. Li, J. Chen, and K. Mou, "Knowledge, attitude, and practice of psoriatic arthritis among patients with psoriasis," *Front. Med.*, vol. 11, no. November, pp. 01–14, 2024, doi: 10.3389/fmed.2024.1382806.

[19] J. Tian, L. Zhang, X. Zhao, and L. Yang, "Knowledge, attitude, and practice of psoriasis patients toward their diseases: a web-based, cross-sectional study," *Front. Med.*, vol. 11, no. April, pp. 1–10, 2024, doi: 10.3389/fmed.2024.1288423.

[20] T. Suryadi and Kulsum, "KNOWLEDGE AND ATTITUDE AMONG RESIDENT DOCTORS RELATED TO ETHICAL AND MEDICOLEGAL ISSUES IN A TEACHING HOSPITAL," *J. Pendidik. Kedokt. Indones.*, vol. 11, no. 4, pp. 349–362, 2022, doi: 10.22146/jpki.68915.