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RESEARCH ARTICLES

Nutritional Status Associated with the Incidence of Pityriasis Versicolor at the Al um Smart Center Islamic Boarding School, North Sumatra

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Abstract: Pityriasis Versicolor is a skin infection caused by the fungus Malassezia furfur. Factors that may influence the occurrence of Pityriasis versicolor include endogenous and exogenous factors. Endogenous factors that play a role include malnutrition, obesity, decreased immune system function, and the use of medications. Meanwhile, exogenous factors include the effects of sweating and temperature. This study aimed to determine the relationship between nutritional status and the incidence of Pityriasis versicolor among students at the Al Umm Smart Center Islamic Boarding School. Methods: This study used an analytical descriptive design with a cross-sectional method. The sample in this study consisted of 77 participants and was analyzed using the chi-square test. Results: There is a significant relationship between nutritional status and the incidence of Pityriasis versicolor (p = 0.000) at the Al Umm Smart Center Islamic Boarding School, North Sumatra. Conclusion: There is a relationship between nutritional status and the incidence of Pityriasis versicolor at the Al Umm Smart Center Islamic Boarding School, North Sumatra.

Keywords: Pityriasis versicolor, malassezia furfur, nutritional status

INTRODUCTION

Pityriasis Versicolor is a skin infection caused by the fungus Malassezia furfur. This disease can be found worldwide, with a prevalence of 50%, especially in areas with high humidity, and around 1,1% in colder regions.[1] In the United States, the prevalence of Pityriasis versicolor is estimated to be approximately 2.8% of the population.[2] The incidence of Pityriasis versicolor in Indonesia is relatively high, although accurate data are still unavailable. It is estimated that 40–50% of the population in tropical countries are affected by this disease. In several cities in Indonesia, including Jakarta, Pityriasis versicolor is the second most common skin disease after dermatitis.[3 4 5]

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Factors that may influence the occurrence of Pityriasis versicolor include endogenous and exogenous factors. Endogenous factors that play a role include malnutrition, obesity, decreased immune system function, and the use of medications. Meanwhile, exogenous factors include the effects of sweating and temperature, which affect skin humidity. Conditions that facilitate fungal growth include malnutrition and decreased immune system function. In addition, high temperature and humidity can increase sebaceous gland production, resulting in excessive sweating, which promotes the growth of the fungus Malassezia furfur.[6 7]

Several nutritional problems commonly faced by adolescents due to imbalanced dietary intake include underweight and overweight.[8,9] Nutritional status is influenced by the adequacy of daily nutrient intake recommended for each population group, including adolescent students in Islamic boarding schools.[10,11,12] Food provision in institutions, such as Islamic boarding schools, aims to meet the nutritional needs of students.[13] The food provided by the boarding school contributes significantly to the students' nutritional intake, which in turn affects their nutritional status.[8,14]

Nutritional status indicating overweight conditions can lead to excessive sweat production due to a higher percentage of body fat. Body fat generates more heat, causing the body to release that heat through sweating. Individuals who are overweight have a larger body surface area and produce more sweat compared to individuals with normal body weight.[9,10,15,16]

Islamic boarding schools are environments that are vulnerable to skin problems, particularly fungal infections such as Pityriasis versicolor. Previous studies have indicated an association between body mass index and the occurrence of Pityriasis versicolor. Individuals with an overweight body mass index have a higher risk of developing Pityriasis versicolor compared to individuals with an underweight body mass index. Based on the explanation above, the authors were interested in conducting a study on the relationship between nutritional status and the incidence of Pityriasis versicolor at Al Umm Smart Centre Islamic Boarding School, North Sumatra.

METHOD

This study used a non-experimental analytical design with a cross-sectional approach. The research sample consisted of students at Al Umm Smart Centre Islamic Boarding School, North Sumatra, who met the inclusion and exclusion criteria. The researchers collected primary data obtained directly through measurements and physical examinations conducted on the research participants.

RESULT

Table 1. Sample Distribution by Age

Umur	n	%
13	27	35,1
14	21	27,3
15	4	5,2

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16	10	13
17	15	19,5
Total	**77**	**100**

Based on Table 1, it can be seen that the study sample was dominated by 13-year-olds, totaling 27 (35.1%) participants, while the least represented age was 15 years, with 4 (5.2%) participants.

Table 2. Sample Distribution by Gender

Jenis Kelamin	n	%
Laki-laki	39	60
Perempuan	38	40
Total	**77**	**100**

Based on Table 2, it can be seen that the study sample was slightly dominated by males, with 39 (50.6%) participants, while females accounted for 38 (49.4%) participants.

Table 3. Sample Distribution by Nutritional Status

Status Gizi	N	%
Obesity	23	29,9
Overweight	14	18,2
Normal	29	37,7
Underweight	11	14,3
Total	**77**	**100**

Based on Table 3, it is shown that the study sample was predominantly of normal nutritional status, with 29 (37.7%) participants, followed by obesity with 23 (29.9%) participants, undernutrition with 11 (14.3%) participants, and overweight with 14 (18.2%) participants.

Table 4. Sample Distribution by Pityriasis Versicolor

Pityriasis versicolor	N	%
Pityriasis versicolor	38	49,4
Non Pityriasis versicolor	39	50,6
Total	**77**	**100**

Based on Table 4, it is shown that 38 (49.4%) participants had Pityriasis versicolor, while 39 (50.6%) participants did not have Pityriasis versicolor.

Table 5. Association Between Nutritional Status and the Occurrence of Pityriasis Versicolor

Nutritional Status	Pityriasis Versicolor						P-Value
	Pityriasis Versicolor		Non Pityriasis Versicolor		Total		
	N	%	N	%	N	%	
Obesity	20	87	3	13	23	100	**0,000**
Overweight	4	28.6	10	71.4	14	100	
Normal	11	37.9	18	62.1	29	100	
Underweight	3	27.3	8	72.7	11	100	

Based on Table 5, Pityriasis versicolor was found in 20 (87%) participants with obesity out of a total of 23, 4 (28.6%) participants with overweight out of 14, 11 (37.9%) participants with normal nutritional status out of 29, and 3 (27.3%) participants with undernutrition out of 11. Meanwhile, among participants without Pityriasis versicolor, there were 3 (13%) with obesity out of 23, 10 (71.4%) with overweight out of 14, 18 (62.1%) with normal nutritional status out of 29, and 8 (72.7%) with undernutrition out of 11.

The chi-square statistical test result showed $p = 0.000$ ($p < 0.05$), indicating a significant association between nutritional status and the occurrence of Pityriasis

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versicolor at Al Umm Smart Centre Islamic Boarding School, North Sumatra.

DISCUSSION

In Table 3, regarding the frequency distribution of students at Al Umm Smart Centre Islamic Boarding School, North Sumatra based on nutritional status, it was found that the study sample was predominantly of normal nutritional status, with 29 (37.7%) participants. This finding is consistent with a study by Anandya (2023) at an Islamic boarding school in Surabaya, which reported that the majority of respondents had normal nutritional status, totaling 39 individuals (67.24%). Nutritional status is a condition of the body resulting from the accumulation of dietary intake and physical activity. It is influenced by the intake of macronutrients (carbohydrates, fats, proteins) and micronutrients (vitamins and minerals). The intake of both macronutrients and micronutrients among female students is obtained from main meals and snacks consumed daily.[22 24]

In Table 4, regarding the frequency distribution of students at Al Umm Smart Centre Islamic Boarding School, North Sumatra based on Pityriasis versicolor, it was found that 38 (49.4%) participants had Pityriasis versicolor. This finding is in line with a study by Dientyah et al. (2023) at Qodratullah Langkan Islamic Boarding School, which reported that 64.8% of the sample had Pityriasis versicolor. Another study conducted by Zulfa (2022) showed that a greater proportion of samples were not diagnosed with Pityriasis versicolor, totaling 116 (70.7%) out of 164 samples.[2,4,17,18]

Based on a study by Mulyati et al. (2020), the high incidence of Pityriasis versicolor is attributed to personal hygiene factors, which greatly influence fungal growth.[19,20] These hygiene factors include sharing clothes, sharing towels, and the frequency of bathing per day.[21] Students' behavior that pays insufficient attention to personal hygiene, such as inadequate bathing, along with their dense daily activities from morning to night, can cause the skin to become moist and oily. This condition, particularly oily skin, supports the growth of fungi that cause Pityriasis versicolor on the skin surface.[22,25]

Based on statistical analysis using the chi-square test, a p-value of 0.000 ($p \leq 0.05$) was obtained, indicating a significant association between nutritional status and the occurrence of Pityriasis versicolor. This finding is consistent with a study conducted by Muliawati (2020), which showed that 57.1% of respondents with overweight and obese body mass index were diagnosed with Pityriasis versicolor.[23,24] This occurs because individuals with excess body weight have a higher body fat percentage, leading to increased body heat production and more sweating. Sweat is one of the risk factors for the occurrence of Pityriasis versicolor.[5]

In individuals with obesity, sebaceous gland activity increases, leading to excessive sebum production. This excess sebum can be

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metabolized by Malassezia spp. on the skin, producing unsaturated fatty acids that can damage the skin barrier. Increased sebum secretion also promotes the growth of lipophilic organisms and their overproliferation.[20]

Additionally, in obesity, the immune system may be impaired, affecting the body's ability to respond to infections. Malassezia can induce disease by triggering the production of inflammatory mediators in keratinocytes and resident immune cells in the skin, making it more susceptible to fungal colonization. As a result, Malassezia can shift to a pathogenic form that disrupts skin integrity and leads to the clinical manifestations of Pityriasis versicolor.[21]

CONCLUSION

1. The nutritional status of students at Al Umm Smart Centre Islamic Boarding School, North Sumatra was predominantly in the normal category, with 29 individuals.
2. The incidence of Pityriasis versicolor at Al Umm Smart Centre Islamic Boarding School, North Sumatra was found in 38 individuals.
3. There was an association between nutritional status and the occurrence of Pityriasis versicolor at Al Umm Smart Centre Islamic Boarding School, North Sumatra.

REFERENCES

1. Radila W. Hubungan Personal Hygiene Individu Dengan Kejadian Pityriasis Versicolor : Sebuah Tinjauan Pustaka. J Med Hutama. 2022;03(02):1758-1763.
2. Anggina DN, Prameswarie T, Hastuti R, Fahlevi MR. Pengaruh Perilaku Higiene Perorangan terhadap Kejadian Pityriasis Versicolor pada Santri. J Ilmu Kesehat Masy. 2023;12(02):117-123. doi:10.33221/jikm.v12i02.1852
3. Sofia R, Putri Mellaratna W, Fitria D. Pengaruh Peer Education Terhadap Pengetahuan Pencegahan Pityriasis Versicolor Pada Santri Madrasah Aliyah Pondok Pesantren Darul Ulum Kota Lhokseumawe. J Ilm Mns Dan Kesehat. 2023;6(2):197-205. doi:10.31850/makes.v6i2.1875
4. Maulida N, Atzmardina Z. Faktor-Faktor Yang Berhubungan Dengan Kejadian. Prepotif J Kesehat Masy. 2022;6(3):2280-2286.
5. Muliawati F, Krisnarto E, Kartikadewi A. Hubungan Indeks Massa Tubuh dan Kelembaban Kulit dengan Kejadian Pityriasis Versicolor pada Petugas Sampah di Purwodadi Body Mass Index and Skin Moisture Relationship to Pityriasis Versicolor Evidence of Garbage sampah meningkatkan kelembaban kulit . kerj. Med-Art. 2020;2(1):38-42.
6. Januwarsih S, Assa F, Firda diy, Munanda Putri N, Cahyono A. Pitiriasis Versikolor. Contin Med Educ. Published online 2022:349-358.
7. Rokhmah F, Muniroh L, Nindya TS. Dengan Status Gizi Siswi Sma Di

E-ISSN: 2528-410X

Pondok Pesantren Al-Izzah Kota Batu. :94-100.
8. Di S, Nurul P, Meulaboh F. Hubungan Asupan Energi Dan Protein Dengan Status Gizi Santri Di Pesantren Nurul Falah Meulaboh Tahun 2019 Saiful. 2021;1(7):194-203.
9. Pane R V, Aisyah A, ... Edukasi Pencegahan Obesitas Pada Remaja Santri Pondok Pesantren Hidayatullah Al Muhajirin Bangkalan. Community …. 2023;4(6):12744-12747. http://journal.universitaspahlawan.ac.id/index.php/cdj/article/view/23404%0Ahttp://journal.universitaspahlawan.ac.id/index.php/cdj/article/download/23404/16436
10. Baitul P, Kecamatan A, Putri R. Obesitas, Remaja Putri C. Published online 2023:491-497.
11. Pantaleon maria goreti. Hubungan pengetahuan gizi dan kebiasaan makan dengan status gizi remaja putri di SMAN 2 Kota Kupang. Chmk Heal J. 2019;3(3):69-76.
12. Dwimawati E. Gambaran Status Gizi berdasarkan Antropometri. J Mhs Kesehat Masy. 2020;3(1):1-6.
13. Amirullah A, Andreas Putra AT, Daud Al Kahar AA. Deskripsi Status Gizi Anak Usia 3 Sampai 5 Tahun Pada Masa Covid-19. Murhum J Pendidik Anak Usia Dini. 2020;1(1):16-27. doi:10.37985/murhum.v1i1.3
14. Supariasa IDN, Bakri B, Fajar I. Penilaian Status Gizi. 2nd ed. (Rezkina E, Agustin CA, eds.). EGC; 2016.
15. Hardinsyah, Supariasa IDN. Ilmu Gizi: Teori & Aplikasi. EGC; 2016.
16. Dewi PRV, Made ML, IGAA P. Prevalensi pitriasis versikolor pada murid kelas IX di SMPN 4 Denpasar Tahun 2017. J Med udayana. 2020;9(1):75-81. https://ojs.unud.ac.id/index.php/eum
17. Menaldi SLS, Bramono K, Indriatmi W. Ilmu Penyakit Kulit Dan Kelamin. 7th ed. FK UI; 2016.
18. Pradita RA, Wardani AN. Crash Course Dermatologi Dam Vnerologi. 1st ed. (Menaldi SLSW, Rahmayunita G, eds.). Elsevier; 2019.
19. Pramono AS, Soleha TU. Pitiriasis Versikolor: Diagnosis dan Terapi. J Agromedicine. 2018;8:449-453.
20. Silvia E, Eksa DR, Panongsih RN, Dewi S. Hubungan Indeks Massa Tubuh (Imt) Dengan Angkakejadian DermaSilvia, E., Eksa, D. R., Panongsih, R. N., & Dewi, S. (2021). Hubungan Indeks Massa Tubuh (Imt) Dengan Angkakejadian Dermatitis Seboroik Di Poliklinik Kulit Dankelamin Rsud Dr. H. Abdul Moeloek P. J Med Malahayati. 2021;4(3):217-225.
21. Sparber F, Ruchti F, LeibundGut-Landmann S. Host Immunity to Malassezia in Health and Disease. Front Cell Infect Microbiol. 2020;10(May). doi:10.3389/fcimb.2020.00198
22. Millatashofi AS, Adi AC. Hubungan Tingkat Kecukupan Asupan Zat Gizi Dan Kebiasaan Jajan Dengan Status Gizi Pada Remaja Santriwati Di Pondok

E-ISSN: 2528-410X

Pesantren Surabaya. Heal Tadulako J (Jurnal Kesehat Tadulako). 2023;9(2):121-127. doi:10.22487/htj.v9i2.672

23. Harahap S. Hubungan Hygiene Perseorangan Dengan Kejadian Pityriasis Versikolor Pada Siswa SMK Kesehatan Sentra Medika Medan. Biol Educ Sci Tecnol. 2022;5(1):197-203.
24. Hukmiyah Aspar A. Hubungan Status Gizi Dengan Siklus Menstruasi Pada Remaja Putri Di Pondok Pesantren Mizanul ' Ulum Sanrobone Kabupaten Takalar Tahun 2021. J Kesehat Delima Pelamonia. 2021;5(1):55-60.
25. Mulyati M, Latifah I, Utama AP. Hubungan Kebersihan Diri Terhadap Kejadian Tinea Versikolor Pada Santri Di Pondok Pesantren Muthmainnatul Qulub Al-Islami Cibinong Bogor. Anakes J Ilm Anal Kesehat. 2020;6(2):151-160. doi:10.37012/anakes.v6i2.366