

The Relationship Between Perceived Stress Scale (PSS) And Seborrheic Dermatitis Area Severity Index (SDASI) In Seborrheic Dermatitis Patients At Rspal Dr.Ramelan Surabaya

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ABSTRACT

Seborrheic dermatitis (DS) is a chronic skin disease that often occurs in areas rich in sebaceous glands, characterized by erythematous patches, plaques, and scales. Psychological factors, particularly stress, can influence sebum production and colonization by *Malassezia* spp., the leading cause of seborrheic dermatitis. Stress can increase skin inflammation and worsen DS symptoms. The severity of DS was assessed by the Seborrheic Dermatitis Area Severity Index (SDASI), while stress was measured by the Perceived Stress Scale (PSS). PSS is designed to measure the level of stress in everyday life. SDASI scale used to assess the severity of seborrheic dermatitis. The purpose of this study was to analyze the relationship between the level of stress, as measured by the Perceived Stress Scale (PSS), and the severity of seborrheic dermatitis, evaluated using the Seborrheic Dermatitis Area Severity Index (SDASI). The study involved 51 patients who met the inclusion and exclusion criteria. Data collection was conducted using PSS questionnaires, which totaled 14 questions, and the SDASI assessment to measure the severity of DS. The results showed that most patients experienced very severe stress (88.2%) and the severity of severe SDASI (74.5%). The correlation between PSS and SDASI showed a p -value of 0.010 ($p < 0.05$), indicating significant results between the level of stress and the severity of DS, with a correlation efficiency of 0.359. Stress can exacerbate the condition of seborrheic dermatitis, increasing PSS values.

Introduction

Seborrheic Dermatitis (SD) is a chronic, relapsing dermatitis in seborrheic areas, characterized by erythematous patches with unclear boundaries, plaques, and white or yellow scales⁽¹⁾. Seborrheic Dermatitis (SD) can occur in infants or adults. The most vulnerable SD patients are men, where severe stress factors, fatigue, and mental conditions such as severe depression cause this. The prevalence of seborrheic Dermatitis (SD) is 0.99-5.8% of all dermatological cases⁽²⁾

Seborrheic Dermatitis is caused by several triggering factors, including environmental factors, colonization of the fungus *Malassezia* spp., sebaceous gland activity, immunosuppression, endocrine, neurogenic, and iatrogenic factors, especially in adults (Fonseca, 2023). SD in children can occur in the first trimester, where there is a role of excessive sebaceous gland activity due to hormones from the mother. Changes in the skin microbiome, diagnosed as a clinical syndrome, as well as laboratory examinations with specific instrumentation, are rarely performed. Its treatment is expected to modulate sebum production, reduce colonization of the skin by *Malassezia* spp, and control inflammation⁽³⁾.

Seborrheic Dermatitis (SD) is measured in terms of severity using the Seborrheic Dermatitis Area and Severity Index (SDASI). SDASI is a new tool for determining the severity of a disease in everyday clinical practice. The severity of the disease is evaluated based on several signs, including erythema, dandruff, and pruritus, and is assigned a score ranging from 1 to 3 points. Assessment that includes the Seborrheic Dermatitis Area Severity Index (SDASI), which categorizes levels as mild, moderate, and severe. Subjective SDASI assessment of pruritus was evaluated in patients as follows: value 0, none; value 1, mild; value 2, moderate; and value 3, severe ⁽⁴⁾. Physicians use the Seborrheic Dermatitis Area Severity Index (SDASI) to assess the severity of seborrheic dermatitis, as it is more efficient, provides patients with a sense of comfort, and is more effective for evaluating the efficacy of a given drug ⁽⁵⁾. SDASI has good effectiveness, and the cost of laboratory tests is more efficient for complete blood count (CBC), and there is an assessment instrument of stress levels related to Seborrheic Dermatitis Area Severity Index (SDASI), namely the assessment of Perceived Stress Scale (PSS)

Research by Bin Saif et al. suggests that chronic stress damages the skin by causing neuroendocrine changes that weaken the immune system. The skin can lose its ability to respond to environmental hazards. Certain immune systems can misidentify chemicals that enter the body, leading to autoimmunity. Mast cells play an essential role in the body's excessive immunological response to stress and in the induction of neurogenic inflammation. Some skin diseases, such as seborrheic dermatitis, which cause high SDASI scores, can be caused by abnormalities in the body's immune system ⁽⁶⁾

The Perceived Stress Scale (PSS) is the most widely used instrument for assessing stress perception globally. The Perceived Stress Scale (PSS) was developed in 1983 by Cohen. The PSS was designed to evaluate the level of stress felt by people in situations beyond their control and

unpredictable ⁽⁷⁾. The Perceived Stress Scale (PSS) can be used in people with SD to assess stress levels. A high PSS rating indicates a high level of stress in the individual. DS patients who have high levels of stress will aggravate the condition of the patient's DS. The severity of DS can be measured through the Seborrheic Dermatitis Area Severity Index (SDASI). Based on this research, the relationship between the Perceived Stress Scale and the Seborrheic Dermatitis Area Severity Index remains a topic of interest to researchers. This study was conducted to analyze the relationship between perceived stress scale scores and the seborrheic dermatitis area severity index in the polygenital skin of the RSPAL. Ramelan Surabaya

Methodology

Study design and sampling method

This study employs an observational analytical research design with a cross-sectional method. Researchers will collect, record, and report questionnaire data obtained from patients with skin and genital poly suffering from seborrheic dermatitis at RSPAL Dr. Ramelan Surabaya. The study employed quantitative research methods, utilizing data from patient questionnaires. The population in this study consisted of all questionnaire data from patients with skin and genital polydermatitis who had been treated at Skin and Genital Polydermatitis Dr. Ramelan Surabaya. The sample used is data from purposeful sampling and was calculated using the Slovin formula, with a minimum sample size of 46 participants. The data was obtained based on the questionnaire data of patients with poly-inclusion criteria, skin and sex suffering from seborrheic dermatitis. 1. Patients diagnosed with seborrheic dermatitis by a genital dermatologist 2. Complete questionnaire Data 3. Patients over 18 years of age 4. The description of the lesson

Instruments Section of Perceived Stress Scale **14**

The characteristics presented are in the form of 14 questions used to assess the stress levels of seborrheic dermatitis patients at the RSPAL, DR. Ramelan Surabaya. PSS is an assessment instrument used to evaluate the level of a patient's stress by filling in a question from the PSS assessment which amounted to 14 questions, namely about upset unexpectedly, the ability to control important things, feeling stressed, the ability to cope with problems, the ability to cope with essential life changes, the ability to handle problems, the desire to run according to the patient's expectations, the inability to overcome all things, the ability to control disorders, the ability to control everything, the ability to control anger with things out of control, the ability to think about things that must be solved, the ability to control things to spend time, and finally the ability of patients to solve difficulties that are so high⁽⁸⁾.

gender	Frequenc y	Percentage
Male	21	41.2
Female	30	58.8
Total	51	100

Instruments Section of Seborrheic Dermatitis Area Severity Index

Karakteristik presented is an SDASI assessment used to assess the severity of the disease. The SDASI assessment determines the affected area score, which is the percentage of DS symptoms in the affected area compared to the surrounding area. Score 1 there are affected areas with an area of 10%, two affected areas with an area of 11% -30%, three affected areas with an area of 31% -50%, four affected areas with an area of 51% -70%, five affected areas with an area of >70% after assessing the affected area and then continuing the assessment of the degree of

erythema (E), papules (P), and scales (S) in each area. Score 0 there is no degree of severity, one there is a degree of mild severity, two there is a degree of moderate severity, 3 there is a degree of severe severity then calculated using the formula erythema + papules + scales then the results of the sum in times right with the extent of the affected area on the skin to produce SDASI assessment⁽⁹⁾

Statistical Analysis

SPSS version 25 for Windows was used to enter and evaluate data. The Kolmogorov-Smirnov method was used to determine data normality in this investigation. To characterize sample characteristics, the Perceived Stress Scale and Seborrheic Dermatitis Area Severity Index were utilized due to the abnormality of the data. The data analysis has a significance level of less than 0.05. The study was conducted from July to November 2024, using questionnaires filled out by patients with polygenic skin RSPAL, as directed by Dr. Ramelan Surabaya

Results and discussion

The study involved 51 patients with seborrheic dermatitis who were treated at RSPAL

Dr. Ramelan Surabaya. The patient population consisted of 21 men (41.2%) and 30 women (58.8%). Most patients were between the ages of 51 and 60 years (35.3%) and 61 and 70 years (19.6%). In terms of stress level, 45 patients (88.2%) experienced very severe stress, while six patients (11.8%) experienced severe stress. In terms of the severity of dermatitis, 13 patients (25.5%) had moderate SDASI, while 38 patients (74.5%) had severe SDASI. This study examines the relationship between stress level (PSS) and the severity of seborrheic dermatitis (SDASI)⁽¹⁰⁾. Seborrheic Dermatitis is a chronic skin disease that affects 1-3% of the world's population, with risk factors such as genetic predisposition, male sex, and alcohol consumption. The disease is associated with infection with *Malassezia* spp. This study showed that women over the age of 30 tend to have higher PSS scores, which is related to the severity of seborrheic dermatitis⁽¹¹⁾. The age range of 40-60 years is associated with a higher severity due to a decline in skin function. (Table 1)

Table 1. Frequency by gender & age

age	Frequency	Percentage
20-30 years old	11	21.6
31-40 years old	1	2
41-50 years old	4	7.8
51-60 years old	18	35.3
61-70 years old	10	19.6
71-80 years old	7	13.7
Total	51	100

The Perceived Stress Scale (PSS) was used to measure the patient's stress level, comprising 14 questions⁽¹²⁾. The lowest mode was observed in the question of inability to cope with everything (31%), while the highest mode was noted in the ability to control time (51%).

SPSS is a tool for measuring common levels of psychological stress. A high PSS score indicates a greater level of stress, which affects the condition of seborrheic dermatitis⁽¹³⁾. Stress can affect sebum production and promote colonization of *Malassezia* spp, which worsens seborrheic dermatitis. Psychological stress also contributes to inflammation and impaired skin barrier function, which exacerbates the disease⁽¹³⁾. (Table 2)

The SDASI assessment evaluates the severity of seborrheic dermatitis based on the extent of the affected area and the degree of symptom severity, including erythema, papules, and scales. This assessment is conducted by classifying the extent of the affected area and the severity of each symptom to generate an SDASI score ⁽¹⁴⁾. SDASI is used to assess the severity of seborrheic dermatitis based on the extent of the affected area and the severity of symptoms, such as erythema, papules, and scales ⁽¹⁵⁾. The study showed a predominance of erythema and papule symptoms in patients, with SDASI being used to objectively assess severity and help determine appropriate therapy⁽¹⁶⁾. (Table 3)

Normality and correlation test

* Normality test showed that the distribution of PSS data is not normal ($p = 0.043$), while the SDASI data is normal ($p > 0.05$).

* The correlation Test between PSS

and SDASI showed a significant relationship with a correlation coefficient of 0.359, indicating a positive relationship between stress level and severity of seborrheic dermatitis.

Research indicates a significant correlation between PSS and SDASI scores, where higher stress levels are associated with a more severe form of seborrheic dermatitis. Chronic stress increases sebum production and inflammation, which worsens the skin's condition ⁽¹⁷⁾. The study also notes that psychological stress can impact the skin microbiome, increase *Malassezia* colonization, and exacerbate seborrheic dermatitis. (Table 4)

Table 2. Frequency based on stress level

Stress	Frequency	Percentage
Normal	0	0
Mild Stress	0	0
Moderate Stress	0	0
Severe Stress	6	11.8
Very Heavy Stress	45	88.2
Total	51	100

Table 3. Frequency based on the severity of SDASI

SDASI	Frequency	Percentage
Lightweight	0	0
Medium	13	25.5
Severe	38	74.5

Table 4. Correlation value of PSS with SDASI

Variabel	N	Sig. (2-Tailed)	Correlation Coefficient
<i>Perceived Stress Scale</i>	51	0.010	0.359

There was a significant positive relationship between the level of stress experienced by patients with seborrheic dermatitis and the severity of their disease, although this relationship was relatively low. The study showed a significant relationship between psychological stress and the severity of seborrheic dermatitis. Sustained stress can worsen the condition of the skin, leading to a

cycle of inflammation and damage to the skin barrier. Further research is needed to address the limitations of this study, including the small sample size and potential lack of cooperation from some patients. The conclusion analysis of the PSS score with SDASI from this study indicates that PSS is associated with SDASI in patients with polyseborrheic dermatitis on their genital skin in RSPAL. Ramelan Surabaya Period 2024. This study proves that there is a relationship between the results of PSS scores with seborrheic dermatitis and the severity of seborrheic dermatitis

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