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# A Multicenter Cross-Sectional Study on Quality of Life and Work Productivity among Women with Skin Disease

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## ABSTRACT

**Background:** The most visible organ of a human being is considered to be the skin. The effects of visible skin disorders on quality of life (QoL) and productivity at work go far beyond their clinical manifestations, especially among women. The objective of this research is to evaluate the quality of life and work productivity of women with skin conditions who attend public hospitals. **Methods:** A Cross-sectional study was carried out from March 2023 to May 2023 at the dermatology clinics of Kuala Lumpur Hospital and Selayang Hospital. With 404 respondents, the researcher used a proportionate and random sampling technique. The Dermatology Life Quality Index (DLQI) and Work Productivity and Activity Impairment - General Health (WPAI- GH) scales were included in the self-administered questionnaire. The data in this study were analyzed using Statistical Packages for the Social Sciences (SPSS) Version 28. **Results:** Eczema was frequently diagnosed in the respondents (42.1%) aged 18–30 (53.7%) followed by acne vulgaris (30.9%) and psoriasis (27%). Patients with eczema had the most significant effect on the DLQI score (35.9%). The outcome for WPAI-GH observed psoriasis patients showed the highest absenteeism (M=8.6, SD=15.4). There was no significant difference between types of skin diseases with WPAI-GH subscales ($p$>0.05). Activity impairment was significantly associated with the DLQI score ($p$<0.05). **Conclusion:** These results demonstrated the need for dermatologists and nurses to develop comprehensive care approaches that address the multidimensional impact of skin diseases on patients to improve their quality of life and productivity at work by putting into practice strategies to overcome the issues. Since the nurses are at the forefront of patient care, they possess the expertise to recognize how skin diseases may influence patients' daily functioning and professional productivity; thus, specific strategies can be planned, which will improve the patient's overall health outcomes.

***Keywords: Acne Vulgaris; Eczema; Psoriasis; Quality of Life (QoL); Skin Disease; Women; Work Productivity***

## INTRODUCTION

The largest and most visible organ of the human body is considered to be the skin (AlOtaibi *et al*., 2021). A skin disease is any condition or disease that damages the human skin (Greaves, 2020). Regardless of culture, age, or socioeconomic status, skin conditions rank among the most common medical concerns worldwide (Mian *et al.*, 2019). Skin disorders, the fourth most common cause of all human diseases globally, affect over one-third of the world's population, yet their impact often goes unnoticed (Flohr & Hay, 2021). According to the World Health Organisation (WHO), skin diseases are one of the most common conditions affecting human health. Nearly 900 million people worldwide experience skin diseases at any given time (Dagne, 2018). Between 21 and 87% of people are susceptible to at least one skin condition (AlOtaibi *et al.*, 2021). The World Health Organization (WHO) recently released data for 2017, stating that skin disease deaths in Malaysia totaled 957, accounting for 0.69% of all deaths. The country is ranked 35$^{th}$ in the world with a death rate of 4.25 per 100,000 people (World Health Ranking, 2018).

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Skin conditions may significantly affect a patient's quality of life (QoL), impacting various aspects of the patient's daily life (Ali *et al*., 2018). Visible skin disorders have effects that reach beyond just their clinical aspects, especially in women, affecting their quality of life and emotional well-being (Mazlan & Sharoni, 2023). Many skin diseases, including serious ones like malignant melanoma, and ongoing ones like psoriasis and atopic dermatitis, can greatly impact how patients live. These conditions can make it difficult to engage in social activities and personal routines, and they can also lead to psychological issues such as depression and anxiety (Gisondi *et al*., 2023). Svensson *et al*. (2018) reported that skin diseases more frequently affected women than men. A study on skin diseases in Malaysia found that life quality significantly impacted younger adults and females more than older adults and males (Kassab *et al*., 2019). Patients suffering from psoriasis encounter more severe social stigma compared to individuals with other skin conditions, leading to significant and enduring emotional disturbances throughout their lives (Romiti, Magalhães, & Duarte, 2024). Skin disorders can affect anyone, but some are more common in women, according to dermatologists. These various skin diseases in women are most frequently caused by hormones, pregnancy, and lifestyle choices (Fellizar, 2019). Skin conditions can affect daily activities and cause physical and emotional discomfort in both children and adults (Seth *et al*., 2017). According to Schuster *et al*. (2020), a study demonstrates a robust correlation between psychosocial factors, particularly stress-related ones, and the occurrence, severity, and progression of skin diseases, with the potential for these factors to impact treatment strategies. Again, in an article by Ali *et al*. (2018), it was mentioned that several studies have found a connection between psychiatric morbidity and skin conditions. Various indicators have been utilized to explore the impact of different skin diseases on quality of life, as well as to evaluate the presence of psychiatric comorbidities (Oberoi *et al*., 2024). Few studies have examined how skin conditions affect quality of life and productivity at work in Malaysia. None of the studies specifically mention the quality of life (QoL) and work productivity among women affected by skin disease. Using scoring systems for skin diseases, such as the DLQI scoring system, at least once during the patient's initial visit to the dermatology department, it is crucial to learn how skin diseases can affect patients' QoL to address all the issues raised above. Instead of just concentrating on the disease, more comprehensive treatment delivery may consider all facets of the patient's condition. Foster collaboration between nurses and dermatologists, ensuring that participants receive multidisciplinary care. This can enhance the effectiveness of interventions and address both medical and nursing aspects of care. Therefore, the goal of this study is to raise awareness of the effects that skin disease patients experience, especially in terms of life quality and work productivity.

This research can give nurses and other healthcare providers a better understanding of the impact of skin diseases on women. Many unfavourable impacts of various skin issues negatively influence QoL; these effects, in turn, may impact treatment compliance and disease progression (AlOtaibi *et al.*, 2021). As a result, dermatologists, nurses, and other healthcare providers can use QoL measurements to track the impact of disease development. Quality of life measurements examine a patient's physical activity, professional, and social functioning. These indicators can be utilized to improve existing management alternatives or signal the need for new ones. Nursing education can improve the quality of care and patient outcomes by providing opportunities to improve practice skills and knowledge about the impact of skin diseases on their clients.

## METHODOLOGY

### Study Design and Setting

This quantitative, cross-sectional study was carried out at the dermatology clinics of Kuala Lumpur Hospital and Selayang Hospital. The Specialist Complex and Ambulatory Care Centre (SCACC) sixth floor is where the dermatology clinic for Kuala Lumpur Hospital is located. The dermatology clinic for Selayang Hospital is located on the fourth floor of a daycare complex. These clinics were crucial components that would receive referral cases from other divisions, general practitioners, and even outpatient care facilities.

### Participants and Sampling Procedure

In accordance with the sample size determined by the Raosoft sample size calculator (Raosoft, 2020) and considering a dropout rate of 10%, the total sample size was 420. There were 120 respondents from Selayang Hospital and 300 from Kuala Lumpur Hospital. With a response rate of 96.2% overall, the study was able to get 404 patients to complete the questionnaires. In contrast to Kuala Lumpur Hospital, where the response rate was

94.7% (n=284), Selayang Hospital had a 100% response rate (n=120). The clinic required the respondent to complete four sections of a set of questionnaires, totaling 55 items, before they could see a doctor. Each participant received the questionnaire individually after the researcher explained their rights. The researcher and the participant only obtained a signature on the consent form after reaching an agreement.

The investigator used a proportionate sampling technique, dividing a limited population (from Kuala Lumpur Hospital and Selayang Hospital) into subpopulations and using random sampling techniques on each subpopulation. Eligible and volunteered respondents were then approached using random sampling methods, which means everyone that meets the criteria will have the probability of being a sample of the study. The study recruited a total of 404 respondents between March 2023 and May 2023. The researcher concentrated on female dermatology clinic clients who had psoriasis, acne vulgaris, and eczema diagnoses. Patients with psoriasis, acne vulgaris, and/or eczema who are female, with an age of ≥ 18, and who can understand and read Malay and/or English, are included in the study. The study excludes patients diagnosed with more than three chronic skin diseases and female patients older than 60.

**Study Instruments**

This study used a set of questionnaires to address the following research objectives:

**Sociodemographic Data**

This is based on age, race, religion, educational status, household income, employment status, and marital status.

Clinical Data include diagnosis, year of diagnosis, types of treatment, and comorbid disease.

**Work Productivity and Activity Impairment – General Health (WPAI-GH)**

The WPAI-GH questionnaire was used to evaluate how the respondents' general health and specific symptoms had affected their ability to work productively and in other areas over the previous seven days. Reilly, Zbrozek & Dukes, 1993 first developed this instrument in 1993 and have since translated it into over 80 languages worldwide. This study used the most recent WPAI-GH update from October 2004 (Reilly Associates, 2019). The WPAI-GH has four (4) subscales. The subscales for the instrument are (i) absenteeism (work time missed): (ii) presenteeism (impairment at work or reduced on the job effectiveness); (iii) work productivity loss (overall work impairment or absenteeism plus presenteeism); and (iv) activity impairment. The scores for the subscales were expressed as impairment percentages, which are higher scores that reflect more absence from work and greater impairment at work and daily activities. It includes six questionnaires to assess the subscales above for the last seven respondents. Results were multiplied by 100 and expressed as percentages of time lost. A higher percentage indicates greater depreciation and less productivity.

**Ethical Consideration**

The study received ethical approval from Research Ethics Committee of University of Technology, Malaysia MARA, Malaysia, with reference number FERC/FSK/MR/2022/0211 on 12th September 2022and the Research Ethics Committee (MREC) of the Ministry of Health Malaysia with reference number NMRR ID-22-02280-UDK (IIR) on 7th December 2022.

**Data Analysis**

Statistical Packages for the Social Sciences (SPSS) Version 28 was used to independently analyse the data in this study. The mean, standard deviation (SD), minimum, and maximum values were provided for quantitative measures, whereas for categorical measurements, the absolute percentage and relative frequencies were represented. Percentages, means, and standard deviations were used for descriptive data. A one-way analysis of variance (ANOVA) was used to find the relationship between the two quantitative variables. Prior to performing multiple linear regression (MLR), simple linear regression (SLR) was used to account for confounding variables. The relationship between various skin conditions and work productivity in the direction of quality of life has been modeled using MLR. Inferential analyses have been presented as 95% confidence intervals (95% confidence interval CI), and *p*-value of less than 0.05 is considered statistically significant throughout the analysis.

## RESULTS

### Sociodemographic Data of Respondents

In this study, 404 patients in total were involved. Most participants in the study (53.7%) were aged between 18 and 30 years old, with a mean age of 32.2 years and a standard deviation (SD) of 10.2. Two-thirds of respondents were graduates (66.1%), Malay (78.7%), and Muslims (81.4%). The respondents' mean household income was RM 4815.40, while their standard deviation (SD) was 4408.8. The majority (63.1%) fell into the B40 (RM 4850.00) category, followed by the unmarried (59.9%) and currently employed (67.3%) groups. Table 1 provides more details about the sociodemographic data.

***Table 1: Sociodemographic Characteristics of the Respondent (N = 404)***

| Variable | Mean | ±SD | Frequency (n) | Percentage (%) |
|---|---|---|---|---|
| **Age** | 32.2 | 10.2 | Min = 18 | Max = 60 |
| Young Adults (18-30) | | | 217 | 53.7 |
| Middle-aged Adults (31-45) | | | 138 | 34.2 |
| Old-aged Adults (Above 45) | | | 49 | 12.1 |
| **Race** | | | | |
| Malay | | | 318 | 78.7 |
| Chinese | | | 38 | 9.4 |
| India | | | 31 | 7.7 |
| Others (Iban, Kadazan, Bidayuh, Sikh) | | | 17 | 4.2 |
| **Religion** | | | | |
| Islam | | | 329 | 81.4 |
| Buddhist | | | 33 | 8.2 |
| Christian | | | 13 | 3.2 |
| Hindu | | | 28 | 6.9 |
| Sikh | | | 1 | 0.2 |
| **Educational Status** | | | | |
| Primary | | | 5 | 1.2 |
| Secondary | | | 109 | 27.0 |
| Graduate | | | 267 | 66.1 |
| Others (No Specific Education) | | | 23 | 5.7 |
| **Household Income** | 4815.4 | 4408.8 | Min = 300 | Max = 40000 |
| B40 (<RM 4850.00) | | | 255 | 63.1 |
| M40 (RM 4850.00 - RM 10959.00) | | | 133 | 32.9 |
| T20 (≥RM 10960.00) | | | 16 | 4.0 |
| **Employment Status** | | | | |
| Employed | | | 272 | 67.3 |
| Unemployed | | | 132 | 32.7 |
| **Marital Status** | | | | |
| Married | | | 162 | 40.1 |
| Unmarried (Single, Divorce, Widow) | | | 242 | 59.9 |

### Clinical Data of Respondents

The clinical data revealed that eczema affected a significant portion of the respondents (42.1%), followed by acne vulgaris (30.9%) and psoriasis (27.0%). The majority of the respondents (67.3%) had the disease for less than or equal to five years when they received their diagnosis, and more than half (59.9%) received topical and pill treatments, with about 65.6% receiving more than one (1) number of treatments. The respondents' mean year of diagnosis was 5.8 years, with a standard deviation (SD) of 7.0. More than three-quarters of the

respondents (78.0%) did not have any comorbid conditions, further classifying them as having no comorbid conditions (78.0%). Asthma (9.2%), Diabetes Mellitus (4.7%), Hypertension (2.7%), and other diseases were among the few comorbidities identified by respondents, as shown in Table 2.

***Table 2: Clinical Data of the Respondents (N = 404)***

| Variable | Mean | ±SD | Frequency (n) | Percentage (%) |
|---|---|---|---|---|
| **Diagnosis** | | | | |
| Psoriasis | | | 109 | 27.0 |
| Acne Vulgaris | | | 125 | 30.9 |
| Eczema | | | 170 | 42.1 |
| **Duration of Diagnosis** | 5.8 | 7.0 | Min = 0 (< 1 year) | Max = 39 |
| ≤5 years | | | 272 | 67.3 |
| >5 years | | | 132 | 32.7 |
| **Type of Treatment** | | | | |
| Topical | | | 116 | 28.7 |
| Pill | | | 12 | 3.0 |
| Injection | | | 12 | 3.0 |
| Topical and Pill | | | 242 | 59.9 |
| Topical and Injection | | | 2 | 0.5 |
| Topical and Phototherapy | | | 1 | 0.2 |
| Pill and Injection | | | 4 | 1.0 |
| Topical, Pill, & Injection | | | 11 | 2.7 |
| Topical, Pill, & Laser | | | 1 | 0.2 |
| Topical, Pill, & Phototherapy | | | 3 | 0.7 |
| **Number of Treatments** | | | | |
| 1 treatment | | | 139 | 34.4 |
| >1 treatment | | | 265 | 65.6 |
| **Comorbid** | | | | |
| None | | | 315 | 78.0 |
| Asthma | | | 37 | 9.2 |
| Asthma and Arthritis | | | 1 | 0.2 |
| Asthma and Hypertension | | | 2 | 0.5 |
| Asthma and Rheumatoid | | | 1 | 0.2 |
| Allergic Rhinitis | | | 1 | 0.2 |
| Cancer | | | 1 | 0.2 |
| Diabetes Mellitus | | | 19 | 4.7 |
| Diabetes Mellitus and Hypertension | | | 2 | 0.5 |
| Diabetes Mellitus and Hyperlipidemia | | | 1 | 0.2 |
| Diabetes Mellitus and Rheumatoid | | | 1 | 0.2 |
| Heart Disease | | | 1 | 0.2 |
| Hypertension | | | 11 | 2.7 |
| Hypertension and Hyperlipidemia | | | 1 | 0.2 |
| Hyperlipidemia | | | 2 | 0.5 |
| Hyperthyroidism | | | 1 | 0.2 |
| Osteoarthritis | | | 1 | 0.2 |
| Rheumatoid Arthritis | | | 1 | 0.2 |
| Systemic lupus erythematosus (SLE) | | | 1 | 0.2 |
| Thyroid and Hyperlipidemia | | | 1 | 0.2 |
| **Number of Comorbid** | | | | |
| None | | | 315 | 78.0 |
| 1 Comorbid | | | 79 | 19.6 |
| >1 Comorbid | | | 10 | 2.4 |

## The Quality of Life of Respondents

Corresponding to Table 3, the respondents' impact on DLQI scores was very large effect (n=130, 32.2%). The most significant effect was experienced by the eczema patients (n=61, 35.9%), followed by psoriasis and acne vulgaris at 30.3% (n=33) and 28.8% (n=36), respectively.

***Table 3: Dermatology Life Quality Index (DLQI) Score among Respondents (N = 404)***

| **Skin Diseases** | | | | **Total (%)** |
|---|---|---|---|---|
| **DLQI Scores** | **Psoriasis *n*=109 *n* (%)** | **Acne Vulgaris *n*=125 *n* (%)** | **Eczema *n*=170 *n* (%)** | |
| No effect | 3 (2.8) | 13 (10.4) | 10 (5.9) | 26 (6.4) |
| Small effect | 25 (22.9) | 35 (28.0) | 31 (18.2) | 91 (22.5) |
| Moderate effect | 35 (32.1) | 34 (27.2) | 49 (28.8) | 118 (29.2) |
| Very large effect | 33 (30.3) | 36 (28.8) | 61 (35.9) | 130 (32.2) |
| Extremely large effect | 13 (11.9) | 7 (5.6) | 19 (11.2) | 39 (9.7) |
| Scoring/ Mean±SD (Min–Max) | 11.1±7.7 (1–30) | 8.8±6.5 (1–27) | 11.0±6.9 (1–30) | - |
| **Total (%)** | 109 (100.0) | 125 (100.0) | 170 (100.0) | **404 (100)** |

## The Relationship between Types of Skin Disease and Work Productivity among Women with Skin Disease

The WPAI-GH variables included four (4) subscales, which were absenteeism, presenteeism, work productivity loss, and activity impairment. The mean and SD of the WPAI-GH of the respondents were assembled in Table 4. When compared to patients with psoriasis and acne vulgaris, eczema patients showed higher rates of absenteeism (M=8.6, SD=15.4), presenteeism (M=21.2, SD=26.9), lost productivity at work (M=26.1, SD=27.3), and activity impairment (M=35.2, SD=27.0). Women with various types of skin diseases did not significantly differ in their work productivity subscale scores, according to the one-way ANOVA test. Based on this analysis, it can be concluded that psoriasis, acne vulgaris, and eczema do not significantly affect these women's absenteeism ($p$=0.059), presenteeism ($p$=0.713), loss of work productivity ($p$=0.776), or activity impairment ($p$=0.149).

***Table 4: The Relationship between Types of Skin Disease and Work Productivity (WPAI– GH) in Various Subscales (N = 404)***

| **WPAI-GH Subscales** | **Skin Diseases** | | | **F-statistic[a] *(df)*** | ***p*-value** |
|---|---|---|---|---|---|
| | **Psoriasis *n*=109** | **Acne Vulgaris *n*=125** | **Eczema *n*=170** | | |
| **Absenteeism** | | | | | |
| Mean±SD | 8.6±15.4 | 4.7±9.0 | 6.9±12.5 | 2.86 (2,401) | 0.059 |
| (Min–Max) | (0–100) | (0–69.23) | (0–80) | | |
| **Presenteeism** | | | | | |
| Mean±SD | 18.6±24.4 | 20.6±24.9 | 21.2±26.9 | 0.34 (2,401) | 0.713 |
| (Min–Max) | (0–100) | (0–100) | (0–100) | | |
| **Work Productivity Loss** | | | | | |
| Mean±SD | 24.8±26.1 | 24.0±24.3 | 24.8±26.1 | 0.25 (2,401) | 0.776 |
| (Min–Max) | (0–100) | (0–100) | (0–100) | | |
| **Activity Impairment** | | | | | |
| Mean±SD | 33.1±27.8 | 29.0±26.6 | 35.2±27.0 | 1.91 (2,401) | 0.149 |
| (Min–Max) | (0–100) | (0–100) | (0–100) | | |

[a]*One-way ANOVA test*

### The Relationship Between the Types of Skin Disease and Work Productivity Toward the Quality of Life among Women with Skin Disease

The one-way ANOVA test results in Table 5 showed a significant difference between the different types of skin diseases on DLQI score quality of life $F(2, 401)=4.61$, $p<0.05$. According to this finding, the impact of various skin diseases on quality of life varied significantly. The researcher discovered from the subsequent Tukey post-hoc test that there was statistically significant difference between patients with acne vulgaris (M=8.76, SD=6.46) and patients with psoriasis (M=11.1, SD=7.7, $p=0.029$) and eczema (M=11.0, SD=6.9, $p=0.019$). Between the psoriasis and eczema patient groups, there was no statistically significant difference ($p>0.05$). Using multiple linear regression (MLR), the relationship between the various disease types and work productivity with regard to quality of life was examined. To account for potential confounding variables and investigate the specific relationships between each predictor variable and quality of life, the researcher ran a simple linear regression. According to Table 6, the MLR statistical analysis found that women with the activity impairment had a 0.1 point lower quality of life score ($p<0.001$, 95% CI: 0.03, 0.09 score). According to the findings, women who experience an increase in activity impairment will have a 0.1 point lower quality of life.

***Table 5: The Relationship between Types of Skin Disease and Quality of Life*** **(N = 404)**

| Variable | Quality of life DLQI | | | |
|---|---|---|---|---|
| | Mean (SD) | 95% CI | F-statistic[a] *(df)* | *p*-value |
| **Skin Disease** | | | | |
| Psoriasis | 11.11 (7.70) | 9.65, 12.57 | 4.611 (2,401) | 0.010[b] |
| Acne Vulgaris | 8.76 (6.46) | 7.62, 9.90 | | |
| Eczema | 11.00 (6.89) | 9.96, 12.04 | | |

[a] *One-way ANOVA test*
[b] *Only "psoriasis and acne vulgaris" (p=0.029) and "eczema and acne vulgaris" (p=0.019) pairs are significantly different by post-hoc test Tukey procedures.*

***Table 6: The Relationship of Work Productivity toward Quality of Life*** **(N = 404)**

| WPAI-GH Subscales | Simple Linear Regression | | | | Multiple Linear Regression | | | |
|---|---|---|---|---|---|---|---|---|
| | Adj. B | 95% CI | T stat | *p*-value | Adj. B | 95% CI | T stat | *p*-value |
| Absenteeism | 0.064 | 0.01, 0.12 | 2.281 | 0.023 | 0.075 | -0.03, 0.18 | 1.406 | 0.160 |
| Presenteeism | 0.104 | 0.08, 0.13 | 8.199 | <0.001 | 0.103 | -0.04, 0.24 | 1.449 | 0.148 |
| Work productivity loss | 0.099 | 0.07, 0.12 | 7.827 | <0.001 | -0.083 | -0.24, 0.06 | -1.127 | 0.260 |
| Activity impairment | 0.140 | 0.12, 0.16 | 12.834 | <0.001 | 0.060 | 0.03, 0.09 | 4.131 | <0.001* |
| Absenteeism | 0.064 | 0.01, 0.12 | 2.281 | 0.023 | 0.075 | -0.03, 0.18 | 1.406 | 0.160 |

*Note: Multiple Linear Regression, *p-value is significant at p<0.05.*

## DISCUSSION

### Sociodemographic Data of Respondents

Many of the participants in the study were between the ages of 18 and 30, with a mean age of 32.2. Investigating the racial distribution of the study's sample revealed that most participants were from the Malay ethnic group. According to statistics from the Department of Statistics Malaysia (2022), Bumiputera made up 69.9% of the population in 2022, followed by Chinese (22.8%), Indians (6.6%), and others (0.7%). The majority of the respondents in the study, who came from different religious backgrounds, were Muslims. Most of the respondents had graduated college when it came to education level. The respondents to this study had household income falling into the B40 category, were single, and were employed. Since the majority of respondents were working and single, their mean incomes were in line with the most recent average monthly salaries and wages for female workers reported by the Department of Statistics Malaysia (2021).

### Clinical Data of Respondents

Eczema was the most common skin condition among the study participants, followed by acne vulgaris and

psoriasis. Psoriasis, an autoimmune skin condition, results in itchy and scaly patches on the skin. The severity of psoriasis can vary from minor localized areas to affecting the entire body. This condition is widespread, long-lasting, and currently has no cure (Thakare & Madke, 2024). Analysis of the clinical data revealed trends in the duration of diagnosis, which was less than or equal to 5 years in this study, with a minimum year of diagnosis of zero (1 year) and a maximum year of diagnosis of 39 years, which was again similar to the previous study (Kassab *et al.*, 2019). In terms of the types of treatment received, the clinical data collected for this study showed that more than half of the respondents received topical and pill treatments. Asthma was the most frequently identified comorbid condition by study participants, followed by diabetes mellitus, hypertension, and other illnesses.

**The Quality of Life of Respondents**

Eczema had a very large effect on respondents' DLQI scores, by a very large margin. The DLQI score for eczema, acne, and psoriasis ranged from 11 to 20, which has a significant impact on quality of life. Ghafoor *et al*. (2018) made a similar finding. A Malaysian study further supported this finding, finding that eczema patients' quality of life (QOL) worsened more than the combined effects of the other two skin conditions, with women's QOL more severely impacted than men's (Kassab *et al*., 2019).

The study found that women with various types of skin diseases scored similarly on the subscales measuring work productivity. In comparison to the previous study, the mean score rate for each WPAI-GH subscale was significantly lower (Kalboussi *et al*., 2019). According to a different study (Dreno *et al*., 2019), acne relapse significantly affected absenteeism and productivity loss. The same is true of the study by Arima *et al*. (2018), which found that moderate/severe eczema patients reported significantly higher presenteeism, overall work impairment, and activity impairment than mild eczema patients. This study revealed that women with psoriasis, acne vulgaris, and eczema had a positive outlook on their illnesses in terms of their ability to work productively. People will develop a positive mindset and behaviour to deal with the skin illness, which was referred to as positive psychosocial adaptation, if they believe they can handle it, as mentioned in the study by Zhang *et al*. (2019).

**The Relationship between Types of Skin Disease and Work Productivity among Women with Skin Disease**

The results of this study showed that women with various skin diseases did not significantly differ in their scores on the subscales measuring work productivity. This hypothesis suggests that the women's skin conditions did not have a significant impact on absenteeism, presenteeism, work productivity loss, or activity impairment. However, a study found that people with this skin condition are less productive, take more sick days from work, and have lower learning and study abilities (Nowowiejska, Baran & Flisiak, 2021). According to a Japanese study (Hayashi *et al*., 2013), WPAI-GH has a significant relationship with psoriasis patients. Another Japanese study found that, apart from absenteeism, patients with eczema and chronic urticaria (CU) scored significantly higher on all WPAI-GH subscales than patients with psoriasis (Itakura *et al*., 2018).

According to a study on acne vulgaris, relapses have a significant impact on absenteeism and productivity loss (Dreno *et al*., 2019). Due to the demographics seen in the study population, it is likely that the skin diseases had little impact on the respondents' ability to perform their jobs effectively. In spite of having psoriasis, acne vulgaris, or eczema, a sizable portion of the participants were single and employed, suggesting that they were better able to handle their job-related responsibilities. Moreover, the coping and adaptive mechanisms employed by the respondents to overcome the challenges posed by their skin conditions may contribute to their ability to continue working productively. It is conceivable that people who were proactive in seeking medical attention, following recommended therapies, and effectively managing stress were better able to handle work-related demands while managing their skin diseases.

**The Relationship between the Types of Skin Disease and Work Productivity Toward the Quality of Life among Women with Skin Disease**

Based on the findings of this study, women whose skin conditions resulted in higher activity impairment scores claimed that these conditions had a greater impact on their quality of life. Patients with eczema reported significantly lower health-related quality of life (HRQoL) compared to non-eczema controls in the study by Arima *et al.* (2018), which was similar to this one. This study's findings revealed patients with eczema were

more prevalent than those with psoriasis and acne vulgaris. In contrast to another study, the majority of participants reported that their health had little to no impact on their quality of life in relation to skin diseases (AlOtaibi *et al*., 2021).

The combination of a visible skin condition and its psychological effects frequently results in feelings of shame, reduced self-assurance, and concerns about being stigmatized (Nurye *et al*., 2023). According to a study by Mohamed *et al*. (2021), the physical impact of skin lesions was determined by their size, activity, and any accompanying symptoms, such as itching, which has been connected to subjective distress and emotional distress in conditions like psoriasis and hand eczema. The researcher also identified a strong link between the quality of life of women with skin conditions and activity impairment. The results aligned with previous research demonstrating a significant correlation between activity impairment and QOL score (Jeon *et al*., 2017; Arima *et al*., 2018). However, the results of this study were at odds with a study by Strober *et al*. (2019), which found that patients with psoriasis had significantly worse outcomes and life quality for WPAI-GH domains like absenteeism, presenteeism, and work productivity.

## CONCLUSION

In order to improve the overall quality of life of people with skin diseases, this research project's findings highlight the significance of addressing patients's daily activities. These findings have significant ramifications for researchers and medical professionals, including nurses, who are developing comprehensive treatment plans that address the multifaceted effects of skin diseases on people's lives. The dermatologist can implement educational interventions to enhance participants' understanding of their skin condition, management strategies, and lifestyle modifications to improve quality of life. While nurses in the dermatology department can provide counseling to address emotional and psychological aspects related to their skin disease, overall, this research project advances knowledge of the complex interactions between skin conditions, work productivity, and overall quality of life. Further research in this field suggests that focusing specific interventions and support services on these factors can improve the quality of life and wellbeing of women with skin conditions.

### Conflict of Interest

The authors declare that they have no competing interests.

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