

Awareness of Undergraduate Nursing Students regarding Psoriasis Disease at the British University in Egypt

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Abstract

Background: Psoriasis represents one of the most common autoimmune skin diseases worldwide, causes high burden and impacts on patients' quality of life. **Aim of the study:** To assess awareness of undergraduate nursing students regarding psoriasis disease at the British University in Egypt. **Research design:** A descriptive design was utilized in this study. **Setting:** The study was conducted at faculty of nursing- the British University in Egypt. **Sample:** A convenience sample of 520 nursing students from different study years. **Tools:** A structured questionnaire includes 3 main parts: Demographic characteristics, nursing students' knowledge, and nursing students' attitude toward psoriasis disease. **Results:** 6% of the studied sample had good total knowledge and 16.3% had fair total knowledge, while 77.7 % had poor total knowledge regarding psoriasis disease. Also, 29.4% had positive attitude and 70.6% had negative attitude toward psoriasis disease. **Conclusion:** More than three-quarters of the studied nursing students had poor total knowledge regarding psoriasis disease, while higher than two-thirds of them had a negative attitude toward psoriasis. Additionally, there was a highly statistically significant relation between total knowledge and total attitude among the studied nursing students. **Recommendations:** Educational program and sessions should be conducted by academics for nursing students in order to improve their knowledge and attitude toward psoriasis.

Keywords: Awareness, psoriasis disease, undergraduate nursing students

Introduction

Psoriasis is a chronic autoimmune inflammatory disease and can occur at any age. Psoriasis disease clinically presenting with systemic and cutaneous manifestations likely silver erythematous plaques to be the most common sign. Psoriasis is linked to social stigmatization, pain, discomfort, physical disability, and psychological stress. The global prevalence of psoriasis is estimated to be 2-3%, affecting over 125 million people worldwide. This prevalence increases steadily throughout life. The etiology of psoriasis, or the cause of the condition, is still unknown. Nevertheless, there are several factors that contribute to the development of psoriasis such as previous infections, genetics, certain medications, emotional and physical stress (Zhang *et al.*, 2024).

Psoriasis disease has five main types: Plaque, guttate, inverse, pustular, and erythrodermic. Plaque psoriasis, which is known as psoriasis vulgaris, makes up around 90% of affected patients. It typically presents as red patches with white scales on top. The most common affected body areas are the back of the forearms, shins, navel area, and scalp. Guttate psoriasis has drop-shaped lesions, while pustular psoriasis presents as small, non-infectious, pus-filled blisters. Inverse psoriasis forms red patches in skin folds. Erythrodermic psoriasis occurs when the rash becomes very widespread and can develop from any of the other types. Fingernails and toenails are affected in most people with psoriasis at some point in time. This may include pits in the nails or changes in nail colour (Yan *et al.*, 2021).



The severity of psoriasis symptoms can vary among patients. Common physical symptoms include red, silver scaly patches, dryness, itching, burning sensations, and painful skin lesions. Additionally, affected patients may experience thickened, pitted, or brittle nails, as well as swollen and stiff joints. In severe cases, the skin may become intensely inflamed with or without pustules. Psoriasis can also have adverse psychological effects, such as negative body image, stress, and embarrassment. Visible psoriatic lesions on exposed body parts can lead to fear, disgust, aversion, or intolerance in others, potentially causing social exclusion, discrimination, and stigmatization (*Jankowiak et al., 2023*).

Nowadays, the standard approach to identification and diagnosis of psoriasis disease depends on dermatologist decisions that is usually done by physical examination, following a discussion about the family and medical history of the patient. While treatment of psoriasis disease is still based on managing the symptoms; thus, it requires lifelong treatment. Treatment methods are determined based on disease severity, efficacy, relevant comorbidities, treatment cost, possible drug side effects, and evaluation of patients' response (*Yaseliani et al., 2024*).

As evident, patients are often stigmatized because psoriatic lesions can be seen in visible body areas such as the face, scalp, and hands. Stigmatization and social isolation faced by psoriasis patients adversely affect their lives, increase their tendency toward depression and anxiety, and lead to a worse health-related quality of life regardless the severity of psoriasis disease. Furthermore, psoriasis disease causes significant burdens on patients, including social and economic challenges, which negatively affect their quality of life (*Jankowiak et al., 2023*). Moreover, psoriasis is a systematic disease; it is associated with various comorbidities, such as metabolic syndromes, cardiovascular disease, obesity, and psoriatic arthritis that impact on patients' overall health and well-being (*Branisteanu et al., 2021*).

Undergraduate nursing students are at an essential stage of their education, where they are learning the necessary knowledge and skills to become competent healthcare professionals. In this context, it is crucial that nursing students receive accurate and comprehensive education during their academic studies about psoriasis, its impact on quality of life, and effective management strategies. This knowledge equips them with the skills and awareness needed to assist psoriatic patients in managing their condition effectively and enhancing their overall quality of life (*Da Silveira et al., 2023*).

Community Health Nurses (CHNs) are in the frontline healthcare providers and responsible to educate and advise patients with psoriasis in all aspects of care. They have a fundamental role in educating patients to avoid psychological distortion and how to live within the community and cope with this chronic illness to improve their health condition and reduce stigmatization from this disease. Moreover, CHNs have an effective role through collaboration between the psoriatic patients and other health team professionals in illness prevention and management through health education to raise their knowledge about the disease and different treatment methods to reach more compliance for disease management and care satisfaction (*Moselhy & Abdallah, 2022*).

Significance of the study

Psoriasis is a common chronic autoimmune inflammatory disease with an estimated prevalence of 2-3% in different races, making psoriasis a serious global problem with approximately 700 million people affected worldwide. Specifically, the prevalence of psoriasis disease ranges between 0.19% and 3% of the Egyptian people. This means that more than 3,000,000 individuals suffer from psoriasis disease in Egypt (*Beera & Nori, 2023*).

Previous studies have concluded that there is inadequate knowledge, along with a negative attitude towards psoriasis disease. Public misconceptions about psoriasis, for example, the myth that it is a contagious disease, results in exclusion of patients from the everyday life of their communities and fosters low self-esteem, depression and even suicide (*Nayyar et al., 2022*).

Nursing students will become future nurses. As noted, nursing staff among healthcare providers have a fundamental role in raising people's awareness toward any disease. Obviously, the need for disseminating accurate information about psoriasis as a serious disease must be one among priorities in nursing education. However, there are no studies that approached psoriasis disease from nursing students' perspective (*World Health Organization, 2023*).



Assessing undergraduate nursing students' awareness regarding psoriasis will help in recognizing students' scientific literacy. This is considered a significant benefit for preparing nursing students for professional practice with a basis in science and an understanding of patient care context. Therefore, there is a highly need to conduct this study.

Aim of the study

The aim of this study was to assess awareness of undergraduate nursing students regarding psoriasis disease at the British University in Egypt through the following:

1. Assessing undergraduate nursing students' knowledge regarding psoriasis disease.
2. Identifying undergraduate nursing students' attitude toward psoriasis disease.

Research Questions

Q 1 – What is undergraduate nursing students' knowledge regarding psoriasis disease?

Q 2_ What is undergraduate nursing students' attitude toward psoriasis disease?

Q 3_ Is there a correlation between knowledge and attitude of undergraduate nursing students regarding psoriasis disease?

Q 4_ Is there a relation between knowledge, attitude, and demographic characteristics of undergraduate nursing students regarding psoriasis disease?

Subjects and Method

Research design: A descriptive research design was applied to achieve the aim of the current study.

Research setting: The study was conducted at faculty of nursing-the British university in Egypt.

Subjects

The subjects of the current study were nursing students from at faculty of nursing-the British university in Egypt

Sampling technique

A convenience sample of 520 nursing students from different study years. The sample size is divided as follows: 220 from the first year, 100 from the second year, 105 from the third year, and 95 from the fourth year.

Tool for data collection

A structured questionnaire was used in this study, it includes three parts.

Part I: Demographic characteristics for nursing students that includes 9 items such as age, gender, academic-year, father's educational level, mother's educational level, father's occupation, mother's occupation, residence, and students' source of information about psoriasis disease.

Part II: Assessment of nursing students' knowledge regarding psoriasis disease which consists of 12 multiple choice questions, including the meaning of psoriasis disease, the exact etiology of psoriasis disease, nature of psoriasis disease transmission, common symptom of psoriasis, affected body area, primary method of diagnosis, common treatment method of psoriasis, the main goal for psoriasis treatment, vulnerable group, common trigger, healthcare professional can diagnose and treat psoriasis and the common complication of psoriasis.

Scoring system for knowledge

A correct answer was scored **one grade** and incorrect answer or don't know answer was scored **zero**. The total scores of this part were ranged from **0 - 12** grades. These scores were summed and converted into a percent score. It was classified into 3 categories as follows:



- Good knowledge if score $\geq 75\%$ (≥ 9 grades).
- Fair knowledge if score $50\% < 75\%$ ($6 < 9$ grades).
- Poor knowledge if score $< 50\%$ (< 6 grades).

Part III: Assessment of nursing students' attitude toward psoriasis disease which consists of 20 items included: I will feel uncomfortable when I see a patient with psoriasis, I should avoid shaking hands with a psoriatic patient, I might eat food prepared by a psoriatic patient, I do not like to be served by a psoriatic patient, I am willing to share food with a psoriatic patient, I would marry a psoriatic patient, I would continue marital live with psoriasis patient, I would play with a psoriatic patient, I would sit beside a psoriatic patient, I prefer to maintain social distance from psoriasis patient, I will share a workplace or residence with a psoriatic patient, I would want to isolate a psoriatic patient, As an employer, I would hire a psoriatic patient, I will feel sympathy for patients with psoriasis, ...etc.

Scoring system for attitude

The attitude part consisted of 20 items a total score ranged from 0- 40 grades. This instrument used a 3-point Likert scale from 2 for agree, 1 for neutral and zero for disagree. Notably, items of 1,2,4,10,12,14 are negative questions/ reverse scored items, zero for agree, 1 for neutral, and 2 for disagree . The grades for each item were summed up and then converted into a percent score.

- Positive attitude $\geq 60\%$ ($24 \geq 40$ grades).
- Negative attitude $< 60\%$ ($0 < 24$ grades).

Validity

The validity of the tool was tested by five experts from faculty nursing- Helwan University who reviewed the clarity, suitability, completeness, and applicability. No modifications were done based on experts' feedback.

Reliability

Cronbach's Alpha test was used to determine the internal reliability of the tool. It was 0.881 for the knowledge part and .0831 for attitude part.

Ethical considerations

An official permission to conduct the proposed study was obtained from the Scientific Research Ethics Committee, Faculty of Nursing, Helwan University. Participation in the study was voluntary and undergraduate nursing students were provided with complete full information about the study and their role before signing the informed consent. The ethical considerations included explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information were not accessed by any other party without taking permission of the participants. Ethics, values, culture, and beliefs were respected during the study.

Pilot study

The pilot study was carried out on 10% (52 nursing student) of the sample to examine the applicability, feasibility, clarity of questions and the time needed to complete the study tool. Based on the pilot results, no modifications and corrections were done, therefore nursing students who participated in the pilot study were included in the study sample.

Field work

1- Once permission was granted to proceed with the current study, data collection was initiated. A trustful relationship was established, and the investigator introduced himself to the participants, providing an explanation of the study and its aim.



- 2- Prior to data collection, informed consent was obtained from each participant.
- 3- The investigator formulated a structured questionnaire consisted of 3 main parts as previously mentioned to collect the required data.
- 4- The data collection took a period of 3 months, starting from the beginning of October 2023 till the end of December 2023. The tool took approximately 15-20 minutes to be fully completed.
- 5- The Microsoft Office link to the questionnaire was sent to all undergraduate nursing students through their academic email and WhatsApp groups. Participants were asked to complete the tool at their free time during the designated data collection period.
- 6- Nearly 9 students from various academic year levels filled in the tool daily till the required sample collected

Statistical Analysis

Data collected from the studied sample was revised, coded and entered using Personal Computer (PC). Computerized data entry and statistical analysis were fulfilled using Microsoft Excel Program and Statistical Package for the Social Science (SPSS) version 24. Data were presented using descriptive statistic in the form of frequencies, percentages for categorical variables, while continuous variables were expressed as (mean \pm SD). Qualitative variables were compared using chi square test (**X²**). In addition, Pearson correlation coefficient (**r**) was used to identify the correlation between the study variables.

Results

Table (1): Shows that 46.2% of studied nursing students were within the age group 18->20 with the mean age \pm SD = **20.48 \pm 2.29**. Also, 60.4% were male. In addition, 54.5% of nursing students father's educational level were university or more, while 49.3% of their mothers' educational level were university or more. Furthermore, 70.6 % among studied sample fathers were employed, but 64% of their mothers were unemployed.

Fig. (1): Illustrates that 32.7% of the studied undergraduate nursing students their source of information was from social media.

Table (2): Displays that 39.4 % of studied nursing students had incorrect knowledge about the meaning of psoriasis disease. Also, 51.5% of them had incorrect knowledge about the etiology of this disease. However, 44.4 % of the studied sample had correct knowledge about signs and symptoms of psoriasis disease. In addition, 47.7%, 45.2%, 48.6%, and 40.4% of studied sample had incorrect knowledge about affected body area, primary method of diagnosis, treatment goal, and complications of psoriasis disease respectively.

Fig. (2): Clarifies that 6% among the studied sample had good total knowledge and 16.3% had fair total knowledge, while 77.7 % had poor total knowledge regarding psoriasis disease.

Table (3): Illustrates that 51.3% of studied nursing students agreed that they feel uncomfortable when seeing a patient with psoriasis and avoid shaking hands with a psoriatic patient. 49.2 % of nursing students disagreed to eat food cooked by psoriatic patient. Moreover, 60.8% among them disagreed to marry psoriatic patients. While 64.4% and 76.6% of nursing students agreed to feel sympathy for patients with psoriasis and believe that psoriatic patients should be treated with respect respectively. Also, 23.4% were neutral to feel comfortable when providing care to psoriatic patients. Notably, 79.8% agreed that psoriasis patients should receive appropriate care and support without judgment.

Fig. (3): Clarifies that 29.4% of the studied sample had positive attitude and 70.6% had negative attitude toward psoriasis disease.

Table (4): Reveals that there is a highly statistically significant positive correlation between total knowledge and total attitude among the studied nursing students (p-value <0.001).

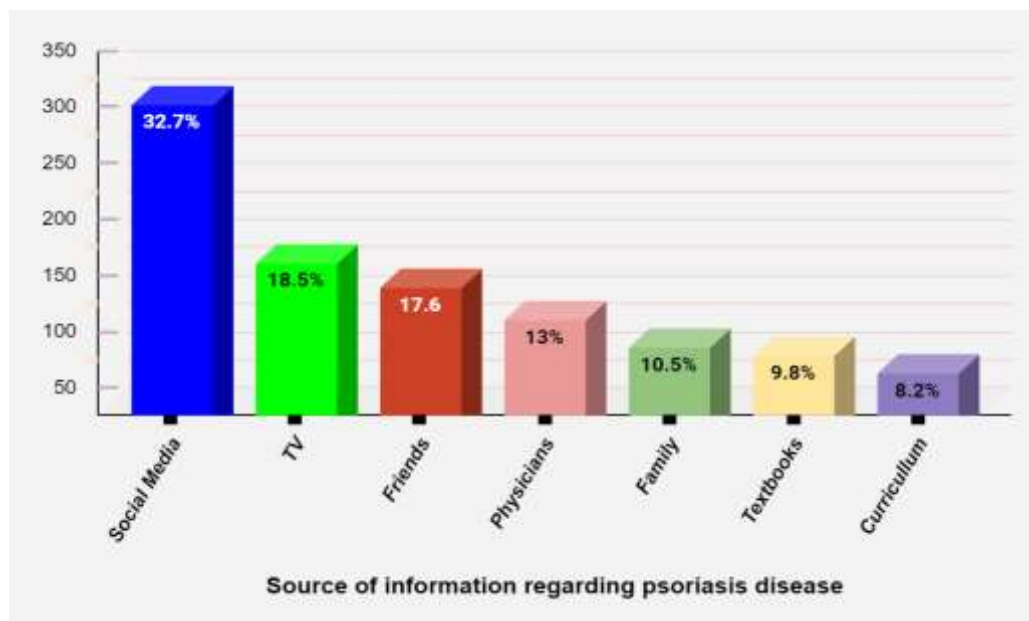


Table (5): Illustrates that there were highly statistically significant relation between total knowledge, total attitude of nursing students and their demographic characteristics such as age and academic year. Also, there were highly statistically significant relation between nursing students' total attitude and father's occupation and residence at (p-value <0.001).

Figures and Tables

Table (1): Frequency Distribution of Undergraduate Nursing Students according to their Demographic Characteristics (n=520).

Demographic characteristics	No	%
Student age (in years)		
18> - 20	240	46.2
20> - 22	201	38.6
22> -24	72	13.8
≥24	7	1.4
Mean + SD = 20.48 + 2.29		
Gender		
Male	314	60.4
Female	206	39.6
Academic year		
First	220	42.3
Second	100	19.2
Third	105	20.2
Fourth	95	18.3
Father's educational level		
No read and write.	9	1.7
Read and write.	34	6.5
Basic education.	41	7.8
Secondary education.	153	29.5
University or more.	283	54.5
Mather's educational level		
No read and write.	11	2.1
Read and write.	40	7.7
Basic education.	63	12.1
Secondary education.	150	28.8
University or more.	256	49.3
Father's occupation		
Employed.	367	70.6
Unemployed.	153	29.4
Mather's occupation		
Employed.	187	36
Unemployed.	333	64
Residence		
Urban.	224	43.1
Rural.	296	56.9



N.B. Some of students had more than one source of information

Figure (1): percentage distribution of nursing students' source of information regarding psoriasis disease (n=520)

Table (2): Frequency Distribution of Nursing Students' Knowledge regarding Psoriasis Disease (n=520).

Knowledge items	Correct		Incorrect		Don't know	
	No	%	No	%	No	%
Meaning of psoriasis disease	140	26.9	205	39.4	175	33.7
Etiology of psoriasis disease	82	15.8	268	51.5	170	32.7
Transmission of psoriasis disease	155	29.8	189	36.4	176	33.8
Signs and symptoms	231	44.4	115	22.1	174	33.5
Affected body area	103	19.8	248	47.7	169	32.5
Primary method of diagnosis	112	21.5	235	45.2	173	33.3
Common treatment	169	32.5	164	31.5	187	36
Treatment goal	95	18.3	253	48.6	172	33.1
Vulnerable group	144	27.7	211	40.6	165	31.7
Common trigger	85	16.3	210	40.4	225	43.3
Responsible healthcare professional	235	45.2	118	22.7	167	32.1
Common complication of psoriasis disease	102	19.6	210	40.4	208	40
Total average (n=520)	137.7	26.5%	202.2	38.8%	180.1	34.7%

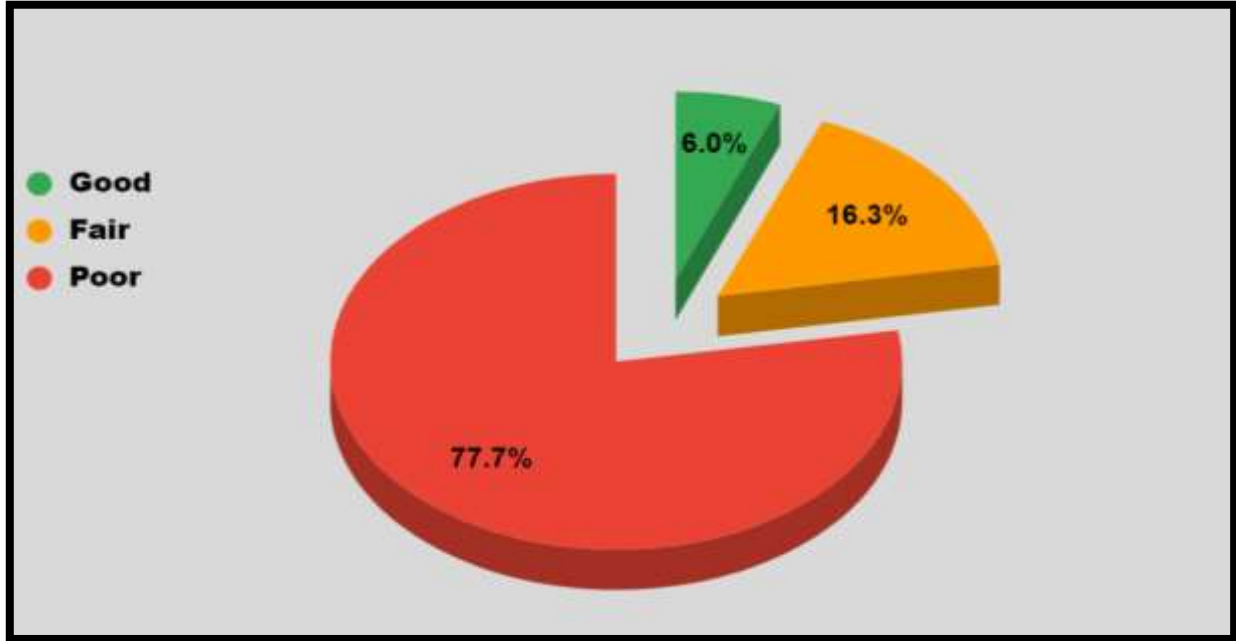


Figure (2): percentages distribution of nursing students' total knowledge regarding psoriasis disease

Table (3): Frequency Distribution of Nursing Students' Attitude toward Psoriasis Disease (n=520)

Attitude items	Agree		Neutral		Disagree	
	No	%	No	%	No	%
Feel uncomfortable when I see a patient with psoriasis.	267	51.3	109	21	144	27.7
Avoid shaking hands with a psoriatic patient.	267	51.3	101	19.4	152	29.3
Eat food cooked by a psoriatic patient.	149	28.7	115	22.1	256	49.2
Do not like to be served by a psoriatic patient.	204	39.2	108	20.8	208	40
Share food with a psoriatic patient.	218	41.9	108	20.8	194	37.3
Marry a psoriatic patient.	81	15.5	123	23.7	316	60.8
Continue marital live with psoriasis patient.	126	24.2	145	27.9	249	47.9
Play with a psoriatic patient.	198	38.1	129	24.8	193	37.1
Sit beside a psoriatic patient.	213	41	117	22.5	190	36.5
Maintain social distance from psoriasis patients.	218	41.9	128	24.6	174	33.5
Share a workplace or residence with a psoriatic patient.	140	26.9	114	21.9	266	51.2
Want to isolate a psoriatic patient.	150	28.8	121	23.3	249	47.9
As an employer, I would hire a psoriatic patient.	136	26.2	117	22.5	267	51.3
Feel sympathy for patients with psoriasis.	335	64.4	106	20.4	79	15.2
Accept a friend who suffers from psoriasis disease.	221	42.5	115	22.1	184	35.4
Patients with psoriasis should be treated with empathy and respect.	398	76.6	89	17.1	33	6.3
Psoriasis patients should be engaged in the community.	253	48.6	109	21	158	30.4
Feel comfortable when providing care to patients with psoriasis.	264	50.8	122	23.4	134	25.8
Advocate for patients with psoriasis.	378	72.7	96	18.5	46	8.8
Psoriasis patients should receive appropriate care and support without judgement.	415	79.8	74	14.2	31	6

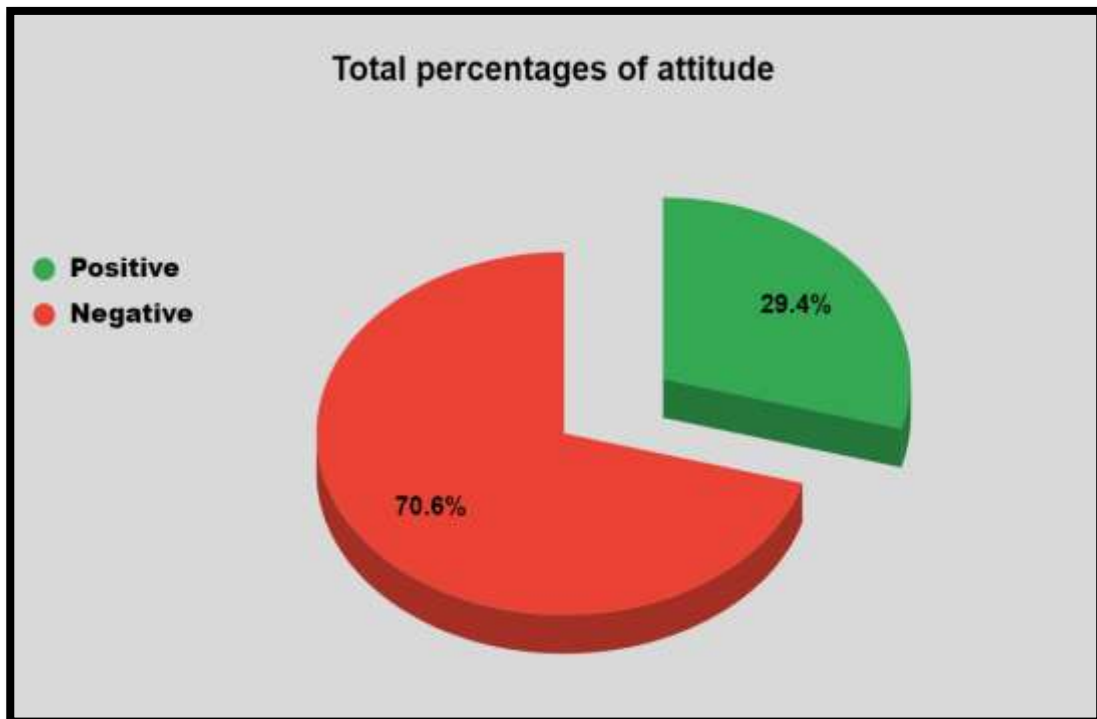


Figure (3): percentage distribution of total attitude toward psoriasis disease among nursing students (n=520)

Table (4): Correlation between Total Knowledge and Attitude of Undergraduate Nursing Students regarding Psoriasis Disease (n=520)

Variables	Total Attitude	
	R	p-value
Total knowledge	0.146	<0.001**

**Highly statistically significant at $p < 0.001$

r-Pearson Correlation Coefficient

Table (5): Relation between Total Knowledge, Total Attitude, and Demographic characteristics of Undergraduate Nursing Students regarding Psoriasis Disease (n=520)

Demographic characteristics	Total knowledge		Total attitude	
	χ^2	p-value	χ^2	p-value
Age	23.988	<0.001**	18.715	<0.001**
Gender	31.976	<0.001**	5.167	0.023*
Academic year	22.203	<0.001**	19.139	<0.001**
Father's educational level	9.401	0.310	2.565	0.633
Mather's educational level	11.372	0.181	6.052	0.195
Father's occupation	0.058	0.972	14.610	<0.001**
Mather's occupation	0.701	0.704	1.104	0.293
Residence	7.463	0.024*	29.874	<0.001**

(**) Highly statistically significant at p <0.001
<0.05

(*) statistically significant p

Discussion

Psoriasis is a chronic non-infectious skin condition that is characterized by inflammation, erythema, and scaly patches on the skin, but it may also affect other parts of the body, including joints and nails. Psoriasis disease has different types, including plaque psoriasis, inverse psoriasis, pustular psoriasis, and guttate psoriasis. The prevalence of psoriasis in Egypt has been estimated to be 3% of general population. Although the exact cause of psoriasis remains unclear, there are multifactorial aspects to its etiology and pathogenesis, including immunologic, genetic, and environmental factors (Ali, 2019) and (Yan et al., 2021).

Psoriasis disease affects patients' quality of life in different ways, including through effects on body image, relationships, employment, social life, self-esteem, and leisure activities. Furthermore, patients with psoriasis may face stigma, leading to psychological effects such as an increased risk of depression that can be exacerbated by a lack of social support. This lack of support might be at least linked to poor awareness regarding psoriasis within the community (Nowowiejska et al., 2021). Therefore, the current study aimed to assess awareness of undergraduate nursing students regarding psoriasis disease.

Regarding age of nursing students, the results of the current study showed that nearly half of nursing students' age ranged from 18>20 years with mean age 20.48 ± 2.29 (Table 1). This finding was in line with Alzolibani, (2009) who conducted a study entitled " Knowledge and attitude towards psoriasis among non-medical students at Qassim University, Saudi Arabia", (n=1000) and reported that the mean age of the study sample was 21.01 ± 2.38 years.



Concerning gender of nursing students, the results of the present study revealed that more than three fifths of nursing students were males. This finding was agreed with a study performed in India by **Nayyar et al. (2022)** under the title "Knowledge and Attitude towards Vitiligo and Psoriasis among Undergraduate Medical Students: A Cross-sectional Observational Study"(n=351) in which concluded that 51.3% among participants were males and 48.7% were females.

As regards to parents' education, the current study demonstrated that more than half of father education were university education or more and around half of mother education were university education or more. These findings agreed by a study conducted in Japan by **Lei et al. (2023)** titled "Knowledge and attitude of non-medical students regarding psoriasis" concluded that 56.4% and 47.5% of study participants their fathers' and mothers' educational level was higher education respectively.

In addition, this study demonstrated that more than two-thirds of fathers were employed, while around two thirds of mothers were unemployed. The investigator think that the large percentage of employed fathers compared to mothers may be influenced by educational level and limitation of jobs for women in countryside because more than half of the studied nursing students live in rural areas.

Concerning source of information about psoriasis, this study revealed that nearly one third of the studied nursing students their source of information was social media platforms. Moreover, around one fifth among nursing students were their source of information from TV and friends respectively. However, the minority of nursing students their source of information regarding psoriasis disease were from curriculum, textbooks, family, and physicians respectively (figure 1). These findings were supported by **Sommer et al. (2018)**, who conducted a study in Germany entitled "What is psoriasis? – Perception and assessment of psoriasis among the German population" (n=2001) and found that 32% among study participants their source of information was from media. Moreover, this finding was approved by **Almutairi et al. (2020)** who reported that 33.4% among participants' source of information was from media in a study entitled "Perception and assessment of psoriasis in the general population of Riyadh, Saudi Arabia". n=385.

According to research question (No. 1) What is undergraduate nursing students' knowledge regarding psoriasis disease?

As regards to frequency distribution of nursing students' knowledge regarding psoriasis disease, the present study showed that nearly two-fifths of nursing students had incorrect knowledge about the meaning of psoriasis disease and more than half of them displayed incorrect knowledge regarding its etiology (Table 2). However, these findings disagreed with a qualitative study conducted in Brazil entitled "Knowledge of nursing students about psoriasis and considerations about nursing care" by **Da Silveira et al. (2023)** (n=22) who concluded that 50 % of nursing students had correct knowledge about the meaning of psoriasis and its etiology.

Moreover, the current study found that approximately one-third of the sample exhibited incorrect knowledge regarding psoriasis disease transmission as they demonstrated that psoriasis is contagious. This finding was in the same line with a study conducted by **Özer & Yıldırım (2020) in Turkey** under the title of "Social awareness about psoriasis: Misconceptions, negative prejudices and discriminatory behavior" (n=433) and found that 32.9% among respondents in the study thought that psoriasis is contagious. Conversely, this result disagreed with **Nayyar et al (2022)** who stated that 18% among study participants reported that psoriasis is contagious.

The recent study clarified that more than two fifths of the studied nursing students demonstrated correct knowledge about signs and symptoms, while they had incorrect knowledge about the affected body area. This finding supported by a study conducted in Brazil by **Da Silveira et al. (2023)** who declared that 54% of studied nursing students had correct knowledge about signs and symptoms of psoriasis and incomplete answer about the affected body area.

Furthermore, the current study revealed that nearly half of the participants had incorrect knowledge about the primary method of diagnosis and treatment goals for psoriasis. These findings were supported by **Zhang et al. (2024)** who stated that 49% of participants showed incorrectness as regards to method of diagnosis and treatment of psoriasis. Additionally, around two-fifths of nursing students demonstrated incorrect knowledge about complications associated



with psoriasis disease. This finding disagreed with **Kumar et al. (2021)** who conducted a study titled " Psoriasis: Knowledge, attitudes and perceptions among primary care providers" (n=147) and declared that 83% of respondents were totally aware of psoriasis related complications.

As regards to the total knowledge of studied nursing students' regarding psoriasis, the findings of the present study showed that minority of the studied nursing students had good total knowledge and approximately more than one-tenth had fair total knowledge, while more than three quarters had poor total knowledge(figure 2). These results were in contrast with the findings of **Nayyar et al. (2022)** who found that 71.5% of the study participants had good total knowledge about psoriasis.

Based on the above findings, the investigator assumed that the studied nursing students' total knowledge might be influenced by their source of information about psoriasis that was primarily from social media platforms, which may contain inaccurate information. This limited access to accurate and updated information negatively impacted their knowledge regarding psoriasis disease. Additionally, lacks in curriculum coverage of psoriasis diseases and related clinical experiences might be affected their knowledge and attitude.

According to the research question (No. 2) What is undergraduate nursing students' attitude toward psoriasis disease?

The results of the current study showed that more than half of the studied nursing students agreed that they would feel uncomfortable when seeing a patient with psoriasis and they would avoid shaking hands with psoriatic patients (table 3). This finding was in agreement with a previous study entitled " Personal experience and knowledge about psoriasis reduce misconceptions and discriminatory behavior toward people living with psoriasis in Malaysia" (n=164) in which conducted by **Yong et al. (2020)** who reported that 57% of participants disagreed to shake hands with person who has psoriasis.

However, various researches showed contrasting findings with the recent study results as regards to shaking hands with psoriatic patients. For example, a study done by **Halioua et al. (2015)** titled "Extent of misconceptions, negative prejudices and discriminatory behaviour to psoriasis patients in France "(n=1005) concluded that 71.2% of the participants would shake hands with a psoriasis patient. In addition, the current study results disagreed with **Pearl et al. (2019)** who conducted a study in Pennsylvania and entitled "Stigmatizing attitudes toward persons with psoriasis among laypersons and medical students. " (n= 198) demonstrated that 66.6% of the study sample would shake hands with person who has psoriasis.

The current study demonstrated that around half of the studied nursing students disagreed to eat food cooked by a psoriatic patient. This finding was in the same direction with a study carried out in Malaysia (n=164) by **Yong et al. (2020)** who declared that 64.4% of respondents disagreed to eat a meal cooked by someone who suffer from psoriasis disease. In contrast, this finding was in disagreement with a research conducted by **Abu Alqam et al. (2023)** entitled "The extent of misconceptions, negative prejudices, and discriminatory behaviors toward psoriasis patients: A cross-sectional survey study among the population of Jeddah, Saudi Arabia" (n= 803) revealed that 58% of respondents expressed willingness to eat a meal prepared by individuals with psoriasis.

Remarkably, the findings of the current study indicated that three-fifths of nursing students expressed disagreement with the idea of marrying individuals affected by psoriasis. Similarly, **Yong et al. (2020)** reported that 82.3% of their study participants expressed unwillingness to engage in intimate relationships with someone who has psoriasis. However, the findings of the current study contradicted those of a study conducted by **Almutairi et al. (2020)** titled "Perception and assessment of psoriasis in the general population of Riyadh, Saudi Arabia" which included 385 participants. This study reported that 68% of respondents expressed willingness to engage in personal relationships with individuals affected by psoriasis.

Notably, the present study result showed that around two-thirds of nursing students agreed to feel sympathy for patients with psoriasis. This finding was aligned with the research conducted by **Assiri et al. (2023)** entitled "Perception and assessment of psoriasis among the general population in the Jazan region, Saudi Arabia" (n= 410) which similarly



reported that more than 70% of the respondents' expressed sympathy towards people suffering from psoriasis. Moreover, a study by **Nayyar et al. (2022)** found that 92% of medical students expressed sympathy towards patients having psoriasis.

Importantly, the findings of the current study were revealed that more than three-quarters of the studied nursing students agreed that psoriasis patients should receive appropriate care and support without judgment. These findings were consistent with a study conducted by **Assiri et al. (2023)**, who found that 79.8% among study sample felt that people with psoriasis should receive better care.

The results of the recent study were clarified that more than half of the studied nursing students disagreed to share a workplace or residence with psoriatic patients. In contrast, various previous studies were showed the opposite results as in a study conducted by **Sommer et al. (2018)** mentioned that 10 % among their study participants would not want to live in the same household. Another study by **Almutairi et al. (2020)** declared that 91.7% of respondents were ready to live in the same household with psoriatic patients. In addition, **Assiri et al. (2023)** reported that 85.1% among their study participants agreed to live with psoriatic patients in the same household.

Overall, the current study concluded that over one quarter of nursing students demonstrated a positive total attitude toward psoriasis disease, while less than three quarters of them exhibited a negative total attitude. Conversely, this finding contradicted a study conducted by **Murshidi et al. (2023)** and entitled "Knowledge and attitude towards psoriasis among Jordanian population: A Cross-sectional study" (n=1306), which revealed that 61.49% of the studied sample had a positive total score of attitude toward psoriasis.

From the investigator's perspective, most undergraduate nursing students showed a negative attitude toward psoriasis due to several factors. Primarily, educational gaps in nursing curricula related to dermatology including psoriasis. Therefore, nursing students may acquire inaccurate knowledge about psoriasis, which in turn forms their negative attitude. For example, insufficient knowledge or exposure during clinical training may lead to misconceptions about psoriasis. Notably, most study participants had inaccurate information that psoriasis is contagious. This misconception may cause fear and negative attitude toward patients with psoriasis.

According to the research question (No. 3) Is there a correlation between knowledge and attitude of undergraduate nursing students regarding psoriasis disease?

The present study indicated that there was a highly statistically significant relation between total knowledge and total attitude among the studied nursing students ($p < 0.001$) (table 4). Similarly, the study conducted in China by **Tian et al. (2024)** titled " Knowledge, attitude, and practice of psoriasis patients toward their diseases: A web-based, cross-sectional study" (n= 526) showed a positive correlation between knowledge and attitude toward psoriasis ($r=0.186$, $p < 0.001$) in which participants with a good knowledge showed positive attitude, while a higher percentage of participants with a negative attitude had poor knowledge about psoriasis.

According to the research question (No. 4) Is there a relation between knowledge, attitude, and demographic characteristics of undergraduate nursing students regarding psoriasis disease?

The results of the current study illustrated a highly statistically significant relation between the total knowledge and total attitude of nursing students, as well as their demographic characteristics such as age and academic year (table 5). These findings were consistent with those of **Nayyar et al. (2022)**, who found that participants in higher academic year levels exhibited greater knowledge and a more positive attitude toward psoriasis compared to others.

From the investigator's point of view, father's occupation may influence the socioeconomic status of the family, which may affect the student's exposure to diverse perspectives and experiences related to psoriasis. Additionally, residence may influence attitude, as students from urban have higher access to healthcare information and resources that possibility affect their attitude toward psoriasis disease.



6. Conclusion

In the light of the results of the current study and answered research questions, it can be concluded that: The results of the current study revealed that more than three-quarters of the studied nursing students had poor total knowledge regarding psoriasis disease, with higher than two-thirds of them had a negative attitude toward psoriasis. In addition, there was a highly statistically significant relation between total knowledge and total attitude among the studied nursing students. Moreover, there were a highly statistically significant relation between total knowledge, total attitude of nursing students and their demographic characteristics such as age and academic year. Also, there were a highly statistically significant relation between nursing students' total attitude and father's occupation.

7. Recommendations

In the light of the current study findings, the following recommendations are suggested.

- Provide ongoing education to nursing students through workshops, conferences, and online courses focused on psoriasis disease.
- Educational programs and sessions should be conducted by academics for nursing students in order to improve their knowledge and attitude toward psoriasis.
- Increase students' awareness regarding psoriasis disease using various methods including social media platforms to reach large number.

For future research

- Design and implement applicable comprehensive health education program for undergraduate nursing students regarding psoriasis disease in different settings.

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