Skin diseases and the care of patients with skin diseases as perceived by nurses

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ABSTRACT

Introduction Dermatological patients are a distinctive group of patients who experience social stigmatisation, exclusion, and a significant decrease in the quality of life. In the healthcare delivery setting, medical staff (especially nurses) are expected to ensure patients with skin diseases' comfort and bio-psycho-social well-being. Undoubtedly, the realisation of this goal is facilitated by the staff's dermatological knowledge of the causes of the disease and its impact on the patient and their quality of life. The study was based on the opinions of nurses not working in dermatology departments, focusing on their perception of patients with skin problems and selected issues related to their quality of life.

Materials and methods: The study was carried out using an original questionnaire distributed among a total of 197 nurses working in departments other than dermatology. The questionnaire consisted of 7 questions in the general part and 25 questions in the main part.

Results: The nurses surveyed reported that the most common skin disorders encountered in their professional practice included psoriasis (70.5%), mycosis (47.7%), acne (33.0%), and urticaria (38.1%). The skin lesions were located on the upper limbs (54.8%), lower limbs (46.02%), hands (41.1%), face (37.6%), feet (25.4%), head (25.4%), chest (20.8%), back (19.3%), or the whole body (18.8%). In the view of the nurses, skin disease caused anxiety (26.4%), fatigue (14.2%), frustration (13.2%), irritation (11.2%), resentment (10.7%), and anger (10.1%) in affected patients. According to 61.4% of the nurses surveyed, patients with skin diseases encounter negative attitudes from people around them.

Conclusions: Nearly three-quarters of the nurses surveyed believed that the quality of life of dermatological patients was impaired due to their disease. According to the respondents, the greatest difficulty would be associated with performing their caring, therapeutic, and rehabilitation roles in the treatment of dermatological patients.

Keywords: Nurse, patient, skin diseases, quality of life, knowledge

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INTRODUCTION

Modern medicine is based on a holistic approach to therapy. The patient is approached not only as an individual harbouring or being a carrier of a disease that is of interest to members of the medical profession, but as an object of healthcare comprising multiple intertwined areas, some of which are significantly affected by the psyche and spiritual and social functioning. The holistic approach to humans, and health and illness, applies to all medical professions that are focused on providing care to patients. Nursing has a special place among these professions, seeking to provide care to people in health and various disease states and meeting – or assisting in the meeting – their bio-psycho-social needs. To fulfill their professional role in the holistic process, nurses must possess extensive knowledge that far exceeds the scope of nursing and medicine, all the more so because, in the holistic approach, patients are viewed in the context of their multifaceted uniqueness. Consequently, they require individualised therapeutic techniques and care methods, family involvement in the therapeutic and nursing process, and incorporating patients' cultural/social needs and circumstances [1].

A special group of patients in the Polish healthcare system are individuals with psoriasis, a disease affecting 2-3% of Poland's population. In view of the location of skin lesions in exposed regions, including susceptible areas such as the face, hands, nails, or sexual organs, psoriasis is an enormous burden for patients. The severity of the burden from the perspective of the patient is associated not only with skin complaints – or the necessity to devote a lot of time to care and treatment. It also relates to a considerable extent to the fact that psoriatic patients tend to be approached with misgiving by the people around them and experience ostracism and labeling as well as social marginalisation. People with psoriasis are treated as carriers of infectious diseases who have neglected their health and hygiene and are rejected by society. The fact that the disease is incurable and characterised by a high recurrence rate and burdensome symptoms, combined with other people's reactions, is a source of great stress for patients. In turn, stress is known to be one of the leading factors exacerbating skin lesions in psoriasis or inducing a relapse of the disease [2,3,4].

The comfort of individuals with psoriasis is undoubtedly compromised when they contact unfamiliar people. Psoriatic patients are susceptible to the non-verbal reactions of those around them at the sight of their skin lesions and usually have a reduced sense of self-worth and impaired quality of life. In the healthcare delivery setting, medical staff (especially nurses) are expected to ensure psoriatic patients' comfort and bio-psycho-social well-being. Undoubtedly, the realisation of this goal is facilitated by the staff's dermatological knowledge of the causes of the disease, and its impact on the patient and their quality of life The current standards and curricula in nursing education fail to include any learning objectives related to dermatology, which may lead to future difficulties in the care of dermatological patients, and adversely affect the relationships between this group of patients and the nursing staff, and the performance of professional duties by nurses. This prompted us to conduct a study among nurses to determine the effects of skin diseases on nursing activities' performance, investigate the nurses' perceptions of this patient group, and analyse the results of their self-assessment of care provided to dermatological patients.

The study was based on the opinions of nurses not working in dermatology departments, focusing on their perception of patients with skin problems and selected issues related to their quality of life.

MATERIALS AND METHODS

The study was based on an anonymous questionnaire explicitly developed for the study. A total of 324 questionnaires were distributed, and 197 fully completed questionnaires were used for the analysis. The questionnaire consisted of 7 questions in the general part and 25 questions in the detailed part. The general part questions referred to the respondents' age, seniority in their profession, level of education, type of job, and specialties if any. The questions in the detailed part of the questionnaire referred, among others, to the types of dermato-logical diseases most commonly encountered by the surveyed nurses in their practice, the frequency of their contact with dermatological patients at work, the location of skin lesions in treated patients, the nurses' opinions about the attitude of dermatological patients to their disease, self-assessment of the respondents' knowledge about skin diseases, willingness to work in dermatology departments, and difficulties associated with providing nursing care to patients with skin disorders. The study was conducted after obtaining consent (SUB/3/NN/20/002/3310) from the Ethics Committee at the Medical University of Białystok, Poland.

The collected study material was analysed by determining the probability value (*p-value*) and performing a chi-squared test. The following rules were adopted for probability testing: $p < 0.05$ (*) meant a statistically significant relationship; $p < 0.01$ (**) – highly significant relationship, and $p < 0.001$ (***) – very highly statistically significant relationship.

The study's inclusion criteria were as follows: the consent of the respondent to participate in the study, nursing education, active nursing practice, and employment in hospital departments and/or outpatient clinics specialising in areas other

than dermatology. The exclusion criteria included the lack of consent to participate in the study and working in a dermatology department.

RESULTS

A total of 197 nurses were included in the study. The age of the studied nurses ranged from 20 to 60 years. The majority of the respondents (30.5%) were in the age range of 41-50 years, while 26.4%, 21.3%, and 21.8% of the nurses were in the age groups of 20-30 years, 31-40 years, and 51-60 years, respectively.

Overall, 75.6% of the respondents lived in a town/city, while 24.4% lived in a rural area. Among the respondents, 53.3% had a master's degree, 3.6.0% had a bachelor's degree and 10.7% had a vocational degree (graduated from a secondary/post-secondary medical school).

The largest group (29.4%) were nurses working in surgical and conservative treatment departments (25.9%). In comparison, 21.8% of the respondents were employed in outpatient clinics and 22.8% in other hospital units, including operating suites (instrument and anesthetic nurses), dialysis stations, and hospital infection control teams (epidemiological nurses). Regarding job seniority, the largest groups comprised nurses with work experience spanning 1-5 years (30.4%) and 21-30 years (23.3%). In the group with seniority above 30 years, 16.7% of respondents were 11-15 years – 10.1%, while in the groups of 6-10 years and 16-20 years – 9.6% each.

The nurses included in the study were mostly employed as unit nurses (73.1%). However, 15.7% were surgical nurses, while 11.2% held managerial positions described as coordinator, head nurse or manager. Close to 90 respondents (87.8%) had a specialty, most commonly in internal medicine nursing (21.3%), operative nursing (20.8%), family nursing (20.8%) and surgical nursing (12.7%), pediatric nursing (7.6%), emergency nursing (7.1%), oncology (5.6%), and psychiatry (4.6%), while 8.6% held a specialty in other areas. A total of 12.2% of the respondents had no specialty.

The nurses reported that the most common skin disorders encountered in their professional practice included psoriasis (70.5%), mycosis (47.7%), acne (33.0%), urticaria (38.1%), vitiligo (23.3%), scabies (21.8%), erysipelas (11.7%), impetigo (8.6%), and pemphigus (3.0%). Overall, 10.7% of the respondents indicated other skin diseases without listing them. The nurses providing care to patients in hospital departments and outpatient clinics specialising in areas other than dermatology stated that their patients' skin lesions were located mainly on the upper limbs (54.8%), lower limbs (46.02%), hands (41.1%), face (37.6%), feet (25.4%), head (25.4%), chest (20.8%), back (19.3%), or the whole body (18.8%). The location of lesions in other areas was declared by 2.5% of the respondents.

The nurses surveyed declared that they usually had contact with patients with skin problems several times a month (38.1%), several times a year (26.4%) or several times a week (21.8%), while 1 in 14 nurses declared they had daily contact with such patients (13.7%).

Next, the respondents were then asked whether, in their opinion, all skin diseases were infectious. Overall, 95.9% of the respondents thought that only some were, and 2.6% stated that all were infectious, while 1.5% had difficulty giving a clear answer.

Regarding the self-assessment of knowledge in dermatology, the answers were as follows: 59.4% of the respondents described their knowledge as good, 1.5% as very good, 35.0% as poor, and 4.1% as very poor. At the same time, 77.7% of the respondents declared that they would like to broaden their knowledge in dermatology. No such need was felt by 6.6%, and 15.7% of the nurses surveyed had no opinion in this regard. A total of 86.3% of the respondents felt that completing dermatology training would improve the quality of care they provide to dermatological patients, while 2.5% felt that the care provided to patients would stay the same and the training would not affect this, while 11.2% had no opinion on the matter.

In the next step, the respondents were asked whether, in their view, patients with skin diseases accepted their disease. Overall, 49.8% stated that dermatological patients did not fully accept their disease, 9.1% said that the patients would never accept their condition, 11.2% were of the view that the patients accepted the disease. It did not interfere with their lives, while 29.9% were unable to define the attitude of patients with skin conditions toward their disease.

In addition, the nurses surveyed were requested to describe what they felt were the emotions experienced by patients in connection with their disease. The most commonly listed emotions were: anxiety (26.4%), fatigue (14.2%), frustration (13.2%), irritation (11.2%), resentment about life (10.7%), anger (10.1%), blaming the staff (1.5%), and irritation, fear of pain, and embarrassment (0.5% each). In contrast, 10.7% of the nurses were of the view that the patients felt normal despite the disease, whereas 0.5% could not define the patients' feelings related to the disease.

The majority of the respondents (60.9%) stated that working in a dermatology department was not more difficult than performing work in other hospital departments. This is because dermatological patients are mostly able to manage their daily activities by themselves, emergencies are rare, and there are few bedridden patients. Work in hospital dermatology departments was perceived as more exhausting by 7.1% of the nurses, who justified their

opinion by highlighting the risk of infection, exposure to frustrated patients (irritated by chronic and burdensome symptoms), high workload comprising therapeutic and skin care activities, more rigorous sanitary regime, and high psychological load. Overall, 32.0% of the nurses surveyed had no opinion on this issue. Interestingly, even though more than 60% of the respondents believed that the work is not more difficult, 55.8% would not like to work there (11.7% because they do not know much about dermatology, 3.5% would be afraid of contracting diseases, the remaining 40.6% did not provide reasons). On the other hand, 31.5% of the respondents would like to work in a dermatology department (with 5.6% believing it was a job without much pressure, and 25.9% wanting to learn something new).

A total of 61.4% of the nurses included in our study stated that patients with skin diseases were treated worse by people around them (by acquaintances and strangers – 6.1%, by strangers – 15.2%, depending on the situation – 37.6%, by acquaintances – 2.5%) because of fear of contracting a skin disease and the sensation of disgust provoked by skin lesions. However, 21.8% of the respondents had no opinion on this issue, and 16.8% declared that skin disease did not affect the treatment of patients by people around them. Regarding the patients' quality of life, 72.6% of the nurses felt that it was impaired due to the disease, 17.8% believed that it was the same as in other people, and 9.6% described it as good/better than other people's. In the opinion of the majority of nurses surveyed in the study, both non-dermatologists (50.2%) and non-dermatological nurses (58.4%) treat patients with skin diseases in the same way as other patients. However, there were also respondents claiming that both physicians (21.8%) and nurses (21.3%) are afraid (or not afraid) of contracting a disease from patients depending on the type of nursing activities performed, feel anxious about direct contact with dermatological patients (physicians – 7.6%, nurses – 6.1%), are afraid of becoming infected (physicians – 6.1%, nurses – 7.6%), treat patients in a neutral way (physicians – 3.5%, nurses – 2.5%), experience feelings of disgust and repulsion (physicians – 3.5%, nurses – 0.5%), or the attitude towards patients with skin conditions depends on the individual approach (nurses 0.5%). With respect to the treatment of dermatological patients, 7.1% and 3.0% of the respondents had no opinion regarding the attitude of physicians and nurses towards patients, respectively.

When assessing their own attitude towards dermatological patients, the nurses' answers were as follows: 76.1% of the respondents indicated that, in their view, they treated dermatological patients like any other patients, and 13.7% declared that they were afraid (or not afraid) of managing such patients depending on the procedure to be performed.

In addition, 1.5% of the nurses surveyed stated they felt disgusted and repulsion in contact with skin lesions, while 1.1% were afraid of having direct contact with dermatological patients, and 6.1% indicated their fear of becoming infected. Overall, 0.5% of the respondents declared their readiness to help solve patients' problems as far as their knowledge allowed, or stated that they had a skin disease. Hence, they treated patients with dermatosis with the same respect as other patients.

The nurses surveyed would find it most difficult to perform their care role (29.4%), therapeutic role (19.8%), rehabilitative role (18.3%), educational role (14.2%), and preventive role (12.7%) concerning patients with skin diseases. Health promotion was evaluated as the least difficult role (5.6%).

The respondents' opinions as to where patients with skin conditions should receive treatment were divergent. Most (72.1%) stated that it could be any department, depending on the current health problem, specialist interventions required by the patient, and diagnostic and therapeutic needs. 14.7% of the respondents claimed that hospitalisation should only take place in a dermatology department that can provide qualified staff, specialised dermatological treatment, and the most comfortable conditions suited to the patient's skin condition. The remaining 13.2% of nurses did not express their opinion.

The majority of the nurses surveyed (75.6%) were of the view that a patient with skin diseases required more thorough care, while 13.2% held an opposite opinion, and 11.2% did not have an opinion on the issue. The answers of persons declaring frequent contact with psoriasis (136 out of 197 study participants, i.e. 69%) were analysed to determine their opinion on the patients' attitude towards their skin disease. A statistically significant relationship ($p=0.023$) was found between the answers to this question and frequent contact with psoriasis. However, the answers are somewhat surprising. The respondents who had frequent contact with psoriasis were far less likely (38.2%) to declare a negative attitude towards the disease than those with no or infrequent contact with psoriatic patients (52%). Moreover, as many as 38.2% of the respondents having frequent contact with psoriasis stated that the attitude of dermatological patients to the disease could be described as neutral (Table 1).

A statistically significant relationship was found between the age of the respondents and their definition of dermatological patients' attitudes towards their disease ($p=0.23$). The respondents from the age group of 50+ often declared that the patients were negatively disposed towards their disease. On the other hand, the youngest respondents often believed that the attitude of patients towards their disease could be described as neutral. Thus, it can be presumed that age and the associated more

extensive professional experience may have influenced the respondents' opinion in this area of study (Table 2).

The next step was an analysis of the relationship between the location of skin lesions in the patients under the care of the nurses surveyed and their perception of whether the patients accepted their disease. A statistically significant relationship was identified between frequent contacts with skin lesions involving the lower limbs (excluding feet) and the respondents' opinion on whether the patients accepted their skin condition. The respondents who frequently saw such lesions in their practice very rarely (3%) marked the answer "They will never accept their disease", as opposed to the respondents who did not usually encounter skin lesions involving the lower limbs in their patients (14%). Interestingly, the respondents providing care to patients with skin lesions located all over the body (24%) were of the opinion that patients had accepted their condition (Table 3).

Table 1. Patients' attitudes towards their disease according to nurses declaring frequent contact with psoriatic patients

Attitude towards disease	**Frequent contact with psoriasis**					
	no		**yes**		**p**	**χ2 (df=2)**
	n	%	n	%		
negative	29	51.8%	52	38.2%	0.023	7.552
neutral	10	17.9%	52	38.2%		
positive	17	30.3%	32	23.6%		
Total	56	100%	136	100%		

Table 2. Patient attitudes towards their disease in the opinion of respondents according to age

Attitude towards disease		**Age of respondents**						
		20-30 years	**31-40 years**	**41-50 years**	**51-60 years**	**total**	**p**	**χ2 (df=6)**
negative	n	17	21	20	23	81	0.023	14.624
	%	32.7	50.0	35.1	56.1	42.2		
neutral	n	24	14	18	6	62		
	%	46.1	33.3	31.6	14.6	32.3		
positive	n	11	7	19	12	49		
	%	21.2	16.7	33.3	29.3	25.5		
Total	n	52	42	57	41	192		

Table 3. Relationship between the location of skin lesions and disease acceptance by patients

Location of skin lesions			**Respondents' opinion on patients' acceptance of their skin condition**						
			Not fully	**I cannot tell exactly**	**They will never accept their disease**	**Yes, it does not interfere with their lives**	**Total**	**p**	**χ2 (df=3)**
hands	Yes	n	47	20	7	7	81	0.263	3.987
		%	58.1	24.7	8.6	8.6	100		
	No	n	51	39	11	15	116		
		%	44.0	33.6	9.5	12.9	100		
upper limbs	Yes	n	48	37	10	13	108	0.392	2.999
		%	44.4	34.3	9.3	12.0	100		
	No	n	50	22	8	9	89		
		%	56.2	24.7	9.0	10.1	100		
lower limbs	Yes	n	6	32	3	10	91	0.049	7.876
		%	50.5	35.2	3.3	11.0	100		
	No	n	52	27	15	12	106		
		%	49.1	25.5	14.1	11.3	100		

feet	Yes	n	27	14	4	5	50	0.918	0.505
		%	54.0	28.0	8.0	10.0	100		
	No	n	71	45	14	17	147		
		%	48.3	30.6	9.5	11.6	100		
face	Yes	n	44	17	6	7	74	0.202	4.621
		%	59.5	22.9	8.1	9.5	100		
	No	n	54	42	12	15	123		
		%	43.9	34.1	9.8	12.2	100		
trunk	Yes	n	32	18	9	5	64	0.311	3.579
		%	50.0	28.1	14.1	7.8	100		
	No	n	66	41	9	17	133		
		%	49.6	30.8	6.8	12.8	100		
whole body	Yes	n	12	10	6	9	37	0.006	12.435
		%	32.4	27.1	16.2	24.3	100		
	No	n	86	49	12	13	160		
		%	53.7	30.6	7.5	8.2	100		
Total		n	98	59	18	22	197		

The respondents were also asked to rate the quality of life of dermatological patients. In the group rating the quality of life as low, the following aspects were listed as reasons: the disfiguring nature of dermatological conditions, burden associated with skin complaints, problems with interactions with other people because of physical appearance, rejection by those around them due to feelings of disgust. The nurses having frequent contact with skin lesions located on the face significantly more often (83.8%) marked the answer "Reduced quality of life" compared to others (65.8%) (Table 4).

Table 4. Location of skin lesions and opinions on the quality of life of dermatological patients

Location of skin lesions			**Reduced quality of life**	**No difference in quality of life**	**Improved quality of life**	**Total**	**p**	**$\chi 2$ (df=2)**
hands	Yes	n	61	14	6	81	0.647	0.872
		%	75.3	17.3	7.4	100		
	No	n	82	21	13	116		
		%	70.7	18.1	11.2	100		
upper limbs	Yes	n	81	19	8	108	0.488	1.436
		%	75.0	17.6	7.4	100		
	No	n	62	16	11	89		
		%	69.7	18.0	12.3	100		
lower limbs	Yes	n	67	17	7	91	0.679	0.773
		%	73.6	18.7	7.7	100		
	No	n	76	18	12	106		
		%	71.7	17.0	11.3	100		
feet	Yes	n	35	7	8	50	0.182	3.403
		%	70.0	14.0	16.0	100		
	No	n	108	28	11	147		
		%	73.5	19.0	7.5	100		
face	Yes	n	62	10	2	74	0.010	
		%	83.8	13.5	2.7	100		

	No	n	81	25	17	123		9.175
		%	65.8	20.4	13.8	100		
trunk	Yes	n	50	10	4	64	0.411	1.778
		%	78.2	15.6	6.2	100		
	No	n	93	25	15	133		
		%	69.9	18.8	11.3	100		
whole body	Yes	n	28	6	3	37	0.890	0.233
		%	75.7	16.2	8.1	100		
	No	n	115	29	16	160		
		%	71.9	18.1	10.0	100		
Total		n	143	35	19	197		

The relationship between the nurses' willingness/unwillingness to work in a dermatology department and the level of anxiety associated with performing nursing activities for patients with skin diseases was analysed, and a correlation was identified between these variables (p=0.008). Interestingly, among the respondents stating that working in a dermatology department is harder than in other hospital departments, as many as 28.6% declare they would feel anxiety when performing nursing activities in patients with skin diseases. Surprisingly, in the group of nurses who did not consider this work to be harder, as many as 10% declared that they would felt anxiety (Table 5).

Table 5. Anxiety felt when performing activities in patients with dermatosis vs perceived severity of work in a dermatology department

Do you feel anxiety when performing nursing activi-ties in patients with dermatosis?		**Is working in a dermatology department or outpatient clinic more exhausting than working in other hospital departments?**					
		No	**I don't know**	**Yes**	**Total**	**p**	**χ2 (df=4)**
Yes	n	13	3	4	20	0.008	13.661
	%	10.8	4.8	28.6	10.1		
No	n	77	34	4	115		
	%	64.2	54.0	28.6	58.4		
I don't know.	n	30	26	6	62		
	%	25.0	41.3	42.8	31.5		
Total	n	120	63	14	197		

In the next step, it was determined whether the perception of anxiety when performing nursing activities in dermatological patients was related to the nurses' opinion on whether such patients require more thorough care. In this respect, statistical significance was obtained (p=0.013). The nurses who declared feelings of anxiety related to caring for patients with skin diseases in 95% of cases indicated that dermatological patients needed more thorough nursing care. The same opinion was expressed by 75.6% of the respondents not experiencing anxiety associated with providing care to this group (Table 6).

Table 6. Perception of anxiety while performing activities in a patient with dermatosis vs burden of working in a dermatology department

Do patients with skin condi-tions require more thorough care?		**Do you feel anxiety when performing nursing activities in patients with dermatosis?**					
		Yes	**No**	**I don't know**	**Total**	**p**	**χ2 (df=4)**
Yes	n	19	87	43	149	0.013	12.594
	%	95.0	75.6	69.3	75.6		
I don't know.	n	0	9	13	22		
	%	0.0	7.8	21.0	11.2		
No	n	1	19	6	26		
	%	5.0	16.5	9.7			
Total	n	20	115	62	197		

DISCUSSION

The skin is the largest organ of the human body. It is involved in multiple processes and functions, including thermoregulation, protection, and reception of external stimuli. In addition, the skin has an aesthetic role. The appearance of the skin is vital to how a person is perceived by others. Unlike diseases affecting other organs, skin conditions are immediately visible and have a major effect on the mood of the patient and the attitude of other people. A prime example of aggravating skin disease is psoriasis, which affects the skin as well as nails and joints [1].

Several exogenous and endogenous factors are known to be implicated in the development of psoriasis, including genetic and immune-mediated components, diet, intake of certain medications, past infections, mechanical injuries, psychological stress, and history of traumatic experiences [5-8].

In contemporary times, people are exposed to the mass media creating an unrealistic portrayal of the ideal personal life and professional career and a socially desirable image of youth and beauty. Any deviation from the recognised ideal of attractive appearance is disapproved, leading to social exclusion. Patients with skin diseases typically develop lesions in visible body areas, which may cause social depreciation and rejection, raise suspicions about the disease being infectious, and the patient being negligent in personal hygiene [9-14].

In addition, patients are susceptible to verbal and non-verbal reactions of people around them to the physical appearance of their skin. They often encounter attitudes of disgust or hostility in people around them, as well as greater physical distance due to fears about the risk of becoming infected and feelings of aversion, resulting in emotional problems, body image disturbances, fear of stigma, and a sense of the low quality of life [15-18].

Jankowiak et al. [19] claim that psoriatic patients have a reduced self-image and poor self-esteem, reflecting a sense of stigma. In other studies, Jankowiak et al. [20] report that dermatological patients consider their body as "tainted" and experience feelings of shame and guilt. Consequently, they do not accept their disease, suffer from low self-esteem, and experience somatic complications (e.g. cardiovascular diseases, obesity) as well as psychological conditions, the severity of which depends on the location of skin lesions, e.g, on large areas of the body or in particularly sensitive regions (genital area, nails, hands, and face) [21-31].

As underscored by many authors, skin diseases impair the fulfillment of social roles and hurt the patients' family life and social and occupational functioning, reducing the quality of life [32,33,34].

Crucially, trauma or stress experienced following the recurrence or aggravation of skin lesions is one of the leading factors inducing both the manifestation of the disease and exacerbation of its symptoms [35, 36].

In our study, 61.4% of the nurses reported stated that patients with dermatoses were treated worse by people around them (by acquaintances and strangers – 6.1%, by strangers – 15.2%, depending on the situation – 37.6%, by acquaintances – 2.5%) because of fear of getting infected and the sensation of disgust provoked by skin lesions.

There are many literature reports on the effects of skin diseases on the bio-psycho-social well-being of patients. However, few publications discuss aspects involved in the functioning of these patients in the hospital setting in non-dermatological departments – or the perception of the medical staff regarding this specific group of patients.

In the healthcare setting, nurses have the most frequent contact with patients on account of the nature of their profession. Their attitude and the level of medical services they provide may significantly impact patients' well-being, including their sense of the quality of life. As mentioned above, patients with skin diseases are particularly sensitive to even the most subtle signs of other people's aversion caused by their skin condition [37,38].

In our study, nurses employed in non-dermatology departments and outpatient clinics were asked about the frequency of contact with patients suffering from skin diseases. They stated that they typically had contact with patients with skin problems several times a month (38.1%), several times a year (26.4%), or several times a week (21.8%), while 1 in 14 nurses declared they had daily contact with such patients (13.7%). The most commonly encountered skin conditions were psoriasis (70.5%), mycosis (47.7%), acne (33.0%), urticaria (38.1%), vitiligo (23.3%), scabies (21.8%), erysipelas (11.7%), impetigo (8.6%), and pemphigus (3.0%). As declared by the respondents, the skin lesions were typically located on the upper limbs (54.8%), lower limbs (46.02%), hands (41.1%), face (37.6%), feet (25.4%), head (25.4%), chest (20.8%), back (19.3%), or the whole body (18.8%).

Undoubtedly, one of the main factors negatively affecting the quality of life and attaching stigma to dermatological patients is the location of skin lesions in exposed areas, visible to other people and perceived by patients as sensitive. These include the face, scalp, upper limbs, especially the hands and nails, and the genital area. Similar findings were reported by Allen et al. [39], Lichtenstein et al. [40], Mulholland et al. [41], Rüsch et al. [42], and Kostyła et al. [43].

Our study examined the relationship between the location of skin lesions indicated by the respondents and their opinion on whether affected patients accepted their skin condition. There was a statistically significant relationship between the frequent occurrence of skin lesions on the lower

limbs (excluding feet) in patients and the opinion of the nurses on whether the patients had accepted their disease. The respondents who frequently saw such lesions in their practice very rarely (3%) marked the answer "They will never accept their disease", as opposed to the respondents who did not usually encounter skin lesions involving the lower limbs in their patients (14%). Interestingly, the respondents caring for patients with skin lesions located all over the body (24%) thought that patients had accepted their condition. In addition, the nurses were requested to rate the quality of life of dermatological patients. In the group rating their quality of life as low, the following aspects were listed as reasons: disfiguring nature of dermatological conditions, the burden associated with skin complaints, problems with interactions with other people because of physical appearance, and rejection by those around them due to feelings of disgust. Importantly, the nurses who frequently encountered dermatoses involving the face significantly more often (83.8%) indicated a reduced quality of life compared to the rest of the respondents (65.8%).

Even though dermatological patients experience various degrees of stigma related to their disease, they are affected by several unfavorable implications for their functioning regardless of stigmatization. In Kanikowska's study [44], approximately two-thirds of the subjects stated that the disease largely contributed to how they dressed and shaped their behaviour in public places [44]. It needs to be underscored that the feeling of being stigmatised subjectively experienced by patients with dermatological conditions often leads to efforts to mask skin changes. As a result, both the stigma attached to the disease and attempts to avoid it by concealing skin lesions provoke negative emotional reactions (anger, anxiety, sadness, depression) in the patient [45,46]. Gupta et al. [47] and Korabel et al. [48] point out that the tension associated with the development of skin lesions combined with the feeling of being labeled may contribute to psychological disorders leading to suicidal ideation and behaviour. Łakuta et al. [49] revealed depressive symptoms in the studied group of psoriatic patients, with 22.3% of them having suicidal ideation.

In addition, the nurses surveyed were requested to describe what they felt were the emotions experienced by patients in connection with their disease. The most commonly enumerated emotions included anxiety (26.4%), fatigue (14.2%), frustration (13.2%), irritation (11.2%), resentment about life (10.7%), and anger (10.1%). The respondents were also asked whether, in their opinion, patients with skin diseases accepted their disease. Overall, 49.8% of the respondents stated that dermatological patients did not fully accept their disease, 9.1% said that the patients would never accept their disease, 11.2% were of the view that the patients accepted the disease and it did not interfere with their lives, while 29.9% were unable to to define the attitude of patients with skin conditions to their disease. When analysing the respondents' answers declaring frequent contact with psoriasis regarding their opinions on the attitude of patients to their skin disease, a statistically significant relationship was found ($p=0.023$). The answers were somewhat surprising, though, as the respondents declared the patients' negative attitudes towards the disease far less frequently (38.2%).

Furthermore, a statistically significant relationship was found between the age of the respondents and their description of dermatological patients' attitudes towards their disease ($p=0.23$). The respondents aged 50+ very commonly described the patients' attitude towards their disease as negative. On the other hand, the youngest respondents often claimed that the patients neutrally approached their condition. Thus, it can be presumed that age and the associated more extensive professional experience may have influenced the respondents' opinion in this area of study.

Skin diseases arouse people's interest because of their visibility and fear of infection. Such concerns and uncertainty or anxiety may also emerge among medical staff providing care to dermatological patients. This phenomenon has not been studied, and no literature reports have been found on this topic aside from an earlier study conducted in 2010 (Kowalewska et al.) [50], which revealed that nurses had concerns related to the care of patients with skin diseases.

In the opinion of most nurses surveyed in the study, both non-dermatologists (50.2%) and non-dermatological nurses (58.4%) treat patients with skin diseases in the same way as other patients.

However, there were also respondents claiming that both physicians (21.8%) and nurses (21.3%) are afraid (or not afraid) of contracting a disease from patients depending on the type of nursing activities, feel anxious about direct contact with dermatological patients (physicians – 7.6%, nurses – 6.1%), are afraid of becoming infected (physicians – 6.1%, nurses – 7.6%), or experience disgust and repulsion (physicians – 3.5%, nurses – 0.5%).

In the nurses' self-assessment of their attitudes towards dermatological patients, 76.1% declared that they treated them as any other patients, 13.7% were afraid (or not) of contact depending on the type of nursing activity, 1.5% experienced feelings of disgust and repulsion, 1.1% were afraid of direct contact, and 6.1% feared becoming infected.

Professional medical care – including nursing care – is based on several factors, including thorough expert knowledge.

In view of this fact, the respondents were asked to self-assess the level of their dermatological knowledge. It was described as good by 59.4%, very

good by 1.5%, poor by 35.0%, and very poor by 4.1% of the respondents.

At the same time, 77.7% of the respondents would be interested in expanding their knowledge in the field of dermatology, and 86.3% stated that participation in dermatology training would improve the quality of care provided to patients.

Tałałaj and Suchorzewska [51] and Sińska et al. [52] highlight that the nurses' attitudes towards patients and various aspects of their professional roles are major factors impact treatment efficacy. Szymkowska et al. [53] highlight the issue of individual responsibility of nurses for nursing outcomes, whereas Osińska [54] emphasises the role of ongoing education and search for new individualised solutions in holistic care systems so that professional nursing services can be provided to their full extent.

The nurses surveyed stated that they would find it most challenging to perform caring (29.4%), therapeutic (19.8%), and rehabilitative (18.3%) roles towards patients with skin conditions.

A total of 75.6% of the nurses believed that patients with skin diseases required more thorough care. The majority of the respondents (72.1%) reported that the treatment of dermatological patients should depend on their health problem, and 14.7% stated that patients with skin conditions should only be hospitalised in a dermatology department with qualified staff. Interestingly, among the respondents declaring that working in a dermatology department is harder, as many as 28.6% (alongside 10% considering this work as equivalent to other departments) would feel anxiety when performing nursing activities involving patients with skin diseases (p=0.008). Furthermore, among those declaring anxiety related to caring for dermatological patients, 95% indicated that such patients required more thorough nursing care.

CONCLUSIONS

1. More than half of the nurses described their dermatological knowledge as good. However, at the same time nearly three-quarters would be interested in improving their knowledge in the area of dermatology which, in their view, would improve their capacity to provide care to patients.
2. The majority of the respondents felt that dermatological patients did not accept their disease, and experienced poorer treatment by people around them because of their illness.
3. Nearly three-quarters of the nurses surveyed believed that the quality of life of dermatological patients was impaired as a result of their disease.
4. The majority of the respondents claimed that both physicians and nurses treated dermatological patients exactly like other patients, even though some of them were afraid of becoming infected or felt disgust triggered by the skin lesions.
5. Although most of the respondents regarded working in a dermatology department as not more challenging than in other hospital departments, more than half of them would not like to be employed in a dermatology department.
6. According to the respondents, the greatest difficulty would be associated with performing their caring, therapeutic and rehabilitation roles in the treatment of dermatological patients.

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Authorship

All named authors meet the International Committee of Medical Journal Editors (ICMJE) criteria for authorship for this manuscript, take responsibility for the integrity of the work as a whole, and have given final approval to the version to be published.

Disclosures

Beata Kowalewska, Mateusz Cybulski, Elżbieta Krajewska – Kułak, have nothing to disclose.

Compliance with Ethics Guidelines

The research conforms with the Good Clinical Practice guidelines.

The procedures followed were in accordance with the Helsinki Declaration of 1975, as revised in 2000 (concerning the ethical principles for the medical community and forbidding the release of the patient's name and initials, or the hospital evidence number).

The study was reviewed and approved by the Bioethics Committee of the Medical University in Białystok (statute no. R-I-002/285/2018). Furthermore, informed consent was obtained from all individual participants included in the study.

Data Availability

The datasets generated during and analyzed during the current study are available from the corresponding author on reasonable request.

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