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COVID-19 pandemic

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Quality of life in patients with psoriasis vulgaris during the COVID-19 pandemic

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ABSTRACT

Background: Psoriasis is a chronic inflammatory dermatological disease that has a major impact on quality of life. Skin diseases are the most common somatic causes of psychological disorders and, conversely, under the influence of a psychological disorder, there is usually a cutaneous manifestation. This is the main reason for conducting this research during the COVID-19 pandemic, a time when most of the population is under constant stress. The research is aimed at determining the quality of life of patients with psoriasis. **Materials and Methods:** In this research, we employed two questionnaires. One collected particulars such as the patient's age and gender. The other was a DLQI (Dermatological Life Quality Index) questionnaire. Due to the epidemiological situation, the questionnaire was completed by patients who came for a control examination, and most of them were contacted by phone; some completed the questionnaires online. One hundred six respondents participated actively in this research. **Results:** The lowest score of the Dermatological Life Quality Index (DLQI) is 3, and the highest is 29. The most commonly received scores were 4 and 8, among which the score of 4 was given to 19 (17.9%) respondents and the score of 8 was given to 21 (19.8%) respondents. 69.8% of the respondents experienced problems with the affected parts of the skin rated as answers "moderately" or "a lot." In terms of health issues, female respondents had lower values than male respondents. However, by applying the t-test to determine the statistical significance of the difference with $p \leq 0.05$, the value of t was determined to be -0.48 ($p = 0.31$), which means that there was no statistically significant difference.

Conclusion: When compared to the results of studies performed several years ago, together with this study performed during the COVID-19 pandemic, there are no major differences in terms of quality of life in patients with psoriasis.

Key words: Psoriasis; quality of life; COVID-19

INTRODUCTION

Psoriasis is a chronic inflammatory dermatological disease that has a major impact on the quality of life of patients suffering from it [1]. It is a complex health disorder occurring from an interaction of multiple genes, the immune system, and the impact of external factors [2]. The physical symptoms of psoriasis negatively affect health and social relationships [1]. In a survey by the National Psoriasis Foundation, almost 75% of patients believed that psoriasis had a moderate to large negative impact on their quality of life (QoL), with alterations in their daily activities [3]. Many

patients report moderate to extreme feelings of anxiety, anger, and depression and a higher frequency of suicidal ideation [1]. Its severity is measured on the basis of skin changes (erythema, induration, and desquamation) and the size of the affected skin [4]. The influence of social function includes informal and intimate relationships with other people, avoiding contact, and feeling stigmatized. Psychological function is impaired by the reduction of self-esteem and the inability to control the progression of the disease and its impact on the quality of daily life and activities, leading to psychological disorders such as anxiety and depression and even to the use of psychotropic substances and

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formation of suicidal thoughts [5]. Skin diseases are the most common somatic causes of psychological disorders and, conversely, under the influence of a psychological disorder, there is usually a cutaneous manifestation [6]. This is the main reason for conducting this research during the COVID-19 pandemic, a time when most of the population is under constant stress.

Psoriasis and Quality of Life

The World Health Organization defines quality of life (QoL) as “an individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.” Quality of life is a general perception of one’s life and an estimation of the degree to which it meets their expectations. Different aspects of life can be taken to assess such quality [7]. A number of researchers agree that predominantly the most important things in this measurement are health, emotional and material well-being, interpersonal relationships, and work. Importantly, psoriasis as a disease covers all these aspects and factors, which makes its impact even more profound. What further increases the influence of the disease on one’s quality of life is that it manifests itself on the skin, an external organ most and first exposed to the scrutiny of others. Psoriasis has a significant impact on one’s self-perception and self-evaluation. According to some authors, the improvement of the clinical appearance is of great importance for the improvement of the patient’s psychological situation, which will positively impact their quality of life [8]. The assessment of the quality of life of people suffering from psoriasis employs a number of questionnaires designed for this purpose. In our research, we chose to use the Dermatological Life Quality Index (DLQI).

Aim of the Research

This research is aimed at determining the quality of life of patients with psoriasis, in other words, at determining their satisfaction with the current level of functioning in terms of what they consider possible and ideal. The psychological reaction to the disease varies from person to person: some find it extremely difficult to deal with even a small advancement of the disease, while others cope successfully with more severe manifestations. The way one deals with psoriasis depends on its perception—a construction that has recently been studied in the field of health psychology [8]. Given the impact that psoriasis can have on daily functioning,

what comes to light is the need for more studies and research that could foreground the importance of this issue, help in creating new methods of therapy, and bring more attention to the mental health of these patients, as well as raise the collective awareness of the nature of what psoriasis is.

MATERIALS AND METHODS

In our research, we employed two questionnaires. One collected particulars such as the patient’s age and gender. The other was a DLQI (Dermatological Life Quality Index) questionnaire, for which we have a license [9].

The purpose of a DLQI questionnaire is to determine how much a skin concern affects one’s life. It was designed in the 1980s as a unified tool for measuring the impact of skin disease on the quality of life of patients. It consists of ten questions related to the following: symptoms and feelings, daily activities such as shopping, housework, leisure activities, work, school, personal relationships, and treatment. The DLQI is defined as the sum of scores for each of the questions, resulting in a maximum of 30 (extremely large effect on the patient’s life) and a minimum of 0 (no effect at all on the patient’s life). The higher the score, the more quality of life is impaired [9]. The answers are scored as follows: “not at all” at 0, “a little” at 1, “moderately” at 2, and “a lot” at 3. The questionnaire is intended for persons older than 16 years.

Population and Sample

One hundred six respondents who were medically treated or receiving appropriate therapy were included in the study. The response of patients who took active part in the survey was 82.3% (Fig. 1). The respondents were divided accordingly by gender and age. Due to the current epidemiological situation, the questionnaire was completed by patients who came for a control examination, and most of them were contacted by phone; some completed the questionnaires online. All patients with a history of psoriasis who were treated regularly at our institutions, as well as the patients who were visiting private health institutions, and agreed to complete the questionnaire took part in the research.

Twenty-four respondents were thirty and younger, fifty-two respondents were between 31 and 60 years of age, and thirty were older than 61 (Table 1). The youngest patient was 18 years old, and the oldest was 82.

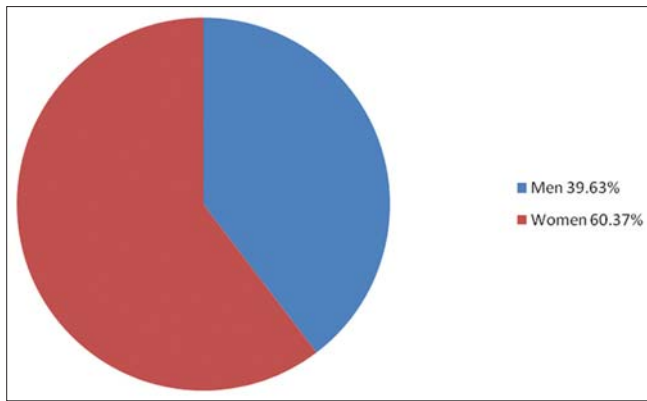


Figure 1: Distribution of respondents by gender.

Table 1: Distribution of respondents by gender and age

N		Up to 30 years of age	From 31 to 60 years of age	Above 61 years of age	Total
Men	f	8	24	10	42
	%	7.55	22.65	9.43	39.63
Women	f	16	28	20	64
	%	15.1	26.41	18.86	60.37
Total	f	24	52	30	106
	%	22.65	49.1	28.3	100

RESULTS

According to the DLQI questionnaire—whose purpose is to determine how much a skin concern affects one's quality of life—respondents answered ten questions that were scored from 0 to 3.

The lowest DLQI score, which was 3, was obtained from 4 (3.7%) respondents, and the highest, which was 29, was obtained from 6 (5.6%) respondents. No maximum score of 30 was recorded. The most commonly obtained scores were 4 and 8, among which a score of 4 was given to 19 (17.9%) respondents, and a score of 8 was given to 21 (19.8%) respondents. 16 (15.09%) respondents had a score of 15, and the same number of respondents had a score of 16; 14 (13.2%) respondents had a score of 21, and 10 (9.4%) respondents had a score of 17.

As many as 69.8% of the respondents had problems with the affected parts of the skin rated as answers “moderately” or “a lot” (Fig. 2). The skin was itchy, tingly, sore, or inflamed. Choosing the appropriate clothes was a problem for 64.1% of the respondents. Treating the skin issues at home in terms of dirtiness and time consumption was a problem for 54.7% of the respondents. In performing daily activities, such as shopping and working at home or in the garden, 52.8% of the respondents had problems

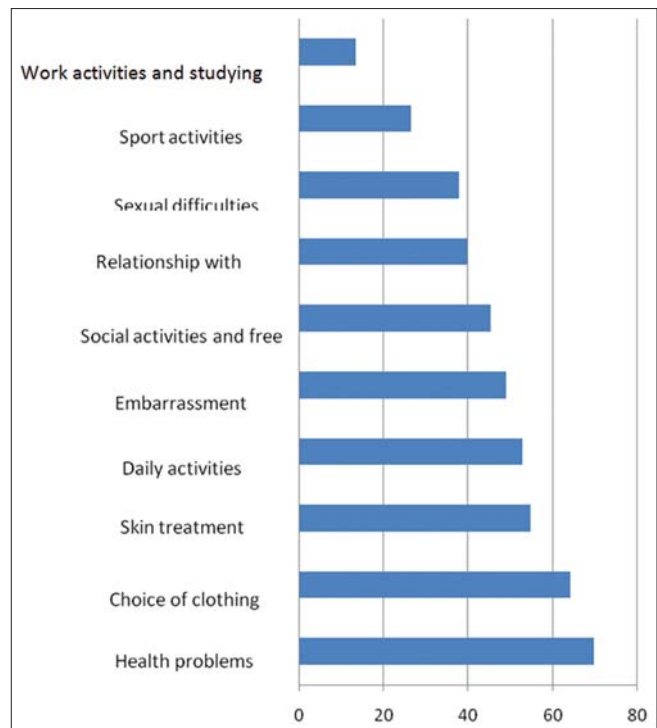


Figure 2: Areas of life in which respondents experienced moderate to significant problems.

rated as answers “moderately” or “a lot.” 49% of the respondents felt embarrassed by the condition of their skin. Social activities and free time were problems rated as answers “moderately” or “a lot” for 45.2% of the respondents. The relationship with the partner, friends, and relatives was a considerable problem for 39.6% of the respondents. 37.7% of the respondents experienced sexual difficulties, 26.4% experienced problems with sports activities, while only 13.2% reported difficulties with work activities and studying.

In terms of health problems, female respondents gave lower DLQI values than male respondents (Table 2). However, by applying the t-test to determine the statistical significance of the difference, where $p \leq 0.05$, the value of t was determined to be -0.48 ($p = 0.31$), which means that there was no statistically significant difference. As for embarrassment, female respondents achieved higher results than male respondents, with $p = 0.22$, which means that there was, again, no statistically significant difference. Daily activities were a more significant problem for female respondents, but a p value of 0.28 confirmed that the difference was not statistically significant either. Choice of clothing was also a considerable problem for female respondents, but with $p = 0.39$

Table 2: Mean values of the DLQI according to gender (AM – arithmetic mean; SD – standard deviation)

	Men		Women	
	AM	SD	AM	SD
Health problems	1.95	0.74	1.93	0.87
Embarrassment	1.42	1.17	1.65	1.1
Daily activities	1.61	1.04	1.65	1.1
Choice of clothing	1.9	1.09	1.93	1.11
Social activities and free time	1.5	0.97	1.46	0.99
Sport activities	1.23	1.06	0.65	1.07
Work activities and studying	0.57	0.9	0.53	0.78
Relationship with the partner, relatives, and friends	1.28	1.03	1.12	1.05
Sexual difficulties	1.33	1.12	0.81	0.98
Skin treatment	1.61	0.94	1.53	1.14

there was no statistically significant difference. As for social activities and free time, male respondents achieved higher results, but a p value of 0.49 confirmed that there was no statistically significant difference. Sports activities were shown to be a more significant problem for males but there was no statistically significant difference, with $p = 0.36$. Work activities and studying were a more significant problem for males, but a p of 0.4 showed that there was no statistically significant difference. When it comes to the relationship with the partner, friends, and relatives, male respondents gave higher scores, but $p = 0.29$ confirmed that there was no statistically significant difference. Regarding sexual difficulties, male respondents gave higher scores and a p value of 0.03 indicated a statistically significant difference at the level of significance of 0.05. Treatment of the ailing parts of the skin was a more palpable problem for males, but a p value of 0.38 did not indicate a statistically significant difference.

DISCUSSION

The research results were collected in order to determine the quality of life of psoriatic patients, in other words, to determine their satisfaction with the current level of functioning in relation to what they consider possible and ideal, as well as minimizing the risk of depression. The questionnaires made it possible to collect detailed information about numerous aspects of health disturbed by psoriasis. Patients with psoriasis were found to experience a range of challenges and obstacles on a daily basis that impaired their quality of life, either through health manifestations (itching, pain, inflammation, tingling) or time-consuming skin treatments, embarrassment, choice of appropriate clothing, and troubles with daily tasks.

CONCLUSION

Psoriasis has a profound impact on quality of life, even though there prevails a belief that skin diseases are less serious and, because they might not be as life-threatening, health workers devote to them less attention. This belief is, however, wrong, because skin diseases, especially psoriasis, have a huge impact on the patient's mental health, for instance, on physical, social, and psychological aspects of life. Research on this issue is becoming progressively more necessary in the fields of science and medicine. Given that the skin is the largest organ and its diseases have great repercussions, they impact not only the quality of life of the patient but also of their families. We concluded that, when compared with the results of studies performed several years ago [10,11], together with this study performed during the COVID-19 pandemic, there are no major differences in terms of quality of life in patients with psoriasis.

Statement of Human and Animal Rights

All the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the 2008 revision of the Declaration of Helsinki of 1975.

Statement of Informed Consent

Informed consent for participation in this study was obtained from all patients.

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COVID-19 and skin: Analysis of the available data

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ABSTRACT

Background: This review aims to search the literature for possible cutaneous involvement in patients with COVID-19 infections. Such an analysis could provide dermatologists and other physicians with valuable information on the possible clinical manifestations of the disease as well as suggest a certain immunological pathway of the infectious process. **Materials and Methods:** A thorough search for the online literature available in scientific databases was conducted. Currently, data on cutaneous involvement is scarce, but, nonetheless, present. The papers found were divided into three categories—reported cases, exacerbations of preexisting skin diseases, and skin manifestations of preventive measures and treatment—and analyzed. **Discussion:** Dermatologists should take into consideration a COVID-19 infection in patients with diffuse exanthems, whether petechial, vesicular, urticaria-like, or otherwise. Specific patterns of lesions of the skin or of mucous membranes in COVID-19 infections have not yet been defined. Dermatologists should be expecting to deal with aggravated preexisting skin diseases, as well as deal with and minimize skin problems caused by the use of personal protective equipment (PPE).

Key words: COVID-19; Cutaneous manifestations; Exacerbation

INTRODUCTION

In late December 2019, a pneumonia outbreak of unknown etiology emerged in Wuhan, Hubei Province, China, and spread quickly nationwide [1]. On February 11, 2020, the World Health Organization (WHO) designated the new coronavirus disease COVID-19 [2]. By mid-February, COVID-19 has rapidly spread through China and across the world [3], and a pandemic situation was announced on March 11 [4,5].

Coronaviruses (CoVs) are positive-stranded RNA viruses with a crown-like appearance due to the presence of spike glycoproteins on the envelope [6]. Members of the large family of viruses Coronaviridae can cause respiratory, enteric, hepatic, and neurological diseases in various animal species. As with other respiratory pathogens, the transmission of COVID-19 is believed to occur through respiratory droplets from coughing and sneezing. Aerosol transmission is also

possible when in protracted exposure to elevated aerosol concentrations in closed spaces [7].

The most common symptoms of the disease are cough, shortness of breath and fever [8].

Reported Cases of COVID-19 Cutaneous Manifestations

COVID-19 is considered not to be dermatotropic [9], primarily affecting the respiratory system. However, skin manifestations were observed in about one-fifth of a group of patients with COVID-19 in Alessandro Manzoni Hospital, Lecco, northern Italy [10]. 148 COVID-19–positive patients were studied, with 60 of them excluded due to a new medicine intake in the preceding 15 days. Out of the remaining 88 patients, 18 (20.4%) had developed cutaneous manifestations; 8 had developed skin involvement at the onset, and 10 after hospitalization. Cutaneous manifestations included erythematous rash (14 patients), widespread urticaria (3

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patients), and chickenpox-like vesicles (1 patient). The trunk was the most affected. Itching was low or absent, and lesions usually healed in a few days. No correlation was found with the disease's severity [10].

In all these cases, a possible allergic reaction to any kind of treatment was excluded as most allergic reactions occur within hours to two weeks after taking medication, depending on the mechanism of the cutaneous sensitization [11]. The clinical findings could be interpreted as a nonspecific viral exanthem. A viral exanthem is a widespread nonspecific rash usually characterized by a generalized eruption of erythematous papules and macules [12,13]. Certain exanthems have distinct patterns of rashes and prodromal (pre-rash) symptoms, which aid in discriminating the causative virus. In many cases, however, an accurate diagnosis cannot be established on the basis of a clinical examination alone. Medical history may be helpful in evaluating patients, specifically their contact with the disease, immunization record, previous exanthematous illnesses, and associated prodromal symptoms [14,15].

In March 2020, a case of a COVID-19 infection with the presence of a petechial skin rash was reported in Thailand. The patient was initially misdiagnosed with Dengue fever by the first physician in-charge because of the characteristic rash and a low platelet count. In this case, the patient presented further respiratory problems and was referred to a tertiary medical center. Other common virus infections that might cause fever, rash, and respiratory problems were ruled out by a laboratory investigation, and the final diagnosis of a COVID-19 infection was ascertained by a Real-Time PCR (RT-PCR) [16].

Because immune and coagulation changes in viremia can lead to the occlusion of small blood vessels, petechiae, tiny bruises, and transient livedoid eruptions may be present. A case series from Wuhan was published in an NEJM correspondence [17]. In March 2020, Chinese physicians reported the results of a retrospective study that they had conducted. The study included 7 critical COVID-19 patients with acro-ischemia in a single center in Wuhan from February 4 to February 15, 2020. All of the patients had acro-ischemia manifestations, including finger and toe cyanosis, skin bullae, and dry gangrene. Levels of D-dimers, fibrinogens, and fibrinogen degradation products (FDPs) were significantly elevated in most patients. The prothrombin time (PT) was prolonged in 4 patients. D-dimer and FDP levels increased

progressively with the exacerbation of COVID-19 infections, and 4 patients were diagnosed with definite disseminated intravascular coagulation (DIC) [18]. However, a differential diagnosis of DIC can be difficult to reach in COVID-19 patients as proinflammatory cytokines and other mediators are capable of activating the coagulation system and downregulating important physiologic anticoagulant pathways [19]. Therefore, the little data available makes it impossible to reach definite conclusions on whether the skin changes described above are due to a general antiviral or critical illness reaction, to an activated autoimmune response, or to a specific COVID-19 mechanism.

Dermatologists should always keep in mind a possible COVID-19 infection in a patient with skin changes accompanied by other symptoms.

Conceivably, many patients with a COVID-19 infection manifesting a rash and experiencing other severe symptoms do not contact a dermatologist, rather physicians of other specialties. Severe symptoms of a life-threatening condition, such as breathing difficulties, chest pain, cyanosis of the lips or face, demand immediate intensive care, and the condition of the skin should rest aside.

Exacerbations of Preexisting Skin Diseases

Although COVID-19 does not primarily affect the skin, skin changes in the course of a viral infection should not be ignored. Dermatologists should also be expecting aggravations of preexisting chronic and autoimmune skin illnesses, such as atopic dermatitis, psoriasis, seborrheic dermatitis, lupus erythematosus, and hidradenitis suppurativa. Because diseases with an epidermal barrier interruption can facilitate viral acquisition through indirect contact [20], dermatology patients might be at increased risk of developing this infection [9]. Individuals on disease-modifying therapies (DMTs), such as immunomodulatory treatments, are also at higher risk of contracting a COVID-19 infection [21].

Clinical data also suggests that further deterioration in infected patients may be the result of a proinflammatory state created by a cytokine storm [22]. The cytokine-storm immunopathology of SARS-CoV-2 suggests that a subset of immunosuppressive therapies may begin to play a protective role in infected patients. By inhibiting the intensity of the cytokine storm, immunosuppressants may prevent lung tissue damage and further clinical deterioration. There exist, however,

no universally accepted guidelines. Furthermore, immunomodulators, including biologic agents used to treat cutaneous diseases, may, possibly, predispose to a more severe presentation of a COVID-19 infection. Some recommendations advocate for an immediate discontinuation of all immunomodulators used to treat skin diseases, except corticosteroids [23]. Others, such as the British Dermatology Society, recommend shielding [24]. Dermatologists should employ clinical judgment, existing AAD guidelines, and an understanding of pathophysiology to weigh the risk–benefit ratio of using systemic immunomodulating therapies [25] and the phase of the COVID-19 infection (inflammatory or immune) [26].

An aggravation of preexisting autoimmune or chronic skin diseases with no other signs and symptoms may be the first indication of a concomitant viral infection. Therefore, dermatologists should stay alert to ask their patients about possible previous contact with an infected person or, perhaps, suggest a diagnostic test for COVID-19. It is important to stress the importance of preventive measures, which should be adhered to by both the physician and patient.

Skin Manifestations of Preventive Measures and Treatment

Skin problems related to personal protective equipment (PPE) and personal hygiene measures are mainly due to the hyperhydration of PPE, friction, epidermal barrier breakdown, and contact reactions, all of which may aggravate existing skin diseases (Figs. 1 and 2) [9,27].

Although no antiviral treatments specific to COVID-19 infections have been approved, several approaches have been proposed, such as lopinavir/ritonavir (400/100 mg every 12 hours), chloroquine (500 mg every 12 hours), and hydroxychloroquine (200 mg every 12 hours). Interferon alfa—e.g., 5 million units by aerosol inhalation twice a day—is also used [7].

The use of lopinavir/ritonavir may sometimes lead to allergic reactions manifested by rash, itching, swelling—especially of the face, tongue, and throat—severe dizziness, and shortness of breath [28]. The side effects of chloroquine include skin itchiness, changes in skin color, hair loss, and skin rashes [29,30]. The most common skin-related side effects of hydroxychloroquine include a bluish-gray pigmentation of the skin, transverse pigmented nail bands, and mucosal pigmentation. Diffuse morbilliform rashes and urticarial and lichenoid eruptions are less common, but



Figure 1: Irritant contact dermatitis in patient 1, a consequence of intensified personal hygiene measures. (Acibadem City Clinic Tokuda Hospital, Sofia, Bulgaria; Image provided by Assoc. Prof. Razvigor Darlenski, M.D., Ph.D.).



Figure 2: Irritant contact dermatitis in patient 2, a consequence of intensified personal hygiene measures. (Acibadem City Clinic Tokuda Hospital, Sofia, Bulgaria; Image provided by Assoc. Prof. Razvigor Darlenski, M.D., Ph.D.).

can easily be misdiagnosed as a viral-induced eruption instead of a cutaneous side effect. Hydroxychloroquine-induced erythroderma has also been reported in the literature [31]. Synthetic antimalarial drugs (SADs) can deteriorate [32] or even provoke a *de novo* appearance of psoriasis [33]. Interferon alpha can induce skin rashes, fungal infections, and edema of the extremities.

In extreme cases, irritative or allergic dermatitis can be induced by the contact, local pressure, or maceration of the skin by oxygen supply devices.

CONCLUSION

Dermatologists should take into consideration a COVID-19 infection in patients with diffuse exanthems, whether petechial, vesicular, urticaria-like,

or otherwise. Specific patterns of lesions of the skin or of mucous membranes in COVID-19 infections have not yet been defined. Dermatologists should be expecting to deal with aggravated preexisting skin diseases, as well as deal with and minimize skin problems caused by the use of personal protective equipment (PPE).

Consent

The examination of the patient was conducted according to the Declaration of Helsinki principles.

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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The profile of teledermatology consultations during the COVID-19 pandemic: An observational study

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ABSTRACT

Background: The COVID-19 pandemic has caused major disruptions in healthcare settings all over the world. During the lockdown period, teledermatology (TD) played a salient role in helping aggrieved patients receive treatment. **Material and Method:** The following is a retrospective, observational study carried out over 6 weeks at two centers in which TD consultations during the pandemic were evaluated. **Results:** A total of 300 patients (male:female = 167:133) with a mean age of 28.34 ± 7.2 years were evaluated. The most common age group was 20–40 years old (40.66%; n = 122). Almost three-fifths of the patients (58%; n = 174) consulted for the first time. Noninfectious conditions predominated (62%; n = 186), with eczema and dermatitis (19.3%; n = 57) being the most common, and with dermatophytosis and fungal infections (15.7%) being the most common among the infectious disorders. **Conclusions:** Because dermatology is a visual branch of medicine, TD has the potential to play a major role in providing dermatological care to a large number of patients in the future.

Key words: Teledermatology; COVID-19; Dermatology patients

INTRODUCTION

The novel coronavirus disease COVID-19, which emerged in the Chinese region of Wuhan, has now spread all over the world, and, as of May 2020, more than 7 million people have been affected by the SARS coronavirus 2, with more than 413,000 deaths worldwide. With the WHO having declared a state of a pandemic, Europe, the USA, South America, and South Asia have been the regions most heavily affected by the virus [1]. The sudden outbreak severely disrupted healthcare delivery all over the world, and outpatient departments were closed in a large number of countries to prevent disease transmission. In order to contain COVID-19, in-person consultations were limited during the lockdown period in various countries exclusively for emergency cases. Even dermatologists were employed on the frontline at various places [2]. During this phase, the use of telemedicine was advocated by governments and various medical associations to provide patients with treatment and follow-up consultations [3,4]. Teledermatology (TD) is a subspecialty of dermatology that utilizes information

and communications technologies (ICTs) to diagnose, monitor, treat, and educate people remotely, as well as prevent and research various dermatological cases [5]. It is believed that, originally, TD was given mainly to rural communities and soldiers in distant regions with limited access to physicians [6]. TD provides patients with continuous access to dermatologic care and is a safer way of providing medical treatment.

This study was conducted to evaluate the profile of teledermatology consultations during the period of the COVID-19 pandemic.

MATERIALS AND METHODS

The following is a retrospective, observational study carried out over a period of 6 weeks at two centers in which 300 teledermatology consultations during the COVID-19 pandemic were evaluated. All consultations were done over video-consultation platforms, and the demographic and clinical details of the patients were noted. Those patients requiring physical examination

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or specialized procedures such as skin biopsy were advised to visit an outpatient department after the resumption of in-person dermatological services.

RESULTS

A total of 300 patients (male:female = 167:133) aged between 1 month to 78 years (with a mean of 28.34 ± 7.2 years) were evaluated in the study. The most common age group applying for consultation was 20–40 years old (40.66%; $n = 122$), 0–20 years old (27.33%; $n = 82$), and 40–60 years old (23.33%; $n = 70$). Most of the patients (91%; $n = 273$) resided in an urban environment, and the majority (84%; $n = 252$) were using a cell phone for the consultation. Almost three-fifths of the patients (58%; $n = 174$) consulted for the first time, but 42% ($n = 126$) were following up on their previous outpatient department consultations. Noninfectious conditions constituted a majority of the consultations (62%; $n = 186$), with eczema and dermatitis (19.33%; $n = 58$) and acne (14.6%; $n = 44$) being the most common of the conditions presented, and with dermatophytosis and fungal infections (15.7%; $n = 47$) being the most common infectious conditions (Table 1). A total of 16 patients were advised to visit an outpatient department after the resumption of in-person services, as they required physical examination or procedures such as dermoscopy or skin biopsy.

DISCUSSION

Tele dermatology has emerged over the past few years as an important initiative, but is still not used frequently enough both by the patients and the dermatologists, both of whom having been more comfortable with

traditional face-to-face consultations [7]. Owing to the introduction of social-distancing measures and to the disruption of health services led to by the COVID-19 pandemic, telemedicine was advocated by governments and various medical associations to cater to the needs of patients. Prior to the pandemic, there were no set guidelines for the use of telemedicine in countries such as India, but now governments and medical bodies have come up with stringent telemedicine guidelines [3]. Because dermatology is mainly a visual specialty, tele dermatology can be an important tool in reaching out to patients, especially in times of a pandemic, to reduce patient load and overcrowding in outpatient departments. Owing to the great availability of smartphones and high-speed access to the Internet, patients can easily use tele dermatological services without leaving the safety of their homes. Being the need of the hour in such trying times, TD can be provided without exposing physicians and patients to the risk of viral transmission [8]. One of the recent Indian studies demonstrated a drastic increase in the use of TD from 23.5% before the pandemic to 66.9% after [9].

In our study group, young patients aged between 20 and 40 years and residing in an urban environment were the most common participants, which can be attributed to the great availability of high-speed Internet access and heightened medical awareness. In our study, dermatitis and eczema were the most common noninfectious conditions, whereas fungal infections were the most common infectious conditions, which is similar to the profile of dermatological patients in typical outpatient departments, as reported in various studies [10–12]. Most of the patients were prescribed the necessary

Table 1: The profile of dermatological conditions consulted by tele dermatology during the COVID-19 pandemic

Dermatological Conditions		No of patients (n=300)	Percentage
Non-infective (n=186)	Eczema and Dermatitis	58	19.3
	Acne	44	14.6
	Hair disorders	21	7
	Melasma	19	6.3
	Psoriasis and other papulosquamous disorders	17	5.7
	Vitiligo	12	4
	Urticaria	8	2.7
	Others	7	2.3
	Fungal infections	47	15.7
	Scabies	19	6.3
Infections and infestations (n=114)	Bacterial infections	16	5.3
	Herpes Zoster	12	4
	Warts	9	3
	Molluscum contagiosum	5	1.7
	Varicella	3	1
	Herpes Simplex	3	1

medication online, but 16 were advised to visit an outpatient department as they required a physical examination or procedures such as patch testing, skin biopsy, or dermoscopy.

Teledermatology can be an important tool in situations of a pandemic and in areas of inadequate healthcare infrastructure or lacking in dermatologists. With the great availability of smartphones and high-speed Internet access, TD can easily be used for consultation by patients from the remotest of locations, and, during the period of a pandemic, it can help in reducing the crowdedness of outpatient departments, playing an important role in lowering the risk of disease transmission. Nevertheless, teledermatology has certain limitations, for instance, if a patient requires physical examination or procedures such as skin biopsy and, hence, requires an in-person visit in an outpatient department. Additionally, TD limits the doctor's ability to show empathy, understand their patient's needs, and counsel them adequately. Lastly, there arises a chance of missing or delaying the diagnosis of incidental pathologies, especially skin malignancy [13]. While teledermatology continues to create various challenges, the COVID-19 pandemic has created a window of opportunity for the development and exploration of this technology.

Statement of Human and Animal Rights

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008.

Statement of Informed Consent

Informed consent was obtained from all patients for being included in the study.

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Purpuric rash in a girl with a positive SARS-CoV-2 IgA result

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In December 2019, China reported the first group of pneumonia cases associated with a new coronavirus, SARS-CoV-2, which now has become a pandemic.

Herein, we report a case of purpuric rash in a girl with only a positive SARS-CoV-2 IgA result, and a negative SARS-CoV-2 IgG result (negative nasopharyngeal swab).

A 5-year-old female presents herself with a purpuric rash on the trunk and, to a lesser extent, on the upper and lower limbs (Fig. 1). The cutaneous lesions observed are petechiae and macules (Fig. 2). The skin lesions persisted for over one week but with no symptoms reported.

Given the high suspicion of a viral infection with SARS-CoV-19, as well as a recent trip abroad, the patient was screened for COVID-19.

The results of real-time reverse transcription polymerase chain reaction from a nasopharyngeal swab against SARS-CoV-2 were negative. On the other hand, the patient had IgA antibodies against SARS-CoV-2, but IgG antibodies were not detected (EUROIMMUN Anti-SARS-CoV-2 ELISA).

Descriptions of petechiae resembling dengue fever appear in the literature [1]. However, the lesions we observed were more concentrated and limited and without fever.

It has been suggested that a rash with petechiae or a purpuric rash seems to be a symptom of milder

COVID-19. Differential diagnosis includes drug-induced rash and rashes due to other viral diseases.



Figure 1: Purpuric rash in a 5-year-old female.



Figure 2: Lesion in a dermoscopy image.

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Wollina described Schamberg-like purpuric eruptions and tonsillitis in a 13-year-old female [2]. Similarly to our patient, she was in good health, with no fever or malaise.

A German study evaluating three fully automated SARS-CoV-2 antibody assays yielded discordant results in three COVID-19 patients, whereas, in one COVID-19 patient, none of the investigated assays detected antibodies [3]. These assays were highly specific and sensitive in detecting SARS-CoV-2 antibodies in samples obtained 14 days or more after PCR-confirmed infection.

Authors of an international group obtained comparable results [4], emphasizing that the tests are likely to have a useful role in detecting previous SARS-CoV-2 infections if employed 15 days or more after the onset of symptoms. They may, however, carry a risk of error.

In conclusion, keeping COVID-19 in the differential diagnosis of rash is an important clue, as, otherwise, patients may be misdiagnosed.

Consent

The examination of the patient was conducted according to the principles of the Declaration of Helsinki.

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Irritant hand dermatitis during the COVID-19 outbreak

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Sir,

Coronaviruses are incapable of penetrating healthy skin tissue, which is a protective barrier against COVID-19 viral infections [1]. Contaminated hands can, however, transmit viruses to the mucosal surfaces of the eyes and the nasal and oral cavities [2]. For this reason, proper handwashing is necessary and very much important during the times of the COVID-19 outbreak.

At the same time, obsessive and compulsive behavior in hand hygiene may easily lead to irritant contact dermatitis. This is more commonly observed in some occupations than others, such as health care workers, food handlers, and hairdressers [3]. The prevalence of hand eczema in those who use excessive amounts of disinfectant solutions, detergents, and alcohol-based rubs is rising [4].

This, of course, is not to disregard hand hygiene, but to imply that a more appropriate and thoughtful handwashing process must be adopted in ensuring safety during the COVID-19 pandemic. Irritation of hands can even lead to the triggering of other dermatoses [5]. Due to the appearance of fissures and irritated eczematous areas, the threat of secondary bacterial infection becomes a concern [6].

We have seen abundant cases of atopy, psoriasis, and lichen planus with exaggerated hand dermatosis since the beginning of the COVID-19 outbreak.

Besides direct injury from chemical irritants and wet work to the hands, emotional stress (COVID-19 nosophobia) and a disquieting mental disposition help to exacerbate pruritus and inflammation of the skin.

We have seen numerous patients with hand eczema for the first time in their lives amid the coronavirus outbreak, who, despite enjoying good general health and having received PCR tests with negative results, are obsessively concerned with having acquired a coronavirus infection from family members, friends, or colleagues. Examinations of damaged skin have often revealed symptoms of eczema, such as coarse and chapped skin, scaly erythematous plaques, dry patches on dorsal surfaces, and painful fissures on the fingertips, with impending impetiginized eczema over local areas of skin injury (Fig. 1).

The measures to follow, thus, include the use of emollient creams after handwashing and less frequent handwashing sessions by using protective gloves in routine daily activities and using alcohol-based hand rubs with moisturizing ingredients (humectants) [7].



Figure 1: Painful cracks on the fingers, irritated periungual folds, and yellow crusts on eczematous lesions indicating superinfection.

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Consent

The examination of the patient was conducted according to the Declaration of Helsinki principles.

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Dermatology residents and teledermatology education during COVID-19

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Sir,

The world is now witnessing a global change as a result of the new virus SARS-CoV-2 that emerged in Wuhan, China, and spread across the globe. Changes have happened on almost every level of social functioning. We have been adopting preventative measures and changing our day-to-day habits for several months now, but we are yet to learn how COVID-19 will affect our employment and future professional careers. As for education and professional development, I believe that the most affected are those professionally occupied with medicine and for whom working with patients is the most basic way of learning and improving. Almost anywhere in the world, dermatologists now engage in telemedicine to work with patients on less urgent ailments, while hospitals only accept emergencies. Telemedicine is the use of telecommunications technologies to provide remote health care [1]. Technological advances have progressively improved the ability of clinicians to care for diverse patient populations in need of dermatological expertise. Teledermatology has proven to be a reliable consultation tool in the majority of studies [2]. In our country, where the number of dermatology patients is significantly reduced, telemedicine is evolving, and we expect it to be used for a long time to come. Because of the visual character of the dermatological specialty, teledermatology is particularly appropriate in the use of telemedicine and is becoming a major tool for dermatological consultation [2].

As dermatology residents, we are in a position to develop telemedicine and work with patients online. We perform daily examinations of less urgent cases through the Internet, but we, nonetheless, have to face and deal with

some difficulties in our practice. With us as doctors on their way to becoming dermatologists, physical contact with patients is especially important as it makes proper examination possible. The main challenge we face as residents is that the appearance of a dermatological change in real life and of such in a picture might not be alike. We also often learn that communication with patients online can be much more difficult, and the partial visibility of the body can sometimes be problematic when an examination of the whole body would be more helpful. We can say that, during the times of the COVID-19 pandemic, the importance of palpation and of the use of other dermatological instruments is what we have felt the most.

From here, we feel very much affected in the context of creating knowledge and gaining experience. Despite the impossibility of continuous learning as available before, we begin to introduce habits appropriate for the situation to reduce its negative consequences. Education has become more intensive through online courses, which we consider very fortunate. Despite the emergence of a state of global pandemic, our education is not finished and we will strive to grow in every way possible. Our professional future has been heavily affected by the COVID-19 pandemic and, in our attempts to counteract the hindrance of education, telemedicine appears as the best opportunity offered to us.

Consent

The examination of the patient was conducted according to the Declaration of Helsinki principles.

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/

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HSV infections during the COVID-19 pandemic

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Sir,

The novel coronavirus SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) producing aggressive interstitial pneumonia has rapidly spread from its origin of emergence in Wuhan, China, to numerous countries worldwide [1]. Globally, infections are still increasing in number (3,318,442 as of 11:00 on May 1, 2020), similarly to the situation in Poland (12,877 cases) and in Germany (163,009 cases).

Some departments, clinics, and even entire hospitals have been transformed into infectious and observational-infectious departments. Our dermatology department was transformed into an observational-infectious department.

Among the measures intended to promote social distancing, many schools have been closed and classes shifted to home-based distance-learning models. The first school closures began in mid-March, 2020, and some voivodeships have already closed schools for the rest of the academic year.

Data coming from recent Chinese and Italian studies demonstrate that children usually present mild to moderate COVID-19 symptoms, with a large proportion being asymptomatic. In particular, children present significantly milder symptoms of fever, cough, and pneumonia compared to adults. For this reason, children are regarded as silent carriers [2].

The course of SARS-CoV-2-induced COVID-19 is modulated by preexisting cardiovascular and metabolic disorders, which predispose to a more severe course and dangerous health issues such as obesity and metabolic associated fatty liver disease (MAFLD) [3,4].

Although the most common symptoms of COVID-19 are respiratory, there is growing evidence that tissue damage in COVID-19 is not limited to pulmonary epithelia alone [4-6].

Several Polish children, unrelated but at the center of an epidemic, were recently hospitalized with meningitic symptoms preceded by epilepsy. In addition, children with severe infectious mononucleosis were also hospitalized. All of the children were between 1 and 11 years old. COVID-19 tests were negative, and laboratory findings argued for an association with a herpes virus infection.

There is growing evidence coming from China and Japan for a possible central nervous system invasion by COVID-19, including meningitis and convulsion accompanied by unconsciousness [7,8]. In one of these cases, the RNA specific to SARS-CoV-2 was not detected in a nasopharyngeal swab, but in the cerebrospinal fluid. Anti-HSV-1 and varicella-zoster virus IgM antibodies were not detected in serum samples.

Known viruses that cause meningitis include enteroviruses, herpes simplex virus (HSV-1, but mainly HSV-2), varicella-zoster virus, mumps virus, HIV, lymphocytic choriomeningitis virus, arboviruses, and influenza viruses. HSV-2 is the leading cause of viral meningitis and the most commonly recognized infectious cause of benign, recurrent meningitis [9]. HSV infection is known to promote a thrombogenic environment by altering the properties of endothelial cell surfaces through various mechanisms [10].

It has recently been demonstrated that critical systemic coagulopathy in COVID-19 patients is related to

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deposits of terminal complement components C5b-9 (membrane attack complex), C4d, and mannose-binding lectin (MBL)-associated serine protease (MASP)-2 in the microvasculature of the lungs and skin. COVID-19 spike glycoproteins were found to be colocalized in the microvasculature with C4d and C5b-9 [11].

In the case of central nervous system symptoms and a suspicion of COVID-19, we recommend the investigation of not only nasopharyngeal swabs, but the cerebrovascular fluid as well.

Consent

The examination of the patient was conducted according to the Declaration of Helsinki principles.

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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“COVID toes” as an exceptional indicator of asymptomatic COVID-19 contracted during a forced lockdown or before a quarantine

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The coronavirus disease 2019 (COVID-19) pandemic caused by severe acute respiratory syndrome coronavirus 2 affects primarily the epithelium of the airways. With the increasing involvement of dermatologists in the management of the COVID-19 crisis, cutaneous symptoms have attracted their increasing attention. Cutaneous (skin) symptoms associated with COVID-19 in patients of all ages can be diagnosed and treated as well. Such disorders are caused by the direct action of SARS-CoV-2 on body tissues and the complement and coagulation systems, resulting in nonspecific eruptions of systemic viral infections. Knowing the cutaneous manifestations of COVID-19 may help in early diagnosis, triage of patients, and risk stratification [1].

Early studies from Central China reported low frequencies of skin disease in COVID-19 patients. Among the 1099 confirmed Wuhan cases studied, only 0.2% displayed cutaneous symptoms. With the closer involvement of dermatologists in the battle against the coronavirus pandemic, the interest in the cutaneous symptoms of SARS-CoV-2 infection has been increasing.

The first report from Northern Italy, which studied 88 COVID-19 patients, observed cutaneous symptoms in 20.4% of patients who developed cutaneous signs at the onset. Unfortunately, neither images nor histology were available.

Moreover, a recent letter from Thailand observes that almost all COVID-19 patients have all cutaneous signs.

There have been no cutaneous signs reported in patients living on the Tibetan Plateau, where the course of the disease has generally been mild. This means that temperature does not affect the incidence of the virus, contrary to the speculations often indulged in Italy that link high summer temperatures with decreasing risk of COVID-19 transmission, even in spite of no relevant scientific literature [2].

It is difficult to determine the actual reasons behind these findings. One explanation might be the involvement of dermatologists in triage, which results in a higher rate of skin diseases diagnosed. Another explanation might be that of the place of medical treatment: patients with severe diseases in intensive care units (ICUs) are likely to receive more attention for all possible clinical diagnoses compared to those with mild diseases and under outpatient care.

An important initiative in gaining useful symptomatic data has recently been undertaken by the American Academy of Dermatology (AAD) COVID-19 Task Force, which has launched an online COVID-19 dermatology registry to document the various cutaneous manifestations of COVID-19.

Chilblain-like edematous and erythematous eruptions have been observed in milder cases of COVID-19 and, in particular, in youngsters and young adults; they disappear after the infection without leaving scars. Chilblain-like eruptions are mostly asymmetrically distributed. Among more than 300 Spanish COVID-19

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patients, almost 19% showed pseudo-chilblains. They may be associated with itch and pain and, on average, disappear after 2 weeks. A group of French dermatologists collected more than 290 cases of cutaneous manifestations. The most common was chilblain-like eruption (146 cases). Most of the contributors were dermatologists engaged in private practice with milder cases of COVID-19. Chilblain-like lesions in pediatric dermatological outpatients (with the mean age of 14 years) have been noted in 25 Spanish children. None of these children had the typical symptoms of COVID-19. Two-thirds were males, and the lesions were often asymptomatic. Mild pain (22%) and itch (11%) were the associated symptoms. The lesions disappeared within 2 weeks without treatment. In Lombardy, 14 cases—11 children (with the average age of 14 years) and 3 young adults (with the average age of 29 years)—with chilblain-like eruptions were reported, with slightly more females involved than males. The authors described erythematous-violaceous papules and macules—some with bullae—and digital swelling. Mild itch was reported in three cases. In a study from Northern Italy, 63 cases of chilblain-like acral eruption were analyzed clinically with no gender preference. The median age was 14 years. The toes and feet were more often affected than the fingers and hands. Erythematous edematous lesions were the predominant feature, while blistering was observed in about half of the cases. Pain or itch was reported in 27% of the cases; pain with itch in 20.6%. In 25.4% of the cases, lesions were completely asymptomatic. The median time from the onset to clinical diagnosis was 10 days. COVID-19 was mild with pyrexia in less than 5%. In a series of 6 patients with chilblain-like acral eruptions, young patients (15–44 years) were either asymptomatic or displayed only mild COVID-19 symptoms. A 91-year-old male patient was hospitalized but recovered after 3 weeks [1-3].

That said, we had the chance to interview and, thereafter, treat 11 patients attested to have entered in contact with COVID-19 in a period between the end of January and April 2020.

At 27 °C in the springtime, they showed the “COVID toes” (pseudo-chilblains) characteristic to the colder seasons. Many of them confirmed to have entered in contact with the virus during the lockdown or in the period before the quarantine imposed by governmental rulings and directives. All of them were completely asymptomatic.

If these patients—and people in a similar condition—left lockdown, they would, conceivably, infect considerable numbers of healthy people through social interaction, walking in parks and roads, shopping, and spending time at bars and pubs.

We are sure that so-called “COVID toes” might be an excellent indicator of asymptomatic patients who never underwent proper testing. We propose such physical examination for future outbreaks of mutated coronaviruses.

Signs in the feet and fingers last for several weeks after contact with the virus. Moreover, it is reported that 37% of infected Italians have preferred to cure their COVID-19 at home instead of contacting public health services, which are often thought not to be a valuable resource.

For 6 months, no university, center of excellence, or hospital in all of Italy has proposed an official, applicable, and prepositive method of containing the virus—only palliatives, altercations, and political and commercial vaudevilles.

As far as our study goes, we treated our 11 cases successfully using an ointment of cantharus tinctorial tincture, bisabolol, collagenase, and vitamin A until complete restitutio ad integrum of pseudo-chilblains was achieved.

Cantharus tincture is essential in promoting the secretion of interleukin 6, co-involved in the occurrence of viral proteins, but we would like to highlight its potential for detecting asymptomatic patients, who constitute the most dangerous way of coronavirus transmission.

Consent

Examination of the patient was conducted according to the Declaration of Helsinki.

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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The unfolding public health crisis of transitional homelessness during the COVID-19 pandemic in India: A psychodermatologic perspective

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Sir,

Homelessness is a mounting worldwide public health concern. According to the 2011 census, 449,761 families in India live in open spaces, such as on pavements, under flyovers and staircases, in places of worship, and on railway platforms, with a significant proportion of them living in urban areas [1]. Migration from rural to urban areas in search of employment is considered an important reason for the significantly higher growth of the homeless population in Indian cities when compared to the rural areas [2]. Research indicates that a significant proportion of the homeless population, including women and people with multiple disabilities, engage in some kind of work for survival in the cities they live in, thereby contributing to the national economy [2].

To prevent the spread of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic, the Indian government enforced complete lockdown at the national level on March 24, 2020, for 21 days. Although the lockdown achieved its desired effect of flattening the epidemic curve for a short period, it precipitated a considerable social and public health crisis, mainly transitional homelessness among the migrant population. In spite of the disadvantageous financial conditions of the migrant population due to the absence of paid work, several landlords were reported to have forced them to pay the rent, ultimately leaving them with no other choice but to vacate their place of residence. Homelessness, coupled with hunger, forces them to walk for days for hundreds of kilometers together with their

families, including children, back to their places of origin. Multiple images of ulcers and fissures on bare feet have surfaced in media. Many of the transitional homeless migrants were stopped at districts and state borders and quarantined in overcrowded government shelters, where social distancing is nearly impossible.

Many of these shelters also house the chronic homeless population along with migrant laborers, which increases the health risk further. Research data indicates that a significant proportion of chronic homeless people in India are suffering from some form of psychiatric illness and intellectual disability [3]. It is reasonable to speculate that, due to their psychiatric morbidities, many of them may not properly understand the magnitude of the current crisis and may not practice disinfection and social distancing even in shelters with a smaller number of occupants. Multiple studies have found that the prevalence of dermatological conditions is significantly higher among shelter home inmates with the most prevalent dermatoses infectious in nature, such as tinea pedis, body louse infestation, scabies, and impetigo [4,5]. There is an ongoing epidemic of treatment-resistant superficial mycoses in India and the process of migration and homelessness may amplify it [6]. This will, in all likelihood, increase the burden of already overworked dermatologists, aggravating their professional burnout [7].

All the above indicates that transitional homelessness has become a significant public health crisis in dealing with the COVID-19 pandemic in India, which proper planning, empathy, and adequate financial support

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could have avoided. There are many important lessons to learn from this crisis by other developing countries fighting the COVID-19 outbreak.

Consent

The examination of the patient was conducted according to the principles of the Declaration of Helsinki.

The authors certify that they have obtained all appropriate patient consent forms, in which the patients have given consent for images and other clinical information to be included in the journal. The patients understand that their names and initials will not be published and due effort will be made to conceal their identity, but that anonymity cannot be guaranteed.

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Vampirism and drakulism: A both cosmetic and curative syncretic approach to avoid future COVID-19 contacts

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Sir,

Clinical vampirism, more commonly known as Renfield's syndrome, is an obsession with drinking blood. The earliest formal presentation of clinical vampirism to appear in the psychiatric literature, with the psychoanalytic interpretation of two cases, was contributed by Richard L. Vanden Bergh and John F. Kelley [1,2]. As the authors point out, in 2010, over 50,000 people have become addicted to drinking blood. Many medical publications concerning clinical vampirism can be found in the literature of forensic psychiatry, with the unusual behavior reported as one of many aspects of extraordinary violent crimes [3-5].

Renfield's syndrome typically occurs in three phases. During phase one, called autovampirism or autohemophagia, the sufferer drinks their own blood, often cutting themselves in the process. Phase two, called zoophagia, involves eating live animals or drinking animal blood, and can also involve obtaining animal blood for consumption from a butcher or slaughterhouse. During phase three, called true vampirism, the sufferer directs their attention toward other human beings, possibly, stealing blood from hospitals and blood banks or drinking blood directly from a living person. Some suffering from Renfield's syndrome commit violent crimes, including murder, when in true vampirism.

Clinical vampirism was named after the mythical vampire, and is a recognizable, although rare, clinical entity characterized by periodic compulsive blood-

drinking, affinity with the dead, and uncertain identity. Hypothetically, it is the expression of an inherited archaic myth, the act of taking blood being a ritual that gives temporary relief. Since ancient times, vampirists have given substance to belief in the existence of supernatural vampires.

The vampire myth has, for millennia, spread widely in one form or another. Tales of the undead with a penchant sucking the life from the living were told even in ancient Egypt, long before Vlad III or Bram Stoker. The specifics of the legend vary in different parts of the world, but the core tale, the one involving blood-drinking revenants, comes up again and again. Modern scholars have looked to the medical literature for an explanation of the universality of the myth, and, in some cases, suggested that what we know as vampirism is, in fact, established on the symptoms of known diseases. However, linking a feared mythical creature with an actual human disease—and the actual people suffering from it—inevitably, leads to consequences.

The most widely known vampire mythology today draws from Slavic folklore and 18th-century stories. These stories tend to involve a recently deceased family member who, upon exhumation, did not seem to have decomposed entirely, and now appears to be full of fresh blood. This was still the popular thinking in early-19th-century New England. Novels such as *Carmilla* (1871) and *Dracula* (1897) featured vampires that were mobile, rather underground, and undead. Eventually, light sensitivity and aversion to garlic were introduced to the canon of vampire folklore. In

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a 1985 conference talk, Canadian biochemist David H. Dolphin proposed that vampire and werewolf myths drew from a disease known as porphyria, the New York Times reports. The symptoms of congenital erythropoietic porphyria include, in particular, light-sensitive skin, lack of heme—a component of hemoglobin whose lack can produce the drive to bite others and drink their blood—and sensitivity to garlic. It was not the first time, however, that Dolphin had suggested that link, mentioning it in a 1982 speech to the Royal Society and again during a 1984 appearance on NBC.

There are three types of clinical vampirists:

- Vampirists who murder the victim and then suck their blood (sanguinarians),
- Vampirists who suck the victim's blood and then massacre them,
- Vampirists who suck their own blood (autovampirists).

There also exists a subtype who takes pleasure in drinking animal blood; to this category belong cannibales, people organizing black masses and voodoo rituals, as in Louisiana, some regions of Africa, and Mongolia.

All clinical vampires dislike sunshine, hide from all kinds of light—similarly to albinos—and are characterized by porphyria tarda, corresponding to an aberrant overload of iron in the liver due to genetic dysmetabolism. Clinical vampires are also characterized by exceptionally white skin and bloody gums, although not by Count Dracula's prominent canines.

Porphyrias, a group of eight known blood disorders, affect the body's molecular heme-producing mechanisms, with heme being a component of hemoglobin, an oxygen-transporting protein. By binding to iron, heme gives blood its characteristic red color.

The different genetic variations that affect heme production give rise to different clinical manifestations of porphyria, including one variation that may be responsible for the invention of vampire folklore.

Erythropoietic protoporphyria (EPP), the most common variation of porphyria to occur in childhood, sensitizes the skin to light to such an extent that a prolonged exposure to sunshine can spawn painful, disfiguring blisters.

This paper aims to describe the direct and indirect treatment of vampirism and drakulism, without the use of Panhematin or Givlaari and keeping in mind that an excess of iron in the liver must be chelated anyway with EDTA solution and that, because EDTA may chelate calcium, administration of calcium gluconate to compensate for the loss of calcium is necessary. It must be stressed, moreover, that EDTA helps to chelate lead and other heavy metals inhaled because of air pollution or ingested in food.

Moreover, very high dosages of vitamin C, or ascorbates, can afford such iron deprivation in liver mitochondria.

Vitamin C, an excellent reducing agent, aids in increasing absorbable ferrous iron in iron-deficiency anemia. However, even considering that vitamin C is an efficient antioxidant, it is still uncertain whether vitamin C provides protection against liver damage caused by excess iron and whether mitochondria are the target effectors of such liver damage [6].

For these reasons, two cases of vampirism are to be treated using the following strategy: administration of 200 ml of EDTA in 0.5 M aqueous solution every 3 hours, 1.5 g calcium carbonate twice a day, and 15% palmitoyl ascorbate solution 3 times a day to reach the ultimate dosage of 2.5 g/day [7] and permission to consume 300 ml of stassanized horse blood a day.

The volunteers were:

- a) middle-aged nurse who used to steal blood from the hospital where she worked to drink it at home,
- b) young butcher who enjoyed the practice of drinking the blood of hens and pork during slaughter.

After the completion of two full weeks of the treatment, the volunteers showed normal skin and gums and did not feel compelled to consume human blood nor bite other humans or animals.

Consent

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The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Summer in time of Coronavirus disease 2019: How to use hand sanitizers?

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Sir,

Since Pandemic COVID-19 began, disinfecting and hands washing with soap or alcohol-based hand rubs (ABHRs) have been among the most economical, easiest, and essential measures to prevent the virus spread. Both methods, hand washing or the use of ABHRs, have proven their effectiveness on SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2). After 4 months of using these products, several side effects have been reported, especially for health workers. In this article, we will try to deduce some recommendations for hand hygiene (Table 1), useful especially as summer begins.

SOAP

Over the years, handwashing with soap and water has been considered a measure of personal hygiene; and now, it became a ritual to avoid contamination during the COVID-19 pandemic.

Soap works by dissolving the lipid membranes of microbes, then making them inactive. It has been demonstrated that water containing 1.00% powdered is useful in removing viruses and deactivates their envelope, including coronavirus.

The soap must be obtained from a liquid dispenser; the bar form is not recommended since it may contain germs. However, other studies have shown that the risk of transmitting microorganisms by washing hands with previously used bar soap is negligible (1).

ALCOHOL-BASED HAND RINSES (ABHRs)

According to WHO, the (ABHR) preparation must contain (2):

- Alcohol (Ethanol, propanol): active component in the formulation which has an antimicrobial activity capable of denaturing and coagulating proteins.
- An antibacterial agent (hydrogen peroxide (H₂O₂), in low concentration, used only for the inactivation of bacterial spores potentially present in the bulk product and the recipients.
- Glycerol or other emollients that help prevent drying of the skin.
- Distilled or boiled and cooled water.
- The addition of other ingredients or perfumes is not recommended.

A recent study has confirmed the effectiveness of these WHO-recommended formulations on Sars-CoV-2 (3).

Three formats of the ABHR are recognized (gel, liquid, or foam); some studies have tried to compare their effectiveness and their virucidal action. It has been suggested that, for the adequate dose, the liquid form is much more acceptable since it is faster to dry and gives a less sticky feeling. The gel seemed to be more moisturizing. The foam format combined the two properties (4).

There is no precise volume of application; it varies between 1.5 and 3ml, which is equivalent to one pump from the foam bottle. Nevertheless, the quantity that is recommended by The World Health Organization is one that can cover all surfaces of the hand (2).

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Table 1: Recommendations

It recommends to
<ul style="list-style-type: none"> - Handwashing with soap and water for 30s if hands are dirt and soil. - Prefer alkaline soap and cold water. - Use the liquid soap and, if available, the personal bar soap. - Between handwashing with soaps, use ABHRs to promote the regeneration mechanism. - Apply the ABHRs on healthy skin. - Use a moisturizer after each wash or as many times as possible during the day. - Apply ABHRs on dry skin. - Prefer the gel form rather than liquid. - Apply ABHRs for 30s and with an amount that covers the palms of the hands - Apply alcohol more often in summer than handwashing since it is less drying and not phototoxic. - There is less contact with a contaminated object or surface at the beach; hand disinfection should be less, prefer alcohol or individual bar soap.
It is not recommended to
<ul style="list-style-type: none"> - Wash hands more than 15 times a day. - Apply ABHRs on altered skin; a burning sensation requires stopping or reducing use with adequate management - Wash hands with water after applying ABHRs

Summer season begins, and some dermatologists reported that the sun exposure after the application of (ABHRs) could cause burns or irritation. Still, the components of (ABHRs) are not photo-sensitizing; a study (5) realized to compare the local tolerance of alcohols commonly used an alcohol-based hand rubs for hand hygiene (ethanol, propanol) have confirmed this fact.

Hand washing after ABHRs application is not recommended, water is capable of removing superficial sebum layer as well as eliminating the emollients associated with ABHRs for hydration.

Consent

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Overwhelmed healthcare services and the prevailing threat of COVID-19 infection among healthcare workers: Implications on dermatology residency programs

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Sir,

The coronavirus disease 2019 (COVID-19) pandemic has now restricted hospital services to emergency care. The cutback of routine patients to the department of dermatology has aimed to reduce the exposure to healthcare workers (HCW) and transmission of infection from infected HCWs to patients.

COVID-19 inpatients with skin manifestations are being evaluated in a limited manner by dermatologists based on images. Dermatologic diagnosis relies heavily on visual aid, especially a closer view of up to 20 cm for diagnosis along with relevant clinical history taking. The limitation of consultations has severely impacted case-based and bedside learning for dermatology residents. Teledermatology facilities may be utilized for distant and close-up views of lesions and corroboration with relevant medical history taking to overcome this loss of learning experience [1].

Procedural dermatology has also taken a hit as most procedures, such as thread lifts, fillers, Botox injections, chemical peels, and laser procedures, involve the face and close contact with the patient; therefore, it has been put on hold. In the meantime, residents can use online training modules available on their dermatology society's website to hone their skills on existing and newer procedures.

Dermoscopy, which relies on even closer contact with the patient, has been discontinued indefinitely

by the advice of society guidelines. Precautionary measures in performing dermoscopy include wearing protective equipment by both the patient and the doctor, disinfecting the lesional areas and the dermatoscope with 70% isopropyl alcohol for one minute before and after its use, and preferring noncontact ways of dermoscopy [2].

There is a risk of developing sudden respiratory distress among asymptomatic patients in dermatology wards. Thus, residents should be able to respond to such emergency conditions before the arrival of emergency teams [3]. A short-duration online refresher course designed by a pulmonologist can help to meet the sudden need for emergency training and to provide crucial first response to patients before the arrival of the emergency and pulmonary care team.

Residents are now required to wear personal protective equipment (PPE), which are known to cause cutaneous damage after long hours of use such as erosions, ulcers, and indentations, as well as exacerbate other skin conditions, such as acne and seborrheic dermatitis [4]. Gloves of all three types—latex, nitrile, and plastic, especially the powdered varieties—have been associated with contact dermatitis. Skincare regimen, such as moisturizing before using protective equipment, using face shields instead of goggles, preferring powder-free gloves, and washing hands after using gloves, are some recommendations that can help in keeping the skin of HCWs healthy [5,6]. Counseling programs on cutaneous damage due to PPE are a useful aid as well.

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Lastly, the COVID-19 pandemic has generated fear among HCWs across all specialties, considering the deaths of several frontline HCWs in nations such as China, Italy, and the U.S. Dermatology residents are working toward screening and sample collection, management of inpatients with influenza-like illness (ILI) and with skin diseases, and management of confirmed COVID-19 inpatients. The looming threat of infection and a subsequent possible life-threatening situation and increased risk of exposure to loved ones, coupled with a global shortage of PPE have led to states of panic, anxiety, and uncertainty among residents [7]. Social media platforms working toward mental support and psychological help can help to address the mental health issues of HCWs working on the frontline.

In conclusion, COVID-19 has changed dermatology residency to a great extent and, since the medical literature on COVID-19 is evolving continuously, teaching methodologies should evolve simultaneously. All failure is failure to adapt; all success is successful adaptation.

Consent

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