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PREVALENCE OF PITYRIASIS VERSICOLOR AMONG STUDENTS IN ASSOCIATION WITH RELOCATION TO A COLDER CLIMATE

Introduction

Pityriasis versicolor is a common superficial fungal infection caused by Malassezia yeasts, with prevalence exceeding 40% in tropical regions compared to only 1−5% in temperate climates [1]. The condition produces characteristic hypopigmented or hyperpigmented patches on the skin due to fungal metabolites that disrupt melanin synthesis [2]. Young adults are disproportionately affected, with peak incidence during puberty when sebaceous gland activity is highest [3]. In colder climates, the condition demonstrates marked seasonal variation, becoming more noticeable in summer when tanned skin contrasts with hypopigmented patches. Pathogenesis involves host factors including hyperhidrosis, oily skin, immunosuppression, and genetic predisposition, combined with environmental conditions such as high temperature and humidity that promote fungal overgrowth [4, 6].

Although generally benign, Pityriasis versicolor causes considerable cosmetic concern with high recurrence rates (60−80% within two years) [5]. The interplay between climate and disease activity is particularly relevant for students migrating from tropical to colder countries, as environmental changes may significantly alter disease course. These transitions are often accompanied by lifestyle modifications including changes in clothing, bathing frequency, and physical activity which may further impact fungal growth. This article explores the impact of relocating to a colder climate on Pityriasis versicolor among international students and examines the environmental and behavioral factors influencing disease outcomes in this population.

Goal

The aim of this study is to analyze the impact of relocating to a colder climate on the incidence of Pityriasis Versicolor among students.

Material and methods of research

A self-administered questionnaire survey was conducted among students aged 18 to 35 years, with a total of 92 participants comprising 60 females and 32 males. The sample represented a diverse range of nationalities, including 66 Sri Lankans, 11 Nigerians, 8 Indians, 2 Kuwaitis, 4 Maldivians, and 1 Syrian. All participants currently reside in colder countries, with 56 in Belarus, 11 in Australia, 4 in Canada, 6 in Germany, 7 in the UK, and 7 in New Zealand. The questionnaire, created using Google Forms, consisted of 20 questions. This survey aims to investigate the prevalence of Pityriasis versicolor and to determine whether relocating from a hotter to a colder country impacts the disease among students who have the condition.

The results of the research and their discussion

A total of 36 participants were diagnosed with Pityriasis versicolor. Although the study sample contained more females overall (n=60) than males (n=32), the prevalence of the condition was slightly higher among male participants. Specifically, 40.6% (13 out of 32) of males were affected, compared to 38.3% (23 out of 60) of females. This indicates that within this sample, the condition was marginally more common in males, despite the higher absolute number of female cases. The condition was overwhelmingly observed in younger adults, with the majority falling into the 18–24 age

(n=17, 47.2%) and the 25–30 age (n=16, 44.4%), while only 3 participants (8.3%) were aged 31–35. Regarding geographic origin, the vast majority of affected individuals came from Sri Lanka (n=26, 72.2%), followed by smaller numbers from India (n=4, 11.1%), the Maldives (n=3, 8.3%), and Nigeria (n=1, 2.8%). In terms of current residence, most participants were living in colder climates, with Belarus being the most common location (n=20, 55.6%), followed by Australia (n=6, 16.7%), New Zealand (n=4, 11.1%), the United Kingdom (n=3, 8.3%), and Canada (n=2, 5.6%).

The clinical characteristics of the condition among these 36 participants revealed several notable patterns. In terms of skin type, Pityriasis versicolor was most commonly reported in individuals with Type III (Medium white to light brown) skin, affecting 16 participants (44.4%), closely followed by Type II (Fair or light skin), affecting 15 participants (41.7%). Fewer cases were seen in Type IV (deeply pigmented) skin with 2 participants (5.6%), and Type I (pale, always burns) with 3 participants (8.3%). Interestingly, while all 36 participants confirmed they had experienced symptoms of the condition, only 19 (52.8%) reported having been formally diagnosed with it in the past, meaning nearly half (47.2%) had never received an official diagnosis. The appearance of the patches varied, with pure white discoloration being the most common presentation (n=10, 27.8%), followed by pink patches alone (n=7, 19.4%), brown patches alone (n=7, 19.4%), and various combinations such as white and pink (n=5, 13.9%) or white and brown (n=3, 8.3%). The distribution of these patches on the body was most frequently described as involving multiple locations including the back, face, chest, and neck simultaneously (n=16, 44.4%). When patches were confined to a single area, the most common sites were the chest and neck (n=8, 22.2%) and the back (n=7, 19.4%).

Regarding treatment-seeking behavior, the majority of participants (n=21, 58.3%) had never sought medical care for their condition prior to relocating. Among those who did, 13 sought treatment occasionally, while only 2 did so on a regular basis. With respect to treatment efficacy, spontaneous resolution was the most frequently reported outcome, occurring in 11 participants. Topical antifungal agents alone, as well as combination therapy comprising both topical and oral antifungal medications, were each reported as effective by 8 individuals (22.2%). Home remedies were effective for 5 participants (13.9%), whereas oral monotherapy was effective in only 3 cases (8.3%).

Analysis of individual patient data revealed clinical improvement in the majority of participants (n=24, 66.7%) after relocation to a colder climate. Improvement included significant decrease in severity (n=11, 30.6%), slight decrease (n=8, 22.2%), and complete resolution of outbreaks (n=5, 13.9%). Seven participants (19.4%) remained stable, and only five (13.9%) experienced slight worsening. Improvement rates were consistent across all durations of residence, ranging from 66.7% to 69.2% in cohorts with more than one year of follow-up. When stratified by baseline severity, which included mild (n=14), moderate (n=15), and severe (n=7) cases, improvement was observed in 64.3%, 66.7%, and 71.4% of cases, respectively. These findings confirm that relocation to a colder climate is associated with symptomatic improvement in the majority of patients, independent of prior disease severity or length of residence.

Analysis of risk factors for Pityriasis versicolor after relocation revealed several notable patterns. Of participants with persistent patches, 21 (58.3%) reported lesions became most noticeable in summer, suggesting UV exposure increases visual contrast rather than fungal activity. Despite sweating creating conditions for Malassezia, exercise frequency was low with 14 participants (38.9%) rarely engaged in sweat-inducing activities, none exercised daily, and 21 (58.3%) reported decreased sweating overall. While heavy layering in 11 participants (30.6%) could trap moisture, frequent showering (80.5%, n=29) may offset this risk. However, incomplete drying after showering in 12 participants (33.3%) may help maintain skin moisture. Notably, 16 (44.4%) were unaware of climate's link to fungal conditions before relocating, highlighting a significant educational gap.

Conclusion

In conclusion, relocating to a colder climate appears to play a beneficial role in reducing the severity of Pityriasis versicolor among affected students. Risk factors identified for the condition

in this study population, such as origin from tropical regions, younger age (18–30 years), and lighter skin types (Types II and III) highlight the vulnerability of specific demographic groups. Furthermore, modifiable risk factors in the post-relocation setting, including reduced sweating frequency, incomplete post-shower drying practices, and limited awareness of the link between climate and fungal skin conditions which demonstrates the significant relationship between environmental and behavioral factors and disease activity in students. Addressing these factors by promoting adequate drying after bathing, maintaining good hygiene practices, and educating students from tropical regions about the potential impact of climate on fungal skin conditions can significantly improve disease outcomes and enhance overall skin health in this population.

LITERATURE

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TRANSITIONING DERMATOLOGICAL HEALTH: CHANGES IN SKIN AND HAIR CONDITIONS AMONG ASIANS ADAPTING TO THE EUROPEAN CLIMATE

Introduction

The global mobility of populations has made the dermatological sequelae of climatic migration a subject of increasing clinical relevance. For individuals of Asian descent transitioning to European environments, this shift represents more than a cultural change; it is a profound physiological stressor on the integumentary system. The Fitzpatrick skin type changes across Asia and Europe, primarily due to genetic variations and differing levels of historical sun exposure, with Europeans generally having lighter skin types (I–III) and Asians exhibiting a range from Type III to Type V [4].

Table 1 – The Fitzpatrick skin type scale [4]

Skin type	Skin Range
1	Pale white skin, blue/green eyes, blond/red hair
2	Fair skin, blue eyes
3	Darker white skin
4	Light brown skin
5	Brown skin
6	Dark brown or black skin