

Adolescents' Knowledge and Attitudes Related to Hand Eczema: A Cross-Sectional Study

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Background: Hand eczema (HE) is a common inflammatory skin disease occurring in subjects of any age. Literature data on knowledge of HE in different age-groups are scarce.

Purpose: To evaluate knowledge and attitudes related to HE among adolescents.

Methods: A total of 258 high school students were invited to participate in this project. A specially designed questionnaire created on the base of previous studies was used to assess adolescents' knowledge of HE. HE was self-reported answering the validated single question "Have you ever had hand eczema?"

Results: Data from 243 students (94.2% response rate) were obtained for final analysis. There were 117 (48.1%) females and 126 (51.9%), males with a mean age of 16.0 ± 1.7 years. Sixty-eight students (28%) reported a personal history of HE, and 32.8% declared having knowledge of HE. More females than males ($P=0.023$) declared that they knew what HE was (39.3% and 26.2%, respectively). Hand cream was used on a regular basis by 49% of adolescents. Females used hand cream more frequently ($P<0.001$) than males. No difference in declared knowledge of HE was found between subjects with and without a personal history of hand lesions. Students declaring having adequate knowledge of HE used hand cream more commonly ($P=0.045$).

Conclusion: Although HE is a common disease in the general population, including adolescents, less than a third of subjects were aware of this entity. Almost half were using hand cream, but interestingly, personal history of HE did not increase the regular application of hand cream.

Keywords: hand eczema, children, adolescents, knowledge

Introduction

Hand eczema (HE) is a frequently occurring disease with a lifetime prevalence in the general population of 14.5% and a point prevalence of 4%.¹ HE can appear at any age, affecting also adolescents. The self-reported lifetime prevalence of HE is 9.7%–10.4%.^{2,3} HE can occur due to excessive or prolonged exposure to irritants and/or allergens. An atopic background is frequently observed.⁴ The severity of the disease can range from mild to severe, and the course can be acute to chronic. According to European guidelines,⁵ chronic HE is defined as HE lasting >3 months or when the lesions reoccur at least twice within 12 months. Treatment of HE varies according to the clinical manifestation and includes topical corticosteroids, phototherapy, oral retinoid–alitretinoin, and systemic immunosuppressants. Avoidance strategies should be implemented, as well as continuous emollient therapy.⁶ During the recent COVID-19 pandemic, recommended hand hygienic procedures (frequent washing, using disinfectants) contributed to increased incidence of HE.^{7,8} Many people suffered from hand lesions of various intensity. HE became a hot topic of special interest to the whole population.^{7,8} The aim of the current study was to assess adolescents' knowledge of HE, with special attention paid to the use of hand cream. We believe that the obtained results could be important for future professional prevention and management programs.

Methods

This cross-sectional study was run on 258 high school students in Wrocław, Poland. The Ethics Committee of Wrocław Medical University approved the project (KB-663/2022) and the study was conducted according to the Declaration of Helsinki. All adult subjects gave written informed consent to participate in the project. For students aged <18 years, consent was obtained from at least one parent. A specially designed questionnaire was used to collect demographic data, including age and sex, from all participants. A single question — “Have you even had hand eczema?” — used in numerous previous studies⁹ was employed to self-assess personal history of HE. Knowledge of HE was studied with a questionnaire designed based on modified questions proposed by Letule et al¹⁰ and Topal et al¹¹ (Appendix 1). Statistical analysis was performed with SPSS 26e. Quantitative variables were assessed with the Mann–Whitney *U* test, and qualitative data were analyzed with χ^2 tests. $P < 0.05$ was considered statistically significant.

Results

In sum, 243 of 258 invited individuals completed the study questionnaire. This gave a high response rate of 94.2%. The study group consisted of 117 (48.1%) females and 126 (51.9%) males. Their age ranged from 14 to 18 years, with a mean age of 16.0 ± 1.7 years. Positive personal history of HE was given by 68 students (28.0%), while 118 (48.6%) had heard of HE and only 79 (32.8%) declared that they knew what HE was. Significantly more females (54.7%) than males (42.9%) were aware of HE ($P = 0.047$). Similarly, more females than males ($P = 0.023$) declared having knowledge of HE (39.3% and 26.2%, respectively; Table 1). A total of 119 participants (49.0%) stated that they used hand cream regularly. Although numerically more females used hand cream, the difference between the sexes did not reach statistical significance. However, females used it more frequently ($P < 0.001$) than males (Table 1). There was no difference in the declared knowledge of HE between those with positive and negative personal history of HE (Table 2). Although we were not able to demonstrate a difference between the groups for the question “Do you use hand cream regularly?”, interestingly, patients with no personal experienced with HE used hand cream significantly more often ($P = 0.017$) (Table 2). Moreover, students who declared having knowledge of HE used hand cream more commonly ($p = 0.045$) than those without such knowledge (45 [59.5%] and 72 [43.9%], respectively). There was no difference between subgroups concerning the frequency of application of hand cream (detailed data not shown).

Concerning prevention strategies for HE shown on a photograph, 86.8% of students pointed out the importance of avoiding irritating substances and 76.9% the avoidance of allergens, while 75.6% considered usage of hand cream beneficial in prevention of HE flares. Almost a third marked frequent handwashing as an HE-prevention strategy. The answers were delivered without any significant difference between females and males (Table 3).

Table 1 Hand eczema knowledge and attitudes in adolescents

| Question | Total 243 n (%) | Females 117 n (%) | Males 126 n (%) | P |
|-------------------------------------|-----------------------|-------------------------|-----------------------|--------|
| Have you ever heard of hand eczema? | 118 (48) | 64 (54.7) | 54 (42.9) | 0.047 |
| Do you know what hand eczema is? | 79 (32.8) | 46 (39.3) | 33 (26.2) | 0.023 |
| Do you use hand cream regularly? | 119 (49.0) | 61 (52.1) | 55 (43.7) | NS |
| If yes, how frequently? | | | | |
| Once daily | 31 (26.1) | 21 (32.8) | 10 (18.2) | <0.001 |
| Several times a day | 33 (27.7) | 21 (32.8) | 12 (21.8) | |
| Once weekly | 22 (18.5) | 2 (3.1) | 20 (36.4) | |
| Several times a week | 33 (27.7) | 20 (31.3) | 13 (23.6) | |

Table 2 Hand eczema knowledge and attitudes in adolescents with and without personal history of hand lesions

| Question | Personal history of hand eczema | | P |
|---|---------------------------------|--------------------|-------|
| | Yes 68 n (%) | No 175 n (%) | |
| Do you know what hand eczema is? | 27 (39.7) | 52 (29.7) | NS |
| Do you use hand cream regularly? If yes, how frequently? | 34 (50.0) | 85 (48.6) | NS |
| Once daily | 7 (20.6) | 24 (28.2) | 0.017 |
| Several times a day | 4 (11.8) | 29 (34.1) | |
| Once weekly | 8 (23.5) | 14 (16.5) | |
| Several times a week | 15 (44.1) | 18 (21.2) | |

Table 3 Hand eczema–prevention strategies used by adolescents

| | Total 243 n (%) | Females 117 n (%) | Males 126 n (%) | P |
|---|-----------------------|-------------------------|-----------------------|----|
| Frequent handwashing | 77 (32.1) | 36 (30.8) | 41 (32.5) | NS |
| Avoidance of allergic substances/allergens | 178 (76.9) | 86 (73.5) | 92 (73.0) | NS |
| Avoidance of irritating substances | 202 (86.8) | 95 (81.2) | 107 (84.9) | NS |
| Sun exposure | 15 (6.4) | 9 (7.7) | 6 (4.8) | NS |
| Avoidance of sun exposure | 71 (30.3) | 34 (29.1) | 37 (29.4) | NS |
| Usage of hand cream | 177 (75.6) | 89 (76.1) | 88 (69.8) | NS |
| None of the above | 6 (2.6) | 1 (0.8) | 5 (3.9) | NS |

Discussion

HE has a variety of clinical manifestations. In many subjects, it has a chronic and relapsing course.¹² Visibility of skin lesions with subjective symptoms like itch and pain markedly contribute to the vast psychosocial burden of subjects suffering from HE.^{13,14} It has been suggested that awareness of HE has increased during recent years,¹⁰ and numerous recommendations and guidelines for the management of HE has been created.^{15,16} As a common occupational skin disease, HE has important socioeconomic impact.^{17,18} Many studies on HE have concentrated mainly or exclusively on the risk groups, such as hairdressers or health-care workers.^{19–22} Especially during the COVID-19 pandemic, special attention was paid to health-care workers.^{21,22} Studies on HE knowledge and attitudes are scarce and limited mainly to selected high-risk HE populations.²³ Assessing HE knowledge has rarely been performed in the general population.^{10,11,24} We were unable to find any such study run among adolescents. We clearly showed that only a third of adults declared having knowledge of HE. Using the same question “Do you know what hand eczema is?”, Letule et al¹⁰ demonstrated that 57.7% of adult individuals from general medical practices and 66.2% of subjects from dermatologic practices provided a positive answer to this question. The observed difference might be due to different populations studied. It is important to underline that we concentrated our study on younger subjects. Similarly to the study by Letule et al,¹⁰ in our survey more females than males declared HE knowledge; however, in contrast to research performed in adults, we were not able to find a difference in HE knowledge between those with positive and negative personal history of hand lesions.

Hand cream usage is recommended to prevent the appearance and flares of HE.¹⁵ In our cohort of subjects, almost half of adolescents applied hand cream regularly. Among those using this type of prevention, females used cream more frequently than males. This is in agreement with previous observations. Similarly to Letule et al,¹⁵ we also showed that participants that knew about HE used cream more frequently. Adult subjects who had previously suffered from HE themselves were using hand cream more commonly than those without a personal history of it. However, this was not the case in our adolescent study. Interestingly, in our previous study on HE perception in adolescents, we did not find any difference in perceptions between students with positive and negative personal history of HE.²⁵ This again underlines the fact that both populations — adolescents and adults — are very different and require separate studies. In the current project, we also paid attention to knowledge of HE-prevention strategies. Although declared knowledge of HE among our group was rather low, more than two-thirds of them indicated avoidance of allergens and irritants, as well as usage of hand cream, as beneficial practices. These percentages are similar to those reported in previous studies on adults.¹¹

Limitations

We are aware of the limitations of our study. It was carried out in a single center; therefore, extrapolation of the results to different geographical regions should be made with caution. The study was based on self-reported HE diagnosis, and due to the implied methodology, one cannot completely exclude other conditions occurring on the hands, eg, ringworm or autoimmune disease. Moreover, the lack of open questions on preventing strategies should be considered an important limitation of our instrument. We do hope that our results can serve as a basis for future international, multicenter studies assessing attitudes and knowledge of HE among young patients.

Conclusion

The results of this study indicate the need to provide structured educational programs on HE. Raising awareness of the exacerbating factors and prevention strategies will definitely be of value for adolescents.

Ethics

The study was approved by the Ethics Committee of Wrocław Medical University, Wrocław, Poland (KB-663/2022).

Consent

Informed written consent was obtained from the patient for the image to be included in the article.

Disclosure

Professor Jacek C Szepietowski reports personal fees from UCB, Vifor, Novartis, Sanofi-Genzyme, Leo Pharma, Pierre-Fabre, Eli-Lilly, and Janssen-Cilag outside the submitted work. The authors report no other conflicts of interest in this work.

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