

The Utility of a Questionnaire Proposal as an Analytic Diagnostic Tool in Healthcare Providers Occupational Hand Eczema

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ABSTRACT

The aim of this study was to estimate the prevalence of self-reported work-related and occupational hand eczema, as well as associated risk factors in hospitals and out-patient clinics in Romania. A standardized questionnaire was addressed to health professionals from different medical fields. Out of 245 healthcare providers who completed the survey, 235 were women (95.9%), and 243 were working more than 8 hours/day in hospitals (99.18%). Hand eczema was self-reported and documented in almost one third of the nurses (33.49%), the most frequently involved trigger factor being powdered latex gloves. A total of 207 (84.48%) individuals denied any present or past allergic diseases. Only one nurse declared that severe hand eczema was the cause of losing her job at the hospital. Exposure assessment is essential for the diagnosis of work-related or occupational skin diseases.

Keywords: occupational hand eczema, healthcare providers, questionnaire

INTRODUCTION

Occupational skin diseases should be a priority public health issue since they represent up to 30% of occupational diseases.

The recognition of occupational skin diseases is important for improving prevention and patient management, due to their significant economic and social impact on each individual and the society. Occupational hand eczema among

health care providers has a great impact on their quality of life and professional activity.

The aim of this study was to gather information on hand eczema and its risk factors from persons working in hospitals and outpatient clinics in different cities in Romania.

MATERIAL AND METHOD

The study was based on a self-reported questionnaire addressed to employees of medical units, focusing on hand eczema, trigger factors, associated diseases, and protective measures.

The questionnaire was anonymous, simple, short (three pages), easy to understand and to fill in, with yes or no answers to specific questions, and it concentrated on clinical aspects related to direct work exposure.

Details about work aggravating factors, such as contact with chemical agents (detergents, disinfectants, soap, liquid soap, shampoo and other personal hygiene products, or skin cleanser), use of latex or other types of gloves (plastic, cotton, natural, or synthetic rubber), other suggestive exposures, and frequency of hand washing, were considered.

The medical history of the persons enrolled in the study was also recorded, especially the presence of an atopic and allergic background, as well as the presence of comorbidities, chronic treatments or other exposures such as UV radiation.

RESULTS

A total of 1,000 questionnaires were distributed to employees from all job groups and all departments in hospitals and ambulatory units from main cities in Romania. However, only 245 questionnaires were validated, yielding a positive response rate of 24.50%. This small percentage confirms the possible underestimation of the prevalence of occupational or work-related hand eczema among healthcare providers in the entire country. Possible explanations of the low participation to the study could be indifference to the subject, lack of understanding of all questions, fear of correct answers that can affect daily activity, unwillingness to recognize the existence of symptoms, and lack of compliance or knowledge.

The great majority (235 out of 245) of questionnaires confirmed that women are prevalent in this working sector, more specifically: 82 (33.46%) nurses and 161 (65.71%) medical assistants were women. It should be mentioned here that in Romania a nurse's activities include mainly cleaning and disinfecting, while the medical assistant corresponds to a nurse in Western countries. Physicians did not want to take part in the study; only one questionnaire

TABLE 1. Analysis of responses incriminating gloves at work

Response	N	%
Yes	64	26.12
No	165	67.34
Denied	16	6.53
Total	245	

TABLE 2. Analysis of the types of gloves used at work

Glove type	N	%
Latex, powdered	204	83.3
Latex, no powder	41	16.7
Rubber	13	5.3
Unknown	7	2.9
Nitrile	2	0.8
Neoprene	1	0.4
Polyethylene	1	0.4
Vinyl	1	0.4
Response missing	9	3.7

was filled out by a surgeon. Moreover, domestic activities, such as washing the dishes by hand, could also influence the prevalence of hand eczema in women by increasing exposure to irritants at home.

The responders were separated into age groups, and statistics showed a higher frequency of hand eczema reported by healthcare providers older than 40 years compared to younger responders.

Atopic dermatitis was not reported by anyone enrolled in the study; 207 (84.48%) responders denied any type of allergy; rhinitis was reported by 12 (4.90%) responders, asthma by 10 (4.90%), urticaria by 10 (4.09%), oral type of allergy by 2 (0.82%), and unknown type of allergy by 10 (4.08%) responders. Moreover, 207 (83.80%) responders denied having any type of allergy among family members.

Regarding smoking, the results were astonishing and potentially implausible because only 27 (10.93%) responders admitted to smoking compared to 217 (87.84%) who denied and 3 (1.2%) who missed to answer.

The use of protective gloves was reported by 223 (91.02%) responders, and 67 (27.12%) responders incriminated protective gloves, especially powdered latex gloves, as the cause of skin lesions (Table 1 and 2). Contact with other agents was evaluated by answers to specific questions (Table 3).

Hand washing was quantified as rare (0–5 times/day), usual (6–10 times/day), frequent (11–20 times/day), or permanent (more than 20 times/day); it was significantly more frequent among positive responders (Table 4).

TABLE 3. Analysis of other incriminating agents

Agent	N	%
Detergents	7	2.86
Soap	6	2.45
Kallas	5	2.04
Talcum	5	2.04
Y	4	1.63
Bed sheets	1	0.41
Unknown chemical agents	1	0.41
Chloramine	1	0.41
Chlorhexidine	1	0.41
Unknown disinfectant	1	0.41
Response missing	220	89.79
Total	245	

KALLAS and Y are cleaning products labeled by responders, and talc is the white powder usually found in gloves.

TABLE 4. Analysis of hand washing frequency

No. of hand washes per day	N	%
>20 (permanently)	192	77.73
9–11–20 (frequently)	31	12.55
6–10 (usually)	10	4.04
0–5 (rarely)	3	1.21
As necessary	1	0.40
No washing	1	0.40
Response missing	9	3.64

TABLE 5. Analysis of the prevalence of wet hands

Prevalence of wet hands (min/day)	N	%
Permanently	1	0.40
Frequently (>120)	66	26.72
Often (30–120)	56	22.67
Rarely (<30)	105	42.51
Response missing	19	7.69

An important question was addressed to responders, trying to estimate the concept of “wet hands”, defined by prolonged contact with water (minutes/day) without protective measures; responses were classified as frequent, rare, often, and permanent. The results, summarized in Table 5, confirm the importance of a wet environment in inducing occupational hand eczema.

DISCUSSION

To the best of our knowledge, no data has been published on the incidence of occupational hand eczema in healthcare providers in Eastern Europe.

The present study is based on the random distribution of anonymous questionnaires to 1,000 healthcare providers from hospitals and out-patient clinics spread to all corners of the country. The response rate (24.5%) is nevertheless low in contrast to other, similar studies (65% in a study performed in Denmark in 2007).¹

Although compared to a clinical examination the validity of a questionnaire study is debatable, it allows an anonymous investigation on a larger scale, a non-homogenous study population, and the collection of variable additional data. The results of self-reported eczema studies have been validated in many studies.^{2,3} Several Swedish analyses, based on self-reported occupational hand eczema, have concluded a sensitivity of 87% and a specificity of 79%.³

The present study confirms the frequency of occupational eczema in women, especially in nurses, in accordance with other reports in which 70–72% of occupational skin disorders have been diagnosed in female nurses.⁴

Although they are preventive measures, protective gloves, the use of disinfectants, and hand washing proved to be risk factors for occupational hand eczema.

Compared to other similar studies however, the present study indicates a higher positive rate of responders among women over 40 years of age, which is in contrast to other reports.⁵

CONCLUSION

In conclusion, hand eczema can be documented in almost one third of the nurses, and the most frequent factor involved in triggering hand eczema may be represented by powdered latex gloves.

CONFLICT OF INTEREST

Nothing to declare.

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