

Smoking Habit and Correlation with Hand Eczema in Healthcare Workers in the Time of COVID-19

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ABSTRACT

Background: Hand eczema, in time of COVID-19, is one of the most frequently diagnosed skin disorders in nurses. In this study, we sought to investigate whether smoking could be an additional risk factor for hand eczema in nurses during the COVID-19 pandemic. **Method:** Using a questionnaire about smoking details and hand eczema, we conducted a study among nurses involved in the frontline management of COVID-19 patients. A total of 1,000 questionnaires were sent out. The questionnaires were anonymous and based on self-reported answers, with no clinical examination or medical data evaluation. All nurses enrolled in the study were women, working in shifts for the last three months since the start of the COVID-19 pandemic. **Results:** Two-hundred forty-seven questionnaires were accepted for the study, after eliminating non-responders and nurses without hand eczema. The majority of nurses denied smoking (87.85%) in the past and at the moment of the study. Statistics related to years of smoking and occurrence of hand eczema showed no increase in the number of cases in correlation with the number of years of smoking. Similarly, a random distribution of cases of hand eczema was observed when compared to the number of cigarettes per day. **Conclusion:** Our data does not support the hypothesis that smoking is an independent risk factor for the development of occupational hand eczema during the COVID-19 pandemic.

Keywords: smoking, risk factor, hand eczema, COVID-19

INTRODUCTION

After the outbreak of the COVID-19 pandemic in Wuhan, China, healthcare workers have been exposed to intensified hygienic measures to prevent the spread of the disease. Working in wet conditions, and frequent handwashing and disinfection contribute to the development of irritant hand eczema. The frequency of hand eczema in the pre-COVID times has been estimated to be between 20–50%.

Since the COVID-19 pandemic started, hand eczema has been the most frequently diagnosed occupational skin disorder among nurses. Two recently published Chinese studies from Hubei, China, reported hand eczema in 71% to 97% of healthcare workers during the pandemic.^{1,2} There is published evidence that smoking may be an important additional risk factor for both allergic and irritant contact dermatitis, as well as hand eczema in general.^{3,4}

In this study, we sought to investigate whether smoking could be an additional risk factor for hand eczema in nurses during the COVID-19 pandemic.

MATERIAL AND METHODS

Using a questionnaire about smoking details and hand eczema, we conducted a study among nurses involved in the frontline management of COVID-19 patients. One thousand questionnaires were sent out; data were collected anonymously. All nurses enrolled in the study were women, working in shifts for the last three months since the pandemic started.

The study was approved by the ethics committee of the institution, and all study procedures were in accordance with the Declaration of Helsinki.

RESULTS

A total of 247 questionnaires were accepted for the study, after eliminating non-responders and nurses without hand eczema. The questionnaires were anonymous and based on self-reported answers, with no clinical examination or medical data evaluation.

Smoking habit was assessed in order to find any correlation with the occurrence of hand eczema. The majority of

TABLE 1. Smoking as a hobby

Current	Count	Percent
Yes	27	10.93
No	217	87.85
Missing	3	1.22

TABLE 2. History of smoking

Former	Count	Percent
Yes	18	7.29
No	3	1.21
Missing	226	91.50

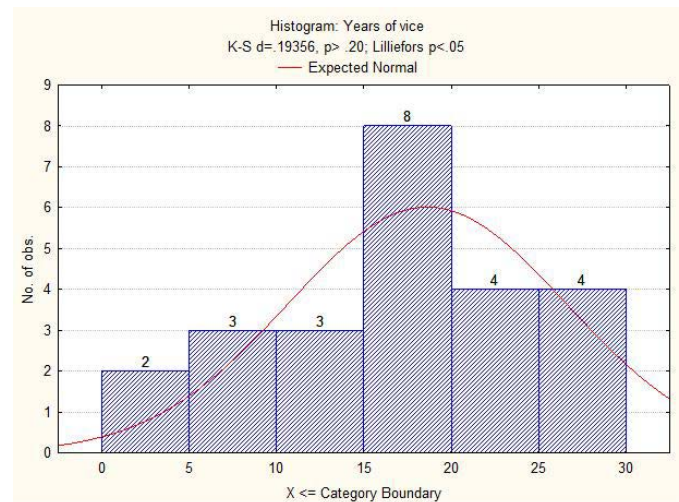


FIGURE 1. Distribution of cases of hand eczema and years of smoking

nurses denied smoking (87.85%) in the past and at the moment of the study (Table 1).

To the question: “Were you a smoker in the past and stopped now?”, the great majority did not respond (Table 2). Statistics related to years of smoking and occurrence of hand eczema showed no increase in the number of cases in correlation with the number of years of smoking (Table 3, Figure 1). Similarly, a random distribution of cases of hand eczema was observed when compared to the number of cigarettes per day (Tables 4 and 5; Figure 2).

TABLE 3. Descriptive statistics of years of smoking within nurses with hand eczema

	Valid N	Mean	Confidence –95 %	Confidence +95%	Median	Min	Max	Lower – Quartile	Upper – Quartile	SD
Years of vice	24	18.6	15.3	22.0	20.0	3.0	30.0	12.5	25.0	8.0

TABLE 4. Descriptive analysis

	Valid N	Mean	Confidence -95 %	Confidence +95%	Median	Min	Max	Lower – Quartile	Upper – Quartile	SD
Cigarettes per day	24	9.6	6.5	12.6	8.0	2.0	30.0	5.0	10.0	7.2

TABLE 5. Number of cigarettes per day declared by nurses with hand eczema

Cigarettes per day	Count	Percent
2	1	0.40
4	1	0.40
5	7	2.83
6	1	0.40
7	1	0.40
8	2	0.81
10	8	3.24
20	1	0.40
30	2	0.81
Missing	223	90.31

DISCUSSIONS

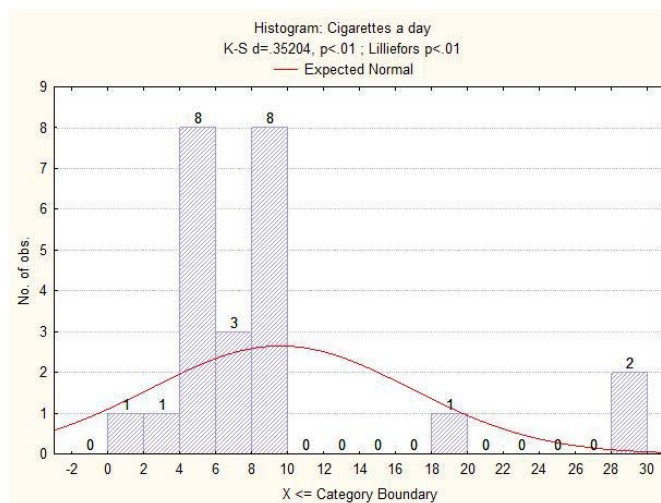
The results of our study showed no correlation between smoking and hand eczema in healthcare workers. Indeed, a previous study confirmed an association between smoking and foot eczema, but not hand eczema.⁵ A large meta-analysis did not confirm smoking as a risk factor for hand eczema.⁶ Other studies from Scandinavia, however, reported an association between smoking and the severity of hand eczema and that smoking prolongs the healing process of hand eczema.^{7,8}

CONCLUSION

In conclusion, our data does not support the idea that smoking is an independent risk factor for the development of occupational hand eczema during the COVID-19 pandemic.

CONFLICT OF INTEREST

Nothing to declare.

**FIGURE 2.** Distribution of cases and number of cigarettes per day

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