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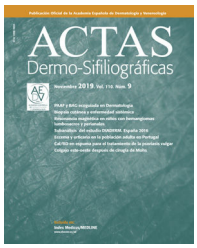

CASE AND RESEARCH LETTER

Contact Dermatitis From Amplified Hand Hygiene Practices in the COVID-19 Pandemic Among Medical Students: Frequency, Knowledge, and Attitude

Dermatitis de contacto debido al incremento de las prácticas sobre higiene de manos durante la pandemia de COVID-19 entre los estudiantes de Medicina: frecuencia, conocimiento y actitud

To the Editor:

Coronavirus disease-2019 pandemic continues to spread across the globe. Frequent use of detergents leads to skin allergic reaction due to the release of inflammatory mediators. Repeated itching leads to scratching at the affected area and secondary bacterial infection.[1] Medical students are an important younger sector in the community that can influence the health status. These hygiene recommendations advance during COVID-19 and changing practices among individuals.[2] This leads to a rise in unfavorable skin diseases and contact dermatitis from prolonged irritant detergents exposures and widespread use of antimicrobials disinfectants that are used to decrease infection with COVID-19.[3,4]

The purposes of this study are highlight the frequency, knowledge, and attitude of contact dermatitis development with repeated exposures to detergents and disinfectants among medical students during this pandemic.

Patients and methods

A cross-sectional study was conducted during January 2021 to assess the frequency of contact dermatitis among Medical students during the COVID-19 pandemic. A total of 700 medical students from Al-Kindy Medical College, University of Baghdad participated in this survey using a Google questionnaire from an online platform was sent to the students online because face-to-face interviews were not applicable during this pandemic. The study protocol was reviewed by the Scientific and Ethical Committee of Al-Kindy Medical College without funding. The final form link was distributed among the medical students via Google platforms. The inclusion criteria were all medical students who had been studying in this college from different stages for the study period. The exclusion criteria were Staff, lecturers, teachers, and other administrators in the college were excluded. An online questionnaire by Google forms was used to collect the data and utilized as a screening instrument examining the frequency of contact dermatitis (supplementary material).

Sampling method

Medical students were selected randomly from online Google platforms. Using Morgans' table to calculate sample size and considering the total number of students were 10000 with 99% CI and 5% margin of error; the sample size calculated was 622 while our study gets many responses and collected about 700 participants. All surveys were completed in their answers.

Statistical analysis

The data were analyzed using SPSS-version- 25. Descriptive statistics including frequencies, percentages, Independent-Sample Chi-Square Test, were used. *P*-value <0.05 was considered statically significant.

Results

The sociodemographic characteristics of the 700 medical students at Al-Kindy College of Medicine were shown in Table 1. Of the 700 who participated in the study, all of them (100%) were single undergraduate students, 80% of them were Clinical stages and the rest were preclinical stages. Sex distribution was 55% female and males were 45%. Their age was 61.42% $\geq$20 years (20.2 $\pm$ 0.12). More than half of them (84.28%) lived in Baghdad. The frequency of CD among medical students during COVID-19 Pandemic was (26.42%) with a significant ($P = 0.0000$) higher percentage among females students (150) (38.96%). Regarding males' students, only 35 of them (11.11) had CD and the rest did not have CD.

Regarding the knowledge of medical students about CD as shown in Table 2. Almost all students (98.42%) agreed that

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Table 1 Sociodemographic characteristics of medical students.

Characters	Categories	No. (%)	Total
Age (years)	≥20	430 (61.42)	700
	<20	270 (38.57)	
Sex	Males	315 (45.00)	700
	Females	385 (55.00)	
Education	Postgraduate	0.00 (00.00)	700
	Undergraduate	700 (100.0)	
	Pre clinical stages (1, 2, 3)	140 (20.00)	700
	Clinical stages (4, 5, 6)	560 (80.00)	
Address	Baghdad	590 (84.28)	700
	Others	110 (15.71)	
Marital status	Single	700 (100.0)	700
	Married	0.00 (00.00)	

Table 2 Knowledge of the medical students about CD and COVID-19.

Item	Yes No. (%)	No No. (%)
Cause of CD	500 (71.42)	200 (28.57)
Signs and symptoms	430 (61.42)	270 (38.57)
Treatment	238 (34.00)	462 (66.00)
Type of antiseptic used		
Alcohol	525 (75.00)	175 (25.00)
Soap	175 (25.00)	525 (75.00)
Frequency of using detergent		
Not frequent	70 (10.00)	630 (90.00)
Frequent	630 (90.00)	70 (10.00)
Complication	295 (42.14)	405 (57.85)
Type IV hypersensitivity	346 (49.42)	354 (50.57)
CD is a Contagious disease	121 (17.28)	579 (82.71)
Relation with COVID-19	687 (98.42)	13 (1.85)

Table 3 Attitudes of the medical students about CD and COVID-19.

Item	Yes No. (%)	No No. (%)
CD is a serious disease	327 (46.71)	373 (53.28)
Life-long disease	632 (90.28)	68 (9.71)
Preventable disease	435 (62.14)	265 (37.85)
Increased with COVID-19	656 (93.71)	44 (6.28)
Health education prevents CD	567 (81.00)	133 (19.00)
Treated at home	643 (91.85)	57 (8.14)
Avoid wearing masks and gloves	231 (33.00)	469 (67.00)

this disease had a relation with COVID-19. About 82.71% of them did not agree that CD is a contagious disease. Nearly half of them (61.42%) know signs and symptoms. Students who used antiseptics frequently were (90%) and alcohol was mostly used (75%) and the rest were used Soap(25%). Table 3 illustrates the attitude of medical students about CD. A majority (93.71%) believed that CD increased with COVID-19, 90.28% agreed that its life-long disease. A proportion of students (67%) refused the idea of avoiding wearing masks, gloves, and detergent usage.

Discussion

In response to the COVID-19 pandemic outbreak, It was recommended proper and frequent handwashing with soap and using 70% alcohol. These recommendations have increased the incidence of hand eczema and contact dermatitis[5] Frequent usage of gloves and masks will affect the function of epidermal barrier of the skin in medical workers.[6] This study was in agreement with other study that demonstrated a high percentage (90.4%) of hand dermatitis among health

care workers and (14.9%) of them had eczema (contact dermatitis).[7] In Wuhan city; the hospitals of contact dermatitis among medical staff in university hospital was 74.5%.[8] This difference may be due to type of workplace of sample selection, age of selected samples, differences in sample size, disparities in the characteristics of study participants and method of data collection. Daily using hand hygiene with alcohol demonstrated the lowest rates of skin barrier disruption and the highest reduction of colony forming unit.[9] Other studies showed CD more affecting females which is comparable to our study like Saudi Arabia (46.4%) which might be due to similarities in socioeconomic characteristics of study sample.[10] In spite of hand hygiene is important measure to prevent COVID-19 but skin barrier disruption can provide a site entry and viral attached to angiotensin converting enzyme receptor that presents in hair follicles, epidermis, and blood vessels of the skin.

Conclusions

This study showed that medical student's consideration contact dermatitis increased with frequent use of detergents during the COVID-19 pandemic. This may be due to frequent use of alcohol-based detergent. The educational level is an important factor for knowledge and attitude about this disease.

Conflict of interest

The author declares not to have any conflict of interest.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.ad.2022.07.011.

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