

Mask-induced facial dermatoses during the COVID-19 pandemic: A cross-sectional study in a tertiary medical center in the Philippines



To the Editor: Since the start of the COVID-19 pandemic, an increase in the reports of mask-related skin problems was observed.¹ We conducted a cross-sectional study on the prevalence of self-reported, new-onset and/or aggravations of previously diagnosed facial dermatoses among the medical and nonmedical staff of Rizal Medical Center, a tertiary hospital in Pasig, Philippines.

A total of 313 of 319 participants, consisting of medical and nonmedical staff who have been using any type of face mask for at least 6 weeks before the time of study, completed a questionnaire. Of these, 161 (51.4%) respondents had self-reported symptoms of facial dermatoses; the most common reported symptom was itching (n = 126), followed by dryness/tightness of the skin on the area under the mask (n = 66) (Table I). The symptoms of facial dermatosis were only slightly more frequently observed in those using cloth and disposable masks such as surgical, N95, and KN95 masks than in those who wore elastomeric/silicon masks. The type of mask used was not associated with the occurrence of symptoms of facial dermatoses ($P = .7079$) (Table II).

The mean frequency and duration of mask use among the participants was 12.1 hours (SD: ± 4.35) and 6 days (SD: ± 3.31), respectively. In addition, no significant correlation was found among those who used face masks for 8 hours or more, but many participants reported that their symptoms occurred when they used masks for more than 17 hours. This is consistent with a systematic review published by Barnawi et al,² in which the occurrence of dermatological complications from wearing personal protective equipment (PPE) was reported to be more apparent among individuals wearing PPE for more than 4 hours a day. Many participants described symptoms that appeared when they use masks for 5 days a week. In our study, we found no significant difference in frequency and duration of use of different types of masks between respondents with and without symptoms, which is not in concordance with the result of the systematic review on the impact of PPE use on health care workers' physical health, showing that longer duration of shifts and

increased consecutive days of wearing PPE increases the risk of symptom manifestation.³

The most common diagnosis of facial dermatoses was acne vulgaris/mechanica (n = 36/78, 46.2%), followed by irritant contact dermatitis (n = 24/78, 30.8%). We found that the symptoms of facial dermatoses significantly differ at a 5% level of significance among those in the medical than in the nonmedical subgroup (Table I). A significant difference was also observed among the different areas of assignment of employees, which could mean that the working environment may be a factor in the occurrence of the symptoms.

Despite emerging reports on the increase in the prevalence of mask-induced facial dermatoses,^{4,5} this study showed that the type, frequency, and duration of face mask usage did not significantly correlate with the development of the symptoms of facial dermatosis in many participants. We recommend that further related studies should be conducted with larger sample sizes or data collection should be conducted simultaneously from different institutions and hospitals around the country.

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Conflicts of interest

None disclosed.

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Table I. Clinical features and other data of the Rizal Medical Center employees using face masks

Variables	Number (n)	Percentage (%)	
Number of respondents	313	--	
Age (mean, SD)	35.9 ± 8.8		
Sex			
Female	223	71.2	
Male	90	28.6	
Area of work			
Administrative offices	34	10.9	
Emergency room	48	15.3	
Outpatient department	47	15.0	
Operating room/delivery room	24	7.7	
Ward	111	35.5	
Others	49	15.7	
Division			
Finance	9	2.8	
HOPSD	15	4.8	
MCC	1	0.3	
Medical	112	35.8	
Nursing	176	56.2	
Proportion of participants with symptoms on the basis of area of practice	Number (n)	Percentage (%)	One sided P > Z
Subgroup			
Medical	157	95.15	<.0001
Nonmedical	8	4.85	<.0001
Area of work			
Administrative offices	15	9	<.0001
Emergency room	26	16	<.0001
Outpatient department	22	14	<.0001
Operating room	10	6	<.0001
Ward	59	37	<.0001
Others	29	18	<.0001
Skin symptoms	Number (n)	Percentage (%)	
Itching	126	40.3	
Dryness or tightness	66	21.1	
Rash	49	15.7	
Pricking sensation	17	5.4	
Burning pain	15	4.8	
Seborrhea/oiliness	2	0.6	
Diagnosis			
Acne vulgaris/mechanica	36	46.2	
Irritant contact dermatitis	24	30.8	
Seborrheic dermatitis	10	12.8	
Xerosis cutis	4	5.1	
Allergic contact dermatitis	3	3.8	
Contact urticaria	1	0.01	
Hygienic practices to minimize occurrence of symptoms of facial dermatoses	Number (n)	Percentage (%)	
Cleansing the face with a mild, fragrance-free cleanser daily after using mask	231	73.8	
Not reusing disposable masks worn more than 8 hours	195	62.3	
Skipping using makeup when wearing a mask	135	43.1	
Avoiding using irritating skin care products on the face	131	41.9	
Safely removing mask to take breaks every 4 hours	100	31.9	
Applying a mild moisturizer immediately before and/or after wearing a mask	87	27.8	
Washing cloth masks daily	40	12.8	
Applying petroleum jelly or a fragrance-free lip balm	22	7.0	
Changing of mask when it is already soaked with any fluid, such as sweat water	1	0.3	
None	4	1.3	

Table II. Type of face masks, duration of wearing, and frequency of face mask use in relation to the development of the symptoms of facial dermatoses

Type, duration and frequency of face mask use	Total	Without symptoms	With symptoms	P value
Type of face mask (% of participants in particular subgroup), n (%)				.7079
Disposable mask	268 (85.6)	129 (48.1)	139 (51.9)	
Elastomeric/silicon masks	31 (9.9)	17 (54.8)	14 (45.2)	
Cloth mask	14 (4.5)	6 (42.9)	8 (57.1)	
Duration of face masks used per day, n (%)				.6226
8 hours and below	66 (21.1)	30 (45.5)	36 (54.5)	
9-16 hours	208 (66.5)	105 (50.5)	103 (49.5)	
≥17 hours	39 (12.5)	17 (43.6)	22 (56.4)	
Frequency of use, n (%)				.4926
4 days and below	68 (21.8)	36 (52.9)	32 (47.1)	
5 days	71 (22.7)	29 (40.8)	42 (59.2)	
6 days	25 (8)	13 (52)	12 (48)	
7 days	149 (47.6)	74 (49.7)	75 (50.3)	

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