Analysis of patient attitudes and behavior regarding dermatologic care during the COVID-19 pandemic: a survey-based study at a single academic institution

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Keywords: attitudes, COVID-19, dermatology, health inequities, mask, skin check

To the Editor:

The impact of the coronavirus disease 201919 (COVID-19) pandemic has been significant and pervasive across industries, including healthcare. It has been reported that 41% of adults have avoided/delayed medical care due to COVID-19, which worsens outcomes [1]. As certain demographic populations are associated with higher mortality from COVID-19, including Asian and Black race, age greater than 60 years, and those with a high school diploma or less, it is important to identify if particular groups of individuals also have heightened concern about seeking dermatologic care and their expectations when visiting the dermatologist [2-4]. We were specifically interested in attitudes of patients toward in-person visits including examination of the skin underneath their mask.

In January 2021, a 7-question Institutional Review Board-approved survey was given to 226 consecutive adult patients presenting for outpatient care at Tufts Medical Center Dermatology, with 207 responding (response rate=90.8%), **Table 1**. Questions were focused on the impact of COVID-19 on patients' dermatologic care, care-seeking behavior, and mask-wearing behavior. Statistical analyses were performed using R 4.0.3 using z-tests for proportions, with subgroup analyses performed in age, race/ethnicity, and education.

Our results revealed patients 30-59 years of age and non-White individuals to be most concerned about COVID-19. In terms of changes in dermatologic care-seeking, 25% of total respondents reported concerns about frequenting a dermatology office during the pandemic, whereas 17% of total respondents reported having avoided/delayed dermatologic care due to COVID-19. Patients noting concern about coming to the dermatologist's office tended to have avoided/delayed care (Spearman correlation=0.58, P<0.001). Asians were more likely than Whites to report COVID-19 negatively impacted their care (12/35 [34%] versus 17/114 [15%], P=0.006) and to have delayed care due to COVID-19 (10/35 [29%] versus 15/115 [13%], P=0.016). Similar trends were seen for all non-Whites versus Whites as well. Surprisingly, respondents ≥60 years were more likely than respondents 30-59 years old to disagree about being concerned with going to their dermatologist (30/48 [63%] versus 32/84 [38%], P=0.003) or to have avoided/delayed care due to COVID-19 (41/48 [85%] versus 56/81 [51%], P=0.02), respectively (**Table 2**).

A large minority of all patients (32%) did not want their dermatologist to examine the skin under the mask. Compared to Asians and all non-Whites, Whites were more likely to disagree that examination under the mask could expose them to COVID-19 (10/35 [29%] versus 73/114 [64%], P<0.001; 39/88 [44%] versus 73/114 [64%], P=0.003, respectively).

It is important for dermatologists to be cognizant of the fears of patients when conducting visits in the office. Patients may still have concerns about

Table 1. *Demographics of respondents.*

Age	**N (%)**
18-29 ("young")	60 (31.3%)
30-59 ("middle-aged")	84 (43.8%)
60+ ("older")	48 (25.0%)
Gender	
Male	82 (39.8%)
Female	122 (59.2%)
Other	2 (1.0%)
Prefer not to say	0 (0%)
Race/ethnicity	
White	115 (55.6%)
Black	22 (10.6%)
Hispanic	17 (8.2%)
Asian	36 (17.4%)
Native American	0 (0%)
Native Hawaiian or Pacific Islander	0 (0%)
Mixed (>=2 races)	12 (5.8%)
Other/unknown	3 (1.4%)
Prefer not to say	2 (1.0%)
Highest level of education completed	
Some high school/high school/trade school	58 (28.0%)
Bachelors	93 (44.9%)
Masters/doctorates	50 (24.2%)
Prefer not to say	6 (2.9%)

unmasking [5]. Although certain groups of high-risk patients are disproportionately affected by COVID-19, many patients still remain concerned about the virus. Limitations of this study include single center analysis, sampling bias toward patients willing to be seen in-person, and differences in disease prevalence inherent to certain ages and skin types. This study was conducted before the COVID-19 vaccine was widely available and represents a limited time period.

Potential conflicts of interest

David Rosmarin has received honoraria as a consultant for AbbVie, Boehringer-Ingelheim, Bristol Meyers Squibb, Celgene, Concert, Dermavant, Dermira, Incyte, Janssen, Kyowa Kirin, Lilly, Novartis, Pfizer, Regeneron, Sanofi, Sun Pharmaceuticals, UCB, VielaBio; has received research support from AbbVie, Amgen, Bristol Meyers Squibb, Celgene, Dermira, Galderma, Incyte, Janssen, Lilly, Merck, Novartis, Pfizer, and Regeneron Pharmaceuticals Inc; and has served as a paid speaker for AbbVie, Amgen, Celgene, Janssen, Lilly, Novartis, Pfizer, Regeneron Pharmaceuticals Inc., and Sanofi. Remaining authors declare no conflicts of interest.

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Table 2. *Statistical analyses of questions analyzed by age, race/ethnicity, and education.*

	"COVID-19 has had a negative impact on my dermatologic care"			"I am concerned about coming to a dermatologist's office during the COVID-19 pandemic"			"I have avoided or delayed seeing a dermatologist specifically because of COVID-19"			"I want my dermatologist to examine the skin under my mask"			"I am concerned that examining under the mask might expose me to COVID"		
Age*	**SA/A**	**SD/D**	**Total**	**SA/A**	**SD/D**	**Total**	**SA/A**	**SD/D**	**Total**	**SA/A**	**SD/D**	**Total**	**SA/A**	**SD/D**	**Total**
18-29 (A1)	8 (14%)	28 (47%)	59	14 (23%)	29 (48%)	60	13 (22%)	45 (75%)	60	28 (47%)	23 (38%)	60	9 (12%)	49 (63%)	78
30-59 (A2)	15 (18%)	48 (59%)	82	24 (29%)	32 (38%)	84	15 (19%)	56 (69%)	81	42 (51%)	23 (28%)	82	18 (22%)	40 (49%)	82
60+ (A3)	10 (21%)	27 (56%)	48	10 (21%)	30 (63%)	48	5 (10%)	41 (85%)	48	22 (46%)	12 (25%)	48	9 (19%)	32 (68%)	47
A1 vs A3, P values	0.317	0.366	-	0.756	0.142	-	0.119	0.182	-	0.931	0.141	-	0.240	0.551	-
A2 vs A3, P values	0.723	0.799	-	0.328	0.00344***	-	0.219	0.0193	-	0.553	0.705	-	0.707	0.0168	-
Race/ethnicity*	**SA/A**	**SD/D**	**Total**	**SA/A**	**SD/D**	**Total**	**SA/A**	**SD/D**	**Total**	**SA/A**	**SD/D**	**Total**	**SA/A**	**SD/D**	**Total**
White (R1)	17 (15%)	73 (64%)	114	26 (23%)	61 (53%)	115	15 (13%)	95 (83%)	115	53 (46%)	40 (35%)	115	19 (17%)	73 (64%)	114
Asian (R2)	12 (34%)	11 (31%)	35	10 (28%)	12 (33%)	36	10 (29%)	21 (60%)	35	14 (40%)	10 (29%)	35	7 (20%)	10 (29%)	35
Non-White** (R3)	20 (23%)	37 (43%)	87	25 (28%)	38 (42%)	90	18 (21%)	60 (69%)	87	43 (49%)	25 (28%)	88	19 (22%)	39 (44%)	88
R1 vs R2, P values	0.00567	<0.001	-	0.525	0.396	-	0.0155	0.146	-	0.526	0.495	-	0.650	<0.001	-
R1 vs R3, P values	0.143	0.00120	-	0.0195	0.124	-	0.00258	0.0115	-	0.650	0.335	-	0.375	0.00259	-
Education*	**SA/A**	**SD/D**	**Total**	**SA/A**	**SD/D**	**Total**	**SA/A**	**SD/D**	**Total**	**SA/A**	**SD/D**	**Total**	**SA/A**	**SD/D**	**Total**
Some HS/HS/Trade (E1)	11 (19%)	27 (47%)	57	13 (22%)	28 (48%)	58	7 (13%)	45 (80%)	56	22 (39%)	17 (30%)	57	9 (16%)	33 (58%)	57
Bachelor's (E2)	18 (20%)	51 (55%)	92	20 (22%)	49 (53%)	93	14 (15%)	69 (75%)	92	48 (52%)	26 (28%)	93	16 (17%)	52 (57%)	92
Masters/doctorates (E3)	4 (8%)	33 (67%)	49	16 (32%)	23 (46%)	50	11 (22%)	38 (76%)	50	24 (48%)	22 (44%)	50	11 (22%)	29 (58%)	50
E1 vs E2, P values	0.968	0.338	-	0.896	0.598	-	0.646	0.452	-	0.121	0.806	-	0.799	0.869	-
E1 vs E3, P values	0.101	0.0193	-	0.262	0.813	-	0.194	0.587	-	0.327	0.129	-	0.411	0.991	-

**Answer options included Strongly Agree (SA), Agree (A), Neutral, Disagree (D), Strongly Disagree (SD).*
***"Non-White" subgroup consisted of respondents answering either Black, Hispanic, Asian, Mixed, and Other/Unknown for race, which were grouped and analyzed together.*
****Statistical tests were conducted using z-tests in R 4.0.3, with statistical significance determined at a P value <0.05.*