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Analysis of availability of online dermatology appointments during the COVID-19 pandemic

To the Editor: ZocDoc is an online appointment scheduling platform that hosts thousands of independent practices and hospitals.[1] Wait times for online dermatology appointments have been reported; to our knowledge, the impact of COVID-19 on appointment availability and wait times has not been studied.[2] Our objective was to characterize dermatology appointment wait times on ZocDoc based on dermatologist density during the COVID-19 pandemic.

In April 2020, searches for "dermatologist" were conducted on ZocDoc in chronological order of the most to least dermatologist-dense areas in the United States as of 2016.[3] Overlapping providers between cities and duplicate providers were excluded. Data analyzed included provider characteristics, days until the next available appointment, and video appointment availability. Descriptive statistics were generated, and Pearson correlation coefficients and *t* tests were calculated. All data analyses were performed by using the Excel Data Analysis Toolpak (Microsoft Corporation, Redmond, WA).

A total of 615 providers were obtained for 20 searches on ZocDoc; 67% were dermatologists (Table I). Mean appointment wait times for the most and least dermatologist-dense locations were 3.9 and 6.8 days, respectively. There was no significant correlation between provider density and wait times and no significant difference in overall mean wait times for dermatologists (5.7 days) versus nondermatologists (5.4 days). When stratified by specialty, overall mean wait times ranged from 2 to 6 days, excluding primary care (17.3 days).

All providers in Bethesda/Rockville, MD; Swainsboro, GA; Amarillo, TX; and Yakima, WA offered video appointments (Supplemental Fig 1; available via Mendeley at https://doi.org/10.17632/

Table I. ZocDoc appointment search results for "dermatologist" in the most and least dermatologist-dense locations

Characteristics	Density rank																					
	1	2	3	4	5	6	7	8	9	10	703	704	705	706	707	708	709	710	711	712
Location	Upper East Side, NY	Palo Alto, CA	Santa Monica, CA	Boston, MA	Middlesex County, MA	Lower Manhattan, NY	Hanover, NH	Bethesda and Rockville, MD	Annapolis, MD	Portland, ME	Swainsboro, GA	Amarillo, TX	Flint, MI	South Bend, IN	Dayton, OH	Mojave, CA	Beaumont, TX	Yakima, WA	Lexington, KY	Jamaica, NY
Providers, n	116	107	63	54	4	18	2	54	2	0	32	30	18	20	4	12	39	24	0	16
Specialty, n (%)																				
Dermatology	113 (97.4)	75 (70.1)	47 (74.6)	32 (59.3)	1 (25.0)	16 (88.9)	2 (100.0)	35 (64.8)	2 (100.0)		17 (53.1)	4 (13.3)	11 (61.1)	5 (25.0)	4 (100.0)	8 (66.7)	14 (35.9)	11 (45.8)		16 (100.0)
Family medicine		18 (16.8)	5 (7.9)	12 (22.2)	1 (25.0)			9 (16.7)			1 (3.1)	10 (33.3)	4 (22.2)	6 (30.0)		1 (8.3)	12 (30.8)	2 (8.3)		
Internal medicine		5 (4.7)	4 (6.3)	6 (11.1)	1 (25.0)			7 (13.0)			1 (3.1)	1 (3.3)	1 (5.6)	2 (10.0)		1 (8.3)	5 (12.8)			
Physician assistant	3 (2.6)			1 (1.9)		2 (11.1)					12 (37.5)	8 (26.7)		1 (5.0)			2 (5.1)	4 (16.7)		
Nurse practitioner		1 (0.9)	1 (1.6)	3 (5.6)	1 (25.0)							7 (23.3)				1 (8.3)	3 (7.7)	2 (8.3)		
Primary care		2 (1.9)	2 (3.2)								1 (3.1)		2 (11.1)	5 (25.0)			2 (5.1)			
Other																				
Addiction		1 (0.9)																		
Cardiology								1 (1.9)												
Allergist								1 (1.9)												

Continued

Table I. Cont'd

Characteristics	Density rank																			
	1	2	3	4	5	6	7	8	9	10	703	704	705	706	707	708	709	710	711	712
Naturopathic doctor																1 (8.3)		5 (20.8)		
Plastic surgery		2 (1.9)	3 (4.8)																	
Sports medicine		2 (1.9)												1 (5.0)			1 (2.6)			
Pediatrics		1 (0.9)	1 (1.6)					1 (1.9)												
Sex, n (%)																				
Female	50 (43.1)	57 (53.3)	24 (38.1)	31 (57.4)	3 (75.0)	12 (66.7)	0 (0.0)	33 (61.1)	1 (50.0)		27 (84.4)	22 (73.3)	5 (27.8)	6 (30.0)	2 (50.0)	6 (50.0)	21 (53.8)	19 (79.2)		4 (25.0)
Male	66 (56.9)	50 (46.7)	39 (61.9)	23 (42.6)	1 (25.0)	6 (33.3)	2 (100.0)	21 (38.9)	1 (50.0)		5 (15.6)	8 (26.7)	13 (72.2)	14 (70.0)	2 (50.0)	6 (50.0)	18 (46.2)	5 (20.8)		12 (75.0)
Total number of languages represented	25	28	14	22	4	5	1	12	1		23	8	12	11	4	7	21	14		10
Total number of zip codes represented	33	54	35	25	2	12	0	33	2		3	9	3	2	0	1	10	6		5
Number of available days in May 2020	11.8	15.4	14.4	9.6	4.0	7.5	2.0	13.0	6.5		7.8	16.1	13.8	16.2	2.0	14.6	17.1	13.1		9.7
Clinic distance, miles	1.7	15.8	12.1	11.2	69.5	2.3		9.8	59.0				44.0	67.9	61.0	60.6	71.1			5.3
Appointment interval, minutes	17.9	18.0	21.6	21.3	15.0	25.7	15.0	30.1	10.0		23.3	26.7	27.3	65.0	37.5	30.0	23.5	34.3		28.4
Type of appointment offered																				
In person	38 (32.8)	21 (19.6)	38 (60.3)	19 (35.2)	0 (0.0)	5 (27.8)	0 (0.0)	23 (42.6)	2 (100.0)		0 (0.0)	0 (0.0)	8 (44.4)	13 (65.0)	4 (100.0)	4 (33.3)	2 (5.1)	0 (0.0)		10 (62.5)
Video	52 (44.8)	12 (11.2)	6 (9.5)	13 (24.1)	1 (25.0)	6 (33.3)	2 (100.0)	5 (9.3)	0 (0.0)		11 (34.4)	3 (10.0)	1 (5.6)	0 (0.0)	0 (0.0)	0 (0.0)	9 (23.1)	4 (16.7)		1 (6.3)
Both	24 (20.7)	63 (58.9)	13 (20.6)	2 (3.7)	0 (0.0)	6 (33.3)	0 (0.0)	20 (37.0)	0 (0.0)		20 (62.5)	27 (90.0)	6 (33.3)	2 (10.0)	0 (0.0)	1 (8.3)	26 (66.7)	20 (83.3)		5 (31.3)
Not provided	2 (1.7)	11 (10.3)	6 (9.5)	20 (37.0)	3 (75.0)	1 (5.6)	0 (0.0)	6 (11.1)	0 (0.0)		1 (3.1)	0 (0.0)	3 (16.7)	5 (25.0)	0 (0.0)	7 (58.3)	2 (5.1)	0 (0.0)		0 (0.0)
Mean wait time, d																				
In person	9.8	8.5	4.9	17.3		22.8		5.0	7.5				19.6	33.7	35.0	7.5	0.0			9.0
Video	0.9	0.4	1.3	3.3	4.0	1.6	0.0	2.7			6.5	0.3	1.0				1.0	1.3		6.0
Both	1.5	2.5	2.9	22.5		2.8		7.7			4.3	2.4	1.5	0.0		0.0	0.7	1.8		2.6
Any video	1.1	2.1	2.4	6.2	4.0	2.3	0.0	6.7			5.0	2.2	1.4	0.0		0.0	0.8	1.7		3.2

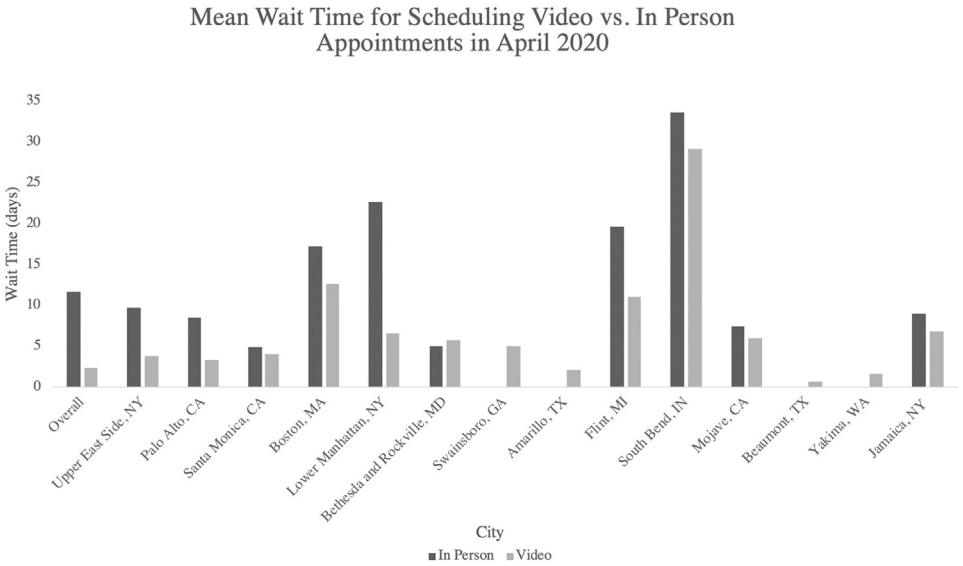

Fig 1. The mean wait time for scheduling video versus in-person appointments by geographic location in April 2020. "In person" includes providers who offer in-person appointments only. "Video" includes any providers who offer video appointments. Cities with fewer than 5 providers (including Middlesex County, MA; Hanover, NH; Annapolis, MD; Dayton, OH; and Lexington, KY) listed were excluded from the figure. No providers in Swainsboro, GA; Amarillo, TX; Beaumont, TX; or Yakima, WA, offered only in-person appointments. Cities are ranked in order of highest to lowest dermatologist density from left to right.

k9v34n2fpr.1). Fewer than one third of providers in South Bend, IN, and Mojave, CA, offered televisits. There was no significant difference in the proportion of dermatologists versus nondermatologists offering video appointments. The overall mean wait times for providers offering in-person versus video or in-person appointments were 11.7 and 2.4 days, respectively (Fig 1).

The COVID-19 pandemic has resulted in increased use of telemedicine to deliver patient care.[4] ZocDoc providers in the most low and high dermatologist-dense cities had ample video appointments available. Video wait times (2.4 days) were shorter than average in-person wait times on ZocDoc (11.7 days). This difference in wait times is consistent with findings from a single institution study performed in 2018, showing that mean wait times for virtual dermatology consultations (14.3 days) were significantly shorter than those for in-person referrals (34.7 days).[5] In a ZocDoc search for "dermatologist" for in-person appointments in April 2019, 26% of providers were nondermatologists compared to 33% in April 2020.[2] Therefore, in this past year, there has been an increase in nondermatologist physicians and midlevel providers offering dermatologic care.

This study is subject to several limitations. Because it was performed during a unique time period, future telemedicine use and reimbursement cannot be extrapolated. Only ZocDoc was analyzed, which may not fully represent the availability of online dermatology appointments. Additionally, there may have been less demand for dermatologists earlier in the pandemic, which may have affected wait times.

The availability of virtual dermatology appointments during a global pandemic has helped provide timely patient care across the United States. Patient outcomes with teledermatology versus in-person visits and the impact of dermatologic care by nondermatologists merit further study.

Lilly Gu, BS,[a] *Laura Xiang, BA,*[b] *and Shari R. Lipner, MD, PhD*[c]

From the Weill Cornell Medical College, New York, New York[a]*; Case Western Reserve University School of Medicine, Cleveland, Ohio*[b]*; and Weill Cornell Medicine, Department of Dermatology, New York, New York.*[c]

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Correspondence to: Shari Lipner, MD, PhD, 1305 York Ave, 9th Floor, New York, New York 10021

E-mail: shl9032@med.cornell.edu

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Diagnostic and management considerations for "maskne" in the era of COVID-19

To the Editor: "Maskne," coined during the coronavirus disease 2019 (COVID-19) pandemic, is a variant of acne mechanica, previously associated with headgear or personal protective equipment. This report focuses on the widespread use of reusable fabric masks and the impact of the skin microenvironment and mechanical factors (ie, textile-skin friction), which to my knowledge has not been previously evaluated.

Our understanding of maskne is largely observational, although it is likely a disorder of follicular occlusion and directly related to mechanical stress[1] (pressure, occlusion, friction) and microbiome dysbiosis[2] (heat, pH, moisture from biofluids). Both of these are affected by increased duration of mask wear. Tropical climates and outdoor exposure (increased sweating) are risk factors for acne-susceptible populations (active young adults, seborrhea, genetic predisposition).

Clinical criteria proposed for maskne: onset of acne within 6 weeks of start of regular face mask wear or exacerbation of acne over the masked area, distinct pattern, referred to as the O-zone in this report (Fig 1), and exclusion of differential diagnoses, including perioral dermatitis, seborrheic dermatitis, pityrosporum folliculitis, and acne rosacea.

Special consideration for skin care should include antibacterial gentle cleansers and moisturizers formulated as prescription emollient devices, which help maintain a healthy skin barrier/microbiome.

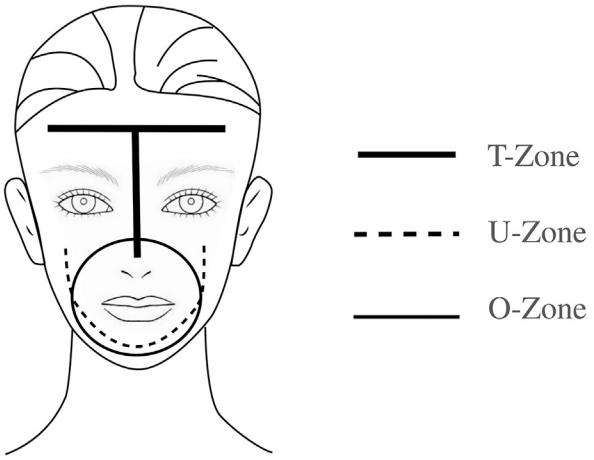

Fig 1. Distinct acne patterns seen in the T zone of physiologic acne, the U zone of adult acne, and the O zone of maskne.

Spot acne treatment with benzoyl peroxide, salicylic acid, sulfur, α-hydroxy acids, and retinoids predispose to irritant contact dermatitis under occlusion. Botanical actives with anti-inflammatory, antioxidant, sebum regulation, and antimicrobial properties are preferred. Hydrogel carrier formulations of retinoid/antibiotic combination topicals can minimize local irritation by ensuring better drug tolerance and efficacy.

Chemical sunscreen sensitivity and comedogenicity increase under occlusion. Ultraviolet protection factor (UPF) 50+ fabric masks should replace the wearing of sunscreen (eliminates constant reapplication) as a practical photoprotective measure for the lower half of the face, to improve compliance to sun protection and incentivize mask wearing. Dermatologists' prescribing patterns for maskne may potentially influence the development of antibiotic resistance worldwide.

Dermatologists can advise on design of face masks, encouraging patient compliance. Natural fibers wick moisture but have increased fluid saturation, heightening discomfort and stickiness sensation (accumulated stickiness magnitude).[3] Synthetic biofunctional textiles have a high evaporation/cooling coefficient and are water resistant, preventing biofluid spread. High thread count and tightly woven fabrics have higher UPF and minimize textile-skin friction, relevant to individuals with atopic conditions. Light/reflective colors disperse heat (Fig 2).

Reusable fabric masks should allow for movement while speaking, with minimal displacement over orifices. Fabric masks should omit abrasive metallic parts that also cause nickel sensitization. Allergic contact dermatitis and transcutaneous absorption of