

Effect of the COVID-19 Pandemic on the Academic Publishing Behavior of Dermatologists

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Abstract

Aim: The coronavirus disease-2019 (COVID-19) pandemic since its inception, has significantly impacted the academic activities of medical doctors. The decrease in physicians' workload and the urge to share new knowledge about the new disorder caused medical doctors to write and publish academic papers rapidly. We investigated the effects of the pandemic on the academic publishing behavior of dermatologists in Turkey.

Materials and Methods: The study was conducted through a PubMed search using the keywords "Dermatology Turkey". Search limits were set for 2017-2019 for the pre-pandemic period and 2020-2022 for the post-pandemic era. Irrelevant articles were manually excluded. The publication year, type and subject of publication, whether the study was multicenter or multidisciplinary, and the journal were noted for each paper. Data obtained were analyzed using the IBM SPSS Statistics 25 package program.

Results: The search revealed 986 and 1420 articles for the pre- and post-pandemic periods, respectively. The most published subjects were drugs and drug eruptions before the pandemic and COVID-19 after the pandemic. An increase in the ratio of "letters to editors" and in multicenter studies was noted in the post-pandemic era. The distribution among the journals of publication changed strikingly, and 35.8% of papers were published in only two journals after the pandemic.

Conclusion: There were significant changes in the publishing behavior of Turkish dermatologists during the pandemic. We believe that this study is important as a demonstration of the academic behaviors of dermatologists and a guide for young dermatologists who wish to publish.

Keywords: Academic publishing, COVID-19, dermatology

INTRODUCTION

The coronavirus disease-2019 (COVID-19) pandemic, which started at the end of the year 2019, led to many changes in all areas of life, including the academic activities of medical doctors. The restrictions on the number of patients seen at outpatient clinics at the beginning of the pandemic caused a decrease in the clinical workload of physicians. Additionally, academic physicians were eager to share the findings and data they obtained about the new disease, and many scientific journals and publishers promoted articles about COVID-19 by offering fast-track and open-access publishing for these papers.¹ This led to a substantial change in the academic productivity of physicians worldwide and more published articles.

In this study, we aimed to investigate the effects of the COVID-19 pandemic on the academic behavior of Turkish dermatologists, namely the changes in the number and types of scientific papers and their contents.

MATERIALS AND METHODS

Scientific dermatology publications from Turkey were evaluated in two groups: pre-pandemic for the last three years before the onset of the COVID-19 pandemic and post-pandemic for the period after the pandemic started. Only articles published in PubMed were included in this

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study. A PubMed search was conducted for the keywords “Dermatology Turkey” on August 5, 2022. Search restrictions were set for papers published between 2017 and 2019 for the pre-pandemic period and 2020-2022 for the post-pandemic period. The papers from 2022 were included until August. The listed articles were manually selected to include at least one dermatologist from Turkey. The dataset was constructed to include the year of publication, a type of publication, subject, status of being multicenter and multidisciplinary, and journal name. The impact factors of the journals were noted. For statistical analysis, the journals that published less than ten dermatology publications from Turkey were grouped under the title “other”. Papers published before 2017 and after the 5th August 2022, lacking a dermatologist from Turkey among authors and not indexed in PubMed, were excluded from the study. The subject groups are depicted in Table 1.

Statistical analysis

Data were analyzed using the IBM SPSS Statistics 25 package program. Descriptive statistics were given in terms of frequency and percentage, whereas comparative statistics between pre- and post-pandemic publications were conducted using the chi-square test. Confidence level was determined as 95%, and P values 0.05 were accepted as statistically significant.

RESULTS

The PubMed search resulted in 1265 papers for the pre-pandemic and 1627 papers for the post-pandemic era. After manually excluding articles that did not meet the inclusion criteria, the pre- and post-pandemic groups included 986 and 1420 articles, respectively. An increase in the number of publications after the pandemic started was noticed (Figure 1).

The dermatology subjects with the highest numbers of publications were drugs and drug reactions (10.4%), psoriasis (9.3%), and connective tissue disorders/vasculitides (7.9%) in the pre-pandemic period. During the pandemic period, the most frequent subjects were COVID-19 (13.94%), psoriasis (8.59%), drugs and drug reactions (7%), and connective tissue disorders/vasculitides coming in the 4th place (5.7%) (Table 1). The most frequently published subjects significantly differed between the pre- and post-pandemic groups ($P = 0.001$).

Clinical study was the most frequent type of study published in both the pre- and post-pandemic periods (51.12% and 48.59%, respectively), followed by case reports in the pre-pandemic period (32.76%) and letters to editors in the post-pandemic period (32.76%) (Figure 2). The publication types differed significantly between the pre- and post-pandemic periods ($P < 0.001$).

Most of the studies published in both pre- and post-pandemic periods were conducted in a single center (64% and 56.6%, respectively). National and international multicenter study frequencies significantly increased during the pandemic ($P = 0.001$) (Figure 3). While most published studies were multidisciplinary during both periods, the frequency of multidisciplinary studies significantly decreased in the post-pandemic era ($P = 0.003$) (Figure 4).

Two hundred sixty-two journals published papers from the dermatology departments in Turkey before the pandemic. This number was 293 for the post-pandemic era. For the pre-pandemic period, the three journals with the highest number of publications from Turkish dermatologists were Dermatologic Therapy, Cutaneous and Ocular Toxicology, and Postepy Dermatologii I Alergologii. After the pandemic started, the highest number of papers were published in Dermatologic Therapy, Journal of Cosmetic Dermatology, and International Journal of Dermatology (Table 2). The distribution of journals was significantly different between the pre- and post-pandemic groups ($P < 0.001$). The distribution of the article subjects of the most popular journal (Dermatologic Therapy) (Table 3) was compared with that of the Indian Journal of Dermatology, Venereology and Leprology, a journal in which the percentage of articles from Turkish dermatologists had decreased in the post-pandemic era. While 28.21% of reports from Turkey published in Dermatologic Therapy were on COVID-19, there were no papers on COVID-19 in the Indian Journal of Dermatology, Venereology and Leprology, and a statistically significant difference was found ($P = 0.003$).

DISCUSSION

In this study, we evaluated the change in publication patterns of Turkish dermatologists throughout the COVID-19 pandemic. There has been a striking increase in the number of papers published by Turkish dermatologists at the beginning of the pandemic. This increase is arguably caused by the changes in the working conditions of physicians. In April 2020, the number of patients seen daily in outpatient clinics was dramatically decreased by the Ministry of Health to decrease circulation in hospitals and dedicate health services to the care of patients with COVID-19. Inpatient clinics considered less “busy” and less “urgent”, among which were dermatology clinics, were shut down and replaced by COVID-19 wards. Many physicians, including dermatologists, were appointed to the COVID-19 clinics, where the healthcare personnel worked in shifts of 24 h followed by 48 to 72 hours’ off time to avoid contamination and exhaustion. There were also nationwide lockdowns, so people, including physicians, were at home without much social interaction. All these factors contributed to an ample amount of free time for Turkish physicians, who,

under normal conditions, work very hard and see an average of 70 patients per day. Additionally, COVID-19 was a new disease, and medical doctors around the world, including those from Turkey, started to conduct research about this disease and publish their findings promptly to elucidate the clinical characteristics and pathophysiology of COVID-19.

The cut-off date for the post-pandemic period was set as August 2022, since in April 2022, the pandemic conditions in Turkey were put to an end entirely, including the shutting down of COVID-19 clinics at hospitals and the end of the obligation to wear a mask in public places.² Thus, we included three more months after this date to allow time for already submitted articles to be published.

Table 1. Frequencies of publications in different subjects in the pre- and post-pandemic groups

Subjects	Groups				Total		P value
	Pre-pandemic		Post-pandemic		Freq.	%	
	Freq.	%	Freq.	%			
Acne	35	3.5	57	4.0	92	3.8	0.000*
Autoimmune bullous disorders	31	3.1	34	2.4	65	2.7	
Bacterial diseases	19	1.9	8	0.6	27	1.1	
Connective tissue disorders/vasculitides	78	7.9	81	5.7	159	6.6	
Cosmetic dermatology	34	3.4	67	4.7	101	4.2	
COVID-19	0	0.0	198	13.9	198	8.2	
Cutaneous lymphoma	19	1.9	34	2.4	53	2.2	
Dermatitis	29	2.9	54	3.8	83	3.4	
Dermatologic surgery	15	1.5	33	2.3	48	2.0	
Dermoscopy	68	6.9	77	5.4	145	6.0	
Drugs & drug reactions	103	10.4	100	7.0	203	8.4	
Fungal diseases	10	1.0	15	1.1	25	1.0	
Genodermatoses	50	5.1	34	2.4	84	3.5	
Hair disorders	40	4.1	59	4.2	99	4.1	
Hidradenitis suppurativa	9	0.9	25	1.8	34	1.4	
Hyperhidrosis-ecrine gland disorders	3	0.3	3	0.2	6	0.2	
Insect/spider bites and ectoparasites	0	0.0	4	0.3	4	0.2	
Lichenoid disorders	16	1.6	10	0.7	26	1.1	
Melanoma	11	1.1	13	0.9	24	1.0	
Nail disorders	6	0.6	5	0.4	11	0.5	
Nevi	10	1.0	6	0.4	16	0.7	
Non-melanoma skin cancer	27	2.7	40	2.8	67	2.8	
Other	67	6.8	48	3.4	115	4.8	
Other neoplastic diseases	27	2.7	30	2.1	57	2.4	
Other papulosquamous diseases	8	0.8	4	0.3	12	0.5	
Parasitic disorders	13	1.3	38	2.7	51	2.1	
Pediatric dermatology	23	2.3	18	1.3	41	1.7	
Photodermatology	6	0.6	5	0.4	11	0.5	
Pruritus	7	0.7	5	0.4	12	0.5	
Psoriasis	92	9.3	122	8.6	214	8.9	
Psychodermatology	8	0.8	20	1.4	28	1.2	
Rosacea	21	2.1	36	2.5	57	2.4	
Systemic diseases and dermatology	28	2.8	17	1.2	45	1.9	
Urticaria	40	4.1	75	5.3	115	4.8	
Viral diseases	16	1.6	23	1.6	39	1.6	
Vitiligo	17	1.7	22	1.5	39	1.6	
Total					2406	100.0	

*P < 0.05, COVID-19: Coronavirus disease-2019

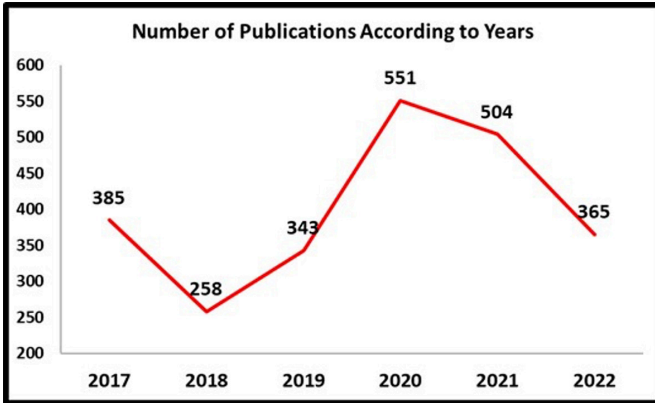


Figure 1. Number of publications performed by dermatologists from Turkey, according to year of publication. Note that the number from 2022 includes only the first seven months of the year

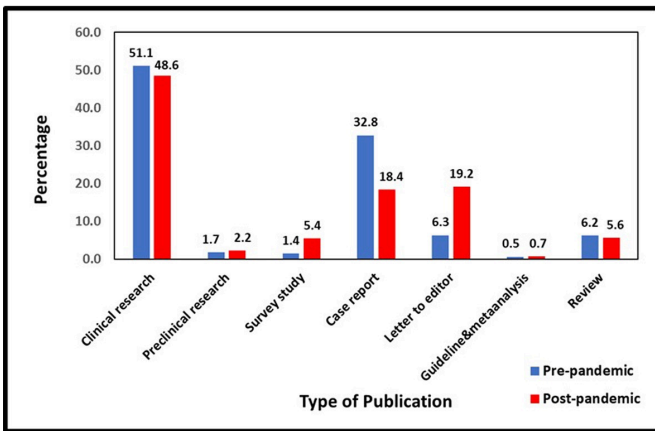


Figure 2. Distribution of types of publications in pre- (blue) and post-pandemic (red) periods

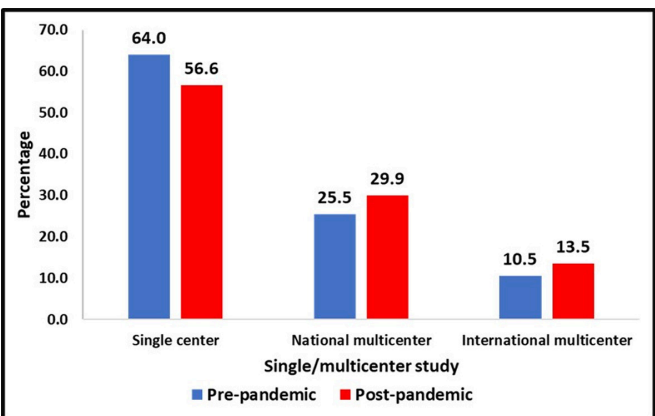


Figure 3. Frequencies of single- and multicenter studies published during the pre- or post-pandemic periods

As expected, the “hot topic” during the pandemic period was COVID-19; although it is not a primarily dermatologic disease, Turkish dermatologists seem to have published considerably on this subject, mainly about the cutaneous findings of COVID-19 and cutaneous drug reactions caused by COVID-19 treatment. Interestingly, the frequency of letters

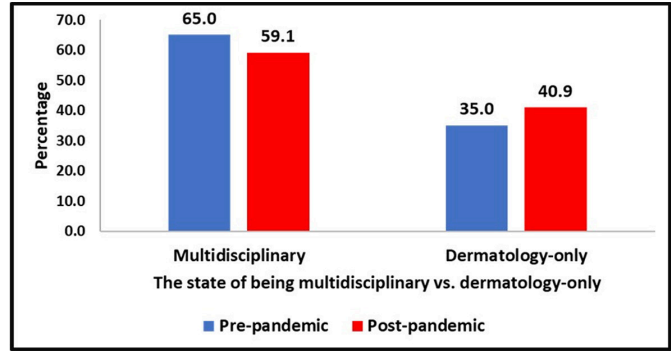


Figure 4. Frequencies of multidisciplinary and dermatology-only studies published during the pre- or post-pandemic periods

increased remarkably and replaced case reports as the second most common type of publication, following clinical research articles. This may partially be caused by the publishing policy of journals, i.e., removing case reports from their article types and accepting case presentations only in letter forms. The rapid publication process, which was especially important during the pandemic due to an increased amount of new data about the new disease, may be another reason for the authors to prefer letters over case reports.

Another remarkable finding is the low percentage of pre-clinical research among other article types by Turkish dermatologists. Although this percentage somewhat increased during the pandemic, it was still very low. Today, the general approach to advances in medicine involves “bench to bedside,” and we believe that increased efforts in pre-clinical research in the field of dermatology would allow Turkish dermatologists to make better and more relevant contributions to the literature.

One of our most striking findings was that in the post-pandemic period, 35.8% of all articles from Turkish dermatologists were published in only two journals, *Dermatologic Therapy* and *Journal of Cosmetic Dermatology*. This is indeed an astonishing finding worth considering. We have a few opinions on why this trend occurred. First, academicians from Turkey have a hard time publishing in general, probably partly because of the quality of papers (due to language challenges since English is not our primary language, low economic sources to produce high-impact scientific research, and time limitations due to high patient numbers seen per clinic day, enforced by the government healthcare system policies). Some journals and editors may be biased or prejudiced against papers from Turkey. Therefore, a Turkish physician-researcher tends to look for journals that have previously published material from Turkey before submitting their work. Thus, a journal that has published articles from Turkey has a higher probability of receiving more and more submissions from Turkey. Second, many journals changed their publishing policies during the COVID-19 pandemic,

Table 2. Distribution of journals in which papers from Turkish dermatologists were published. Journal impact factors were obtained from the Web of Science where applicable, and from Scimago Journal & Country Rank for journals not indexed in the Web of Science

Journal	Groups						Total		Impact factor	P value
	Pre-pandemic			Post-pandemic			Freq.	%		
	Freq.	%	Year**	Freq.	%	Year**				
Dermatol Ther	59	6.0	2019	274	19.3	2021	333	13.8	3.6	0.000*
J Cosmet Dermatol	13	1.3	2018	234	16.5	2021	247	10.3	2.3	
Int J Dermatol	30	3.0	2018	44	3.1	2021	74	3.1	3.6	
Postepy Dermatol Alergol	37	3.8	2018	33	2.3	2020	70	2.9	1.4	
J Eur Acad Dermatol Venereol	29	2.9	2018	39	2.7	2021	68	2.8	9.2	
Cutan Ocul Toxicol	41	4.2	2018	23	1.6	2021	64	2.7	1.6	
An Bras Dermatol	28	2.8	2018	31	2.2	2021	59	2.5	1.7	
Clin Exp Dermatol	17	1.7	2018	31	2.2	2021	48	2.0	4.1	
Indian J Dermatol	27	2.7	2018	22	1.5	2021	49	2.0	1.7	
Dermatol Pract Concept	21	2.1	2018	25	1.8	2021	46	1.9	2.8	
Australas J Dermatol	21	2.1	2018	21	1.5	2021	42	1.7	2	
Indian J Dermatol Venereol Leprol	23	2.3	2018	14	1.0	2021	37	1.5	2.9	
Clin Dermatol	25	2.5	2018	11	0.8	2021	36	1.5	2.7	
J Dermatolog Treat	13	1.3	2018	21	1.5	2021	34	1.4	2.9	
Int J Clin Pract	0	0	-	33	2.3	2021	33	1.4	2.6	
Turk J Med Sci	15	1.5	2018	15	1.1	2020	30	1.2	2.3	
Acta Dermatovenerol Alp Pannonica Adriat	15	1.5	2018	13	0.9	2021	28	1.2	1.2	
Pediatr Dermatol	15	1.5	2018	11	0.8	2021	26	1.1	1.5	
J Am Acad Dermatol	11	1.1	2018	14	1.0	2021	25	1.0	13.8	
North Clin Istanb	10	1.0	2018	12	0.8	2020	22	0.9	1	
Acta Dermatovenerol Croat	17	1.7	2018	3	0.2	2021	20	0.8	0.6	
Contact Dermatitis	8	0.8	2018	12	0.8	2021	20	0.8	5.5	
Indian Dermatol Online J	16	1.6	2018	3	0.2	2020	19	0.8	1.7	
Arch Dermatol Res	5	0.5	2018	13	0.9	2021	18	0.7	3	
J Dtsch Dermatol Ges	11	1.1	2018	7	0.5	2020	18	0.7	3.6	
Turk J Pediatr	9	0.9	2018	9	0.6	2021	18	0.7	0.7	
J Cosmet Laser Ther	13	1.3	2018	4	0.3	2021	17	0.7	1.2	
Skin Appendage Disord	5	0.5	2018	12	0.8	2021	17	0.7	1	
Ann Dermatol	12	1.2	2019	5	0.4	2021	17	0.7	1.6	
Dermatol Surg	10	1.0	2018	6	0.4	2021	16	0.7	2.4	
Br J Dermatol	9	0.9	2018	6	0.4	2021	15	0.6	10.3	
Cutis	9	0.9	2018	6	0.4	2021	15	0.6	1.6	
Skinmed	7	0.7	2018	6	0.4	2021	13	0.5	0.14	
SkinRes Technol	5	0.5	2019	6	0.4	2021	11	0.5	2.2	
Med Bull Şişli Etfal Hosp	4	0.4	2018	9	0.6	2020	13	0.5	1.2	
J Cutan Pathol	5	0.5	2018	9	0.6	2021	14	0.6	1.7	
J Cutan Med Surg	8	0.8	2018	4	0.3	2021	12	0.5	2.3	
Int Ophthalmol	4	0.4	2017	6	0.4	2022	10	0.4	1.6	
Int Wound J	10	1.0	2019	1	0.1	2020	11	0.5	3.1	
Int J Rheum Dis	5	0.5	2017	7	0.5	2020	12	0.5	2.5	
Arch Rheumatol	9	0.9	2018	4	0.3	2021	13	0.5	1.1	
Am J Dermatopathol	9	0.9	2018	3	0.2	2021	12	0.5	1.1	
Allergy	3	0.3	2018	10	0.7	2021	13	0.5	12.4	
Other	343	34.8		348	24.5		691	28.7		
Total							2406	100.0		

*P < 0.05, **The year with the highest number of dermatology papers from Turkey

Table 3. The distribution of article subjects in two exemplary journals in which the frequency of dermatology publications from Turkey has increased (Dermatologic Therapy) and decreased (Indian Journal of Dermatology, Venereology and Leprology)

Subjects	Dermatologic therapy		Indian Journal of Dermatology, Venereology, and Leprology		P value
	Frequency	%	Frequency	%	
Acne	7	2.56%			
Autoimmune bullous	7	2.56%			
Bacterial	2	0.73%			
Connective tissue disorders/vasculitides	10	3.66%			
Cosmetic dermatology	10	3.66%	1	7.14	
COVID-19	77	28.21%			
Cutaneous lymphoma	10	3.66%	2	14.29	
Dermatitis	3	1.10%			
Dermoscopy	10	3.66%			
Drugs	21	7.69%			
Fungal	3	1.10%			
Genodermatoses	2	0.73%	2	14.29	
Hair disorders	6	2.20%	2	14.29	
Hidradenitis suppurativa	7	2.56%			
Melanoma	2	0.73%			
Nail disorders	1	0.37%			
Nevi	1	0.37%			0.003*
Non-melanoma skin cancer	4	1.47%	1	7.14	
Other	6	2.20%	2	14.29	
Other neoplastic diseases	6	2.20%			
Other papulosquamous diseases	1	0.37%	1	7.14	
Parasitic disorders	7	2.56%			
Pediatric dermatology	4	1.47%			
Photodermatology	2	0.73%			
Pruritus	2	0.73%			
Psoriasis	29	10.62%	2	14.29	
Psychodermatology	3	1.10%			
Rosacea	4	1.47%			
Surgery	6	2.20%			
Systemic diseases and dermatology	2	0.73%			
Urticaria	10	3.66%			
Viral diseases	5	1.83%	1	7.14	
Vitiligo	3	1.10%			
Grand total	273	100.00%	14	100.00%	

*P < 0.05

such as quickening peer review procedures and publishing COVID-19-related papers with early and free access options. The journals that were favored by Turkish dermatologists were two of those that changed their publishing policies. Early and free access to articles means earlier and more citations and views, leading to a higher preference by authors for such journals. To prove this hypothesis, we compared

Dermatologic Therapy, which comprised 19.3% of the articles produced by Turkish dermatologists in the post-pandemic era, with a journal that had decreased popularity among Turkish dermatologists (Indian Journal of Dermatology, Venereology and Leprology). None of the publications by the latter journal was about COVID-19, the hot topic of the era. Unlike many other scientific journals, the Indian Journal of Dermatology,

Venereology and Leprology did not change its peer-review and publication policy during the pandemic because of the fear of publishing articles of low scientific value or containing misleading information about the newly emerging disease.³ As of December 2022, both Dermatologic Therapy and the Journal of Cosmetic Dermatology became fully open access, requiring article processing charges from authors. Therefore, we predict that another study conducted within two or three years may demonstrate a substantial decrease in the popularity of these journals among Turkish dermatologists.

Study limitations

There are a few limitations to this study. First, this was an observational study, and the pre- and post-pandemic groups of publications did not encompass the same amount of time. Although we allowed three more months after the cessation of pandemic conditions in Turkey, there may still be articles that have been submitted but not yet published. Many journals allowed fast-track publishing for COVID-19-related studies, thus withholding studies on other subjects, which may have been the reason for the high percentage of COVID-19-related articles.

CONCLUSION

Overall, the COVID-19 pandemic appears to have increased the academic productivity of Turkish dermatologists. The scientific publishing behaviors of dermatologists in Turkey remarkably changed during the pandemic, especially in terms of publication numbers, journals of publication, article types, and subjects of articles. Although COVID-19 is not a primarily dermatologic disease, during the pandemic period, it was the most popular subject among Turkish dermatologists.

We believe that this study will guide young dermatologists in planning and publishing their work.

Ethics

Ethics Committee Approval: Since it did not involve patient data, the study was not applicable for ethical board approval.

Informed Consent: It wasn't obtained.

Authorship Contributions

Concept: B.B., G.K., E.A., Design: B.B., G.K., E.A., Data Collection or Processing: B.B., G.K., E.A., Analysis or Interpretation: B.B., G.K., E.A., Literature Search: B.B., G.K., E.A., Writing: B.B., G.K., E.A.

Conflict of Interest: The authors declared that they have no conflict of interest.

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