

## ORIGINAL ARTICLE

## Comparison of Physicians' Perceptions Regarding Dermatological Diseases

## Hekimlerin Dermatolojik Hastalıklara İlişkin Algılarının Kıyaslanması

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## ABSTRACT

**Background/Aims:** Physicians frequently encounter skin diseases and provide opinions to their patients regarding dermatology. We aimed to assess the perceptions of physicians regarding skin diseases and to compare dermatologists' and non-dermatologist physicians' understanding of specific dermatological issues.**Methods:** Through an online form, participants were asked to respond to sentences indicating whether skin diseases are related to the liver or food with options such as "almost always," "mostly," "half-and-half," "less often," and "almost never." Similarly, they were asked to respond to sentences related to avoiding isotretinoin treatment, the tendency of dermatologists to use corticosteroids, and performing allergy tests in acute urticaria with options as "strongly disagree," "disagree," "partly agree," "agree," and "strongly agree."**Results:** The sentences "skin diseases are of liver origin" and "skin diseases are caused by foods/drinks" received responses of "almost never" or "less often" at a rate of 91.8% and 80.9%, respectively. The total proportions of participants who selected "strongly agree," "agree," or "partly agree" were 53.9% for the statement restricting isotretinoin use and 45.5% for the statement recommending allergy testing in acute urticaria. While 91.8% of dermatologists disagreed with the statement limiting isotretinoin use, 68.3% of non-dermatologist physicians partially or completely agreed. For the statement recommending allergy testing in acute urticaria, 85.8% of dermatologists disagreed, while 55.7% of non-dermatologist physicians partially or completely agreed.**Conclusions:** The popular belief that skin diseases are caused by the liver or food has no basis among physicians. However, contrary to the literature, non-dermatologist physicians have expressed opinions that isotretinoin should be used as little as possible due to potential harm to the liver and that allergy tests should be performed in cases of acute urticaria. Giving importance to these topics during medical education will contribute to changing physicians' perspectives and ultimately benefit public health.**Keywords:** physicians, dermatology, perceptions

## ÖZ

**Amaç:** Dermatologlar gibi dermatolog olmayan hekimler de deri hastalıklarıyla sıklıkla karşılaşmakta ve hastalarına dermatolojiyle ilgili görüş belirtebilmektedir. Çalışmamızda hekimlerin deri hastalıklarına ilişkin algılarının ve belirli dermatolojik konularda dermatologlarla dermatolog olmayan hekimler arasındaki anlayış farklılıklarının saptanması amaçlanmıştır.**Gereç ve Yöntem:** Çevrimiçi anket formu yardımıyla katılımcılardan deri hastalıklarının karaciğerden ya da gıdalardan kaynaklandığını belirten cümleleri "hemen hemen her zaman", "çoğu zaman", "yarı yarıya", "az bir kısmı öyledir" ve "hemen hemen hiçbir zaman" seçeneklerinden biriyle yanıtlamaları; isotretinoin tedavisinden kaçınma, dermatologların kortizon kullanmaya eğilimli oldukları ve akut ürtikerde alerji testlerinin yapılması ile ilgili cümleleri ise "kesinlikle katılmıyorum", "katılmıyorum", "kısmen katılmıyorum", "katılmıyorum" ve "kesinlikle katılmıyorum" seçeneklerinden biriyle yanıtlamaları istenmiştir.**Bulgular:** "Deri hastalıkları karaciğer kaynaklıdır" cümlesine %91.8 oranında, "deri hastalıkları yiyecek/içeceklerden kaynaklanır" cümlesine ise %80.9 oranında "az bir kısmı öyledir" ya da "hemen hemen hiçbir zaman" yanıtları verilmiştir. Isotretinoin kullanımını kısıtlayan cümleye %53.9, akut ürtikerde alerji testi öneren cümleye ise %45.5 oranında "kesinlikle katılmıyorum", "katılmıyorum" ya da "kısmen katılmıyorum" yanıtlarından biri verilmiştir. Isotretinoin kullanımını kısıtlayan cümleye dermatologların %91.8'i katılmazken, dermatolog olmayan hekimlerin %68.3'ü kısmen ya da tamamen katılmaktaydı. Akut ürtikerde alerji testinin önerildiği cümleye dermatologların %85.8'i katılmazken, dermatolog olmayan hekimlerin %55.7'si kısmen ya da tamamen katılmaktaydı.**Sonuç:** Toplumda var olan deri hastalıklarının karaciğerden ya da gıdalardan kaynaklandığı iddiasının hekimlerde karşılığının olmadığı görülmüştür. Ancak dermatolog olmayan hekimler -literatür bilgisinin aksine- isotretinoinin karaciğere vereceği zarar nedeniyle mümkün olduğunca kullanılmaması ve akut ürtikerde alerji testi yapılması gerektiği yönünde görüş belirtmiştir. Tıp eğitimi sırasında bu konulara önem verilmesi, hekimlerin anlayışlarını değiştirerek toplum sağlığına katkı sunacaktır.**Anahtar Kelimeler:** Hekimler, Dermatoloji, Algılar

## Introduction

Dermatology is a field of medicine that deals with common diseases and conditions encountered in medical practice. Both dermatologists and non-dermatologist physicians may come into contact with their patients' or individuals in their immediate surroundings' dermatological issues, requiring them to express opinions about the encountered conditions.

In the daily practice of dermatology, dermatologists frequently encounter patients who have been previously referred by their primary care physician, mentioning that their skin condition could be liver-related, or those who have been put on a strict dietary regimen by a healthcare provider they consulted due to their dermatological issue, or individuals directed to

a dermatologist, having visited the emergency room for acute urticaria, with a recommendation for allergy testing (1). Sometimes, a physician from another specialty may dissuade a patient, who is their relative and is planning to undergo isotretinoin treatment for acne, from proceeding with the treatment due to concerns about its hepatotoxicity. The difficulty for patients in accessing dermatologists, which often forces them to consult the physician they can reach most easily for their skin problems, underscores the importance of the accuracy of non-dermatologist physicians' understanding of dermatological issues.

Studies related to the competence of non-dermatologist physicians in the field of dermatology have mainly focused on family physicians. Initially, Ramsay and Fox demonstrated that primary care physicians lacked sufficient knowledge in identifying common dermatoses (2). In a study conducted in our country with 302 participants, it was found that family physicians had theoretical knowledge errors related to the etiopathogenesis and management of some dermatological diseases (3).

Patients' perceptions and understanding regarding various topics such as the etiopathogenesis of skin diseases, allergy tests, and the use of isotretinoin have been shown in a previous study (1). However, public opinions are influenced by perceptions of physicians, and there is no study in the literature that identifies physicians' understanding of dermatological diseases and compares it with that of dermatologists.

The aim of our study is to determine the perceptions of physicians regarding skin diseases and to reveal the differences in understanding and approach between dermatologists and non-dermatologist physicians in the field of dermatology.

## Materials and Methods

### Study Design and Population

The study was conducted by the physicians of the dermatology department of our institution with the approval of the local ethics committee (Ethics committee approval code: 2023/0551). A questionnaire consisting of up to 14 questions, prepared in Google Forms format, was sent online to dermatologists and non-dermatologist physicians, and the responses obtained from a total of 356 physicians who participated voluntarily were recorded.

### Data Collection

The participants were asked about their general and professional characteristics such as age, year of graduation, gender, academic title, type of institution they work for, specialty, whether they worked as a general practitioner before their assistantship, the duration of working as a general practitioner (if any), and the frequency of encountering dermatological diseases before becoming a specialist. The participants were then asked to respond to statements about dermatological diseases, such as whether skin diseases are related to the liver or to foods/drinks. Response

options included "almost always," "mostly," "half-and-half," "less often," "almost never," and "I don't know." The following three questions asked participants about their opinions on avoiding isotretinoin treatment, the use of corticosteroids by dermatologists for skin diseases, and the necessity of skin prick tests for acute urticaria. The response options for these questions included "strongly disagree," "disagree," "partly agree," "agree," "strongly agree," and "I don't know."

### Statistical Analysis

Statistical analysis of the data was performed using IBM Statistical Package for the Social Sciences (SPSS) version 27. For numerical data, means and standard deviations were calculated, and for categorical data, frequencies were calculated. The chi-square test (or Fisher's exact test, when necessary, based on minimal expected count) was used to compare dermatologists and non-dermatologist physicians. A p-value less than 0.05 was considered statistically significant.

### Results

A total of 356 participants were included in the study, consisting of 85 (23.9%) dermatologists and 271 non-dermatologist physicians. Of the participants, 54.5% were female, and 45.5% were male. The average age was  $38.29 \pm 9.94$ , and the average years of medical practice for the participants were  $13.93 \pm 10.19$ . Among the physicians, 11.2% graduated from the faculty of medicine between 1978 and 1993, 13.2% between 1994 and 2003, 41.9% between 2004 and 2013, and 33.7% between 2014 and 2023. Of the participants, 48.3% were specialists, 25.8% were residents, 10.7% were associate professors, 2.5% were professors, and 12.6% were general practitioners. Among non-dermatologist physicians, the most common specialties were family medicine (11.0%), general practice (11.0%), and pediatrics (9.0%). The most frequently practiced institutions were training and research hospitals (24.7%), state universities (16.3%), city hospitals (15.4%), state hospitals (11.2%), family health centers (10.7%), private hospitals (9.3%), and private practice (7.0%). The percentage of those who encountered dermatological diseases at least once a day, including dermatologists, non-dermatologists who frequently encountered dermatological diseases during the day (15.2%), and those who encountered them once or several times a day (19.4%), was a total of 58.1%.

The statement "skin diseases are of liver origin" received responses with 65.7% indicating "less often," and 26.1% saying "almost never." Regarding the statement "skin diseases are caused by foods/drinks," 73.0% responded "less often," and 11.5% responded "half-and-half" (Table 1). For the sentence "isotretinoin-containing acne medications should be used as little as possible due to the harm they cause to the liver," 53.9% responded with "strongly agree," "agree," or "partly agree" in total. Those who responded to the statement "dermatologists are more likely to prescribe corticosteroids for skin diseases than other specialists" with "strongly agree," "agree," or "partly agree"

totalled 65.2%. For the sentence "I recommend allergy testing if I have a patient or a close relative with acute urticaria," the total percentage of those responding with "strongly agree," "agree," or "partly agree" was 45.5% (Table 1).

Dermatologists and non-dermatologist physicians were compared in terms of their responses to the statement sentences. For the statement "skin diseases are of liver origin," dermatologists chose "almost never" (54.1% vs. 17.3%) while non-dermatologists chose "half-and-half" and "less often" answers (4.8% vs. 0% and 72.3% vs. 44.7%, respectively) significantly more often ( $p < 0.001$ ). For the statement "skin diseases are caused by foods/drinks," dermatologists chose "almost never" (22.4% vs. 3.3%) while non-dermatologists chose "half-and-half" (14.4% vs. 2.4%) answers more often ( $p < 0.001$ ). For the

statement "isotretinoin-containing acne medications should be used as little as possible due to the harm they cause to the liver," dermatologists and non-dermatologist physicians chose the following options respectively: "strongly disagree" (49.4% vs. 3.7%), "disagree" (42.4% vs. 23.6%), "partly agree" (3.5% vs. 40.2%), "agree" (2.4% vs. 18.1%), and "strongly agree" (2.4% vs. 10.0%), with significant differences between the two groups for all responses ( $p < 0.001$ ). For the statement "dermatologists are more likely to prescribe corticosteroids for skin diseases than other specialists," the responses from dermatologists and non-dermatologist physicians were similar except for the "strongly disagree" option (10.6% vs. 4.1% respectively;  $p < 0.05$ ). For the statement "I recommend allergy testing if I have a patient or a close relative with acute urticaria," dermatologists and non-dermatologist physicians chose the following options respectively: "strongly disagree" (52.9% vs. 13.7%), "disagree" (32.9% vs. 27.3%), "partly agree" (9.4% vs. 22.5%), "agree" (3.5% vs. 24.0%), and "strongly agree" (0% vs. 9.2%), with significant differences between the two groups for all responses except "disagree" ( $p < 0.001$ ) (Table 1)."

Among physicians who graduated between 2004 and 2013, the percentage of dermatologists (10.1%) was significantly lower compared to those who graduated in other years (42.5% for 1978-1993, 29.8% for 1994-2003, 32.5% for 2014-2023;  $p < 0.001$ ). For the statement "skin diseases are of liver origin," those who graduated between 2004 and 2013 gave "almost never" as the answer at a rate of 22.5%, and those who graduated between 2014 and 2023 gave it at a rate of 23.5%, while this rate was 45.0% for those who graduated between 1978 and 1993 ( $p < 0.05$ ). The percentage of those who answered "strongly disagree" to the statement "isotretinoin-containing acne medications should be used as little as possible due to the harm they cause to the liver" was 8.7% for those who graduated between 2004 and 2013, while it was 27.5% for those who graduated between 1978 and 1993 ( $p < 0.05$ ).

When comparing dermatologists to non-dermatologist physicians in terms of academic titles, the rates of associate professors and specialists were similar between the two groups (10.6% vs. 10.7% and 48.2% vs. 48.3%, respectively), but among dermatologist participants, there was a significantly higher percentage of residents and professors (35.3% vs. 22.9% and 5.9% vs. 1.5%, respectively). The responses of physicians to sentences questioning their approach and perceptions regarding the relationship between skin diseases and the liver or foods/drinks, dermatologists' use of corticosteroids, and the necessity of allergy testing for urticaria did not change according to academic title. The percentage of those who answered the sentence "isotretinoin-containing acne medications should be used as little as possible due to the harm they cause to the liver" as "agree" was significantly higher among general practitioners compared to specialists (26.7% vs. 9.9%), and the percentage of those who answered it as "strongly

**Table 1.** The percentages of responses to sentences regarding dermatological conditions and daily dermatological practice for all participants, dermatologists, and non-dermatologist physicians.

Skin diseases are of liver origin.						
	Almost never	Less often	Half-and-half	Mostly	Almost always	No idea
All participants	26.1%	65.7%	3.7%	1.7%	0%	2.8%
Dermatologists	54.1%*	44.7%*	0%*	1.2%	0%	0%
Non-dermatologist physicians	17.3%*	72.3%*	4.8%*	1.8%	0%	3.7%
Skin diseases are caused by foods/drinks.						
	Almost never	Less often	Half-and-half	Mostly	Almost always	No idea
All participants	7.9%	73.0%	11.5%	6.5%	0.3%	0.6%
Dermatologists	22.4%*	71.8%	2.4%*	2.4%	0%	0%
Non-dermatologist physicians	3.3%*	73.4%	14.4%*	7.7%	0.4%	0.7%
Isotretinoin-containing acne medications should be used as little as possible due to the harm they cause to the liver.						
	Strongly disagree	Disagree	Partly agree	Agree	Strongly agree	No idea
All participants	14.6%	28.1%	31.5%	14.3%	8.1%	3.1%
Dermatologists	49.4%*	42.4%*	3.5%*	2.4%*	2.4%*	0%*
Non-dermatologist physicians	3.7%*	23.6%*	40.2%*	18.1%*	10.0%*	4.1%*
Dermatologists are more likely to prescribe corticosteroids for skin diseases than other specialists.						
	Strongly disagree	Disagree	Partly agree	Agree	Strongly agree	No idea
All participants	5.6%	23.6%	23.6%	29.5%	12.1%	5.3%
Dermatologists	10.6% <sup>†</sup>	23.5%	23.5%	23.5%	17.6%	0% <sup>†</sup>
Non-dermatologist physicians	4.1% <sup>†</sup>	23.6%	23.6%	31.4%	10.3%	7.0% <sup>†</sup>
I recommend allergy testing if I have a patient or a close relative with acute urticaria.						
	Strongly disagree	Disagree	Partly agree	Agree	Strongly agree	No idea
All participants	23.0%	28.7%	19.4%	19.1%	7.0%	2.5%
Dermatologists	52.9%*	32.9%	9.4%*	3.5%*	0%*	0%
Non-dermatologist physicians	13.7%*	27.3%	22.5%*	24.0%*	9.2%*	3.3%

This table compares the percentages of responses given by dermatologists and non-dermatologist physicians in the respective column. If the difference was statistically significant, \* or <sup>†</sup> symbol was added to the values in the respective sections.  
\* $p < 0.001$   
<sup>†</sup> $p < 0.05$

agree" was significantly higher among general practitioners compared to residents, specialists, and associate professors (28.9% vs. 4.3%, 2.6%, and 6.4%, respectively), while the percentage of those who "disagreed" was significantly lower among general practitioners compared to residents and specialists (6.7% vs. 29.3% and 33.1%, respectively), and the percentage of those who "strongly disagreed" was significantly lower among general practitioners compared to professors (2.2% vs. 33.3%) ( $p < 0.001$ ).

## Discussion

The comments made by patients who visit the dermatology clinic regarding the source of their diseases, the tests/examinations they want the dermatologist to perform, and the treatments they want or do not want, are likely influenced by statements made by non-dermatologist physicians they have previously consulted or have arisen from anonymous collective consciousness that sourced from these statements over time. However, to date, there has been no study summarizing the views of physicians on specific dermatological issues.

Among the participating physicians in our study, over 90% responded with either "almost never" or "less often" to the statement "skin diseases are of liver origin." Dermatologists significantly preferred the response "almost never," while non-dermatologist physicians favored "less often." In general, it can be said that our participants' perceptions on this matter are in line with evidence-based data. Dermatological conditions caused by liver diseases are not widespread enough to support the judgment that "skin diseases are of liver origin." Liver cirrhosis does have dermatological manifestations such as jaundice, palmar erythema, spider angiomas, and Terry's nails (4). On the other hand, various dermatological conditions like pruritus, urticaria, vasculitis, pigmentary disorders, xanthomas, connective tissue diseases, and lichen planus can accompany autoimmune liver diseases, hereditary and developmental liver disorders, hepatitis C and B virus infections and liver neoplasms even though these dermatological conditions are not primarily caused by the aforementioned liver diseases, and more common skin conditions such as acne, eczema, and psoriasis, which are often suspected by patients to be related to liver diseases, do not involve liver pathologies in their etiopathogenesis (5-7).

The statement "skin diseases are caused by foods/drinks" received responses of "almost never" or "less often" in over 80% of cases. Among dermatologists, the percentage of those who chose these two responses was 94.2% while among non-dermatologist physicians, it was 76.2%. Additionally, it was observed that dermatologists were significantly more likely to respond with "almost never" compared to non-dermatologist physicians. Based on this finding, it can be said that dermatologists tend not to attribute dermatological diseases to nutrition. In the literature, there is a wealth of data suggesting a relationship between nutrition and dermatological conditions. For

example, high-calorie diets and whey protein have been implicated in triggering acne pathogenesis, low glycemic index diets have been shown to improve acne and psoriasis, Western-diet have been linked to exacerbating seborrheic dermatitis, and intestinal dysbiosis has been found to be influential in diseases like psoriasis, atopic dermatitis, acne, rosacea and lichen sclerosus (8-11). However, the concept of alleviating symptoms by avoiding specific foods as perceived by patients is more applicable to childhood food allergies and does not necessarily relate solely to skin symptoms nor does it have a prominent place in dermatology practice (12). In conclusion, the claim that foods are the "source" of dermatoses and the notion of managing dermatological diseases by providing a diet list based on an 'allergy test' are not evidence-based approaches. It can be said that the majority of physicians have a correct opinion on this matter.

The most significant difference in opinions between dermatologists and non-dermatologist physicians was observed in responses to the statement "isotretinoin-containing acne medications should be used as little as possible due to the harm they cause to the liver." Dermatologists responded to this statement with "strongly disagree" or "disagree" at a rate of 91.8% while non-dermatologist physicians chose these responses at a rate of 27.3% in total. In the literature, it is reported that isotretinoin can elevate liver enzymes in up to 15% of patients about three times the normal levels, but this condition is transient and asymptomatic, even if treatment is continued, it returns to normal (13). Acute liver damage, which is possible for other retinoids such as acitretin and etretinate, has not been described for isotretinoin (13, 14). Dermatologists are expected to have a well-founded opinion on isotretinoin, a medication they encounter repeatedly during their education, to get accustomed to following literature data about it, prescribe it to numerous patients every day, to follow up with those who use it, and to observe closely short and medium-term results. However, our study has shown that the fear of isotretinoin in the community is also shared by non-dermatologist physicians. Isotretinoin is a recommended treatment for severe nodulocystic acne in guidelines and is a drug that affects all steps of acne pathogenesis (15, 16). Moreover, due to the increasing antibiotic resistance in the community in recent years, it has become an increasingly important option (17). The fact that a statement like "...should be used as little as possible..." about such a medication is partially or fully agreed by nearly 70% suggests that physicians need to be better informed about isotretinoin during their medical education and after graduation.

The responses to the above sentence, which restricts the isotretinoin use, were also influenced by academic titles. General practitioners were more likely to respond "agree" to the sentence about isotretinoin compared to specialists, and more likely to respond "strongly agree" compared to residents, specialists, and associate professors. They were less likely to respond

"disagree" compared to residents and specialists, and less likely to respond "strongly disagree" compared to professors. The different responses of general practitioners from residents and professors can be explained by the high rate of dermatologist participants at these two academic levels. However, since the rates of specialists and associate professors were similar between dermatologists and non-dermatologists, the differing responses of general practitioners from specialists and associate professors can be interpreted as a decrease in inaccurate preconceptions related to isotretinoin treatment as academic levels progress.

The total percentage of those who responded "partly agree," "agree," and "strongly agree" to the sentence "dermatologists are more likely to prescribe corticosteroids for skin diseases than other specialists" was similar for both dermatologists and non-dermatologist physicians, at approximately 65%. It is well known that topical or systemic corticosteroids are widely used for a broad range of dermatological indications (18, 19). This finding in our study could be interpreted as non-dermatologist physicians avoiding corticosteroid use when treating dermatological diseases and referring patients to dermatologists when they consider corticosteroid treatment necessary. However, in everyday practice, non-dermatologist physicians may have a lower threshold than dermatologists in deciding to treat any skin disease with corticosteroids, and sometimes they may choose these drugs even in cases where corticosteroids should not be preferred. The significantly higher percentage of those who responded "strongly disagree" to this sentence in dermatologists compared to non-dermatologists may be considered a result of this practical experience of them.

Among dermatologists and non-dermatologist physicians, the second significant difference in perception was evident in responses to the statement "I recommend allergy testing if I have a patient or a close relative with acute urticaria". Approximately 86% of dermatologists chose "strongly disagree" or "disagree" options in this statement while this rate was 41% among non-dermatologist physicians. Allergy tests in the perception of physicians or patients most commonly refer to skin prick tests, measuring specific immunoglobulin E (IgE) antibody levels in the serum and patch tests. Among these tests, the first two can be used in the management of diseases with type I hypersensitivity reactions while the last one is associated with type IV hypersensitivity reactions (20). For instance, food allergy, which is included in the indications for skin prick tests or measuring specific IgE levels, can manifest with urticaria, this condition is more likely to occur in the early years of life and is an infrequent cause of acute urticaria (12, 20). International guidelines for urticaria management also do not recommend the use of allergy tests such as skin prick tests or specific IgE measurements (21). In light of all these data, it can be concluded that the knowledge that allergy tests are not essential in the management

of acute urticaria should be disseminated among non-dermatologist physicians.

The percentage of respondents who answered "almost never" to the statement "skin diseases are of liver origin" and "strongly disagree" to the statement "isotretinoin-containing acne medications should be used as little as possible due to the harm they cause to the liver" was significantly lower among those who graduated between 2004 and 2013 compared to other graduation groups. However, in the same group, the percentage of dermatologists was also significantly lower than in the other groups. The differences in responses based on the year of graduation can be attributed to the relative scarcity or abundance of dermatologists in the respective groups, rather than being primarily driven by the preferences shaped by the era of medical education.

Our study has several limitations. The use of a standardized online survey format for responses, rather than conducting interviews with open-ended questions, may have hindered the participants' ability to fully express their original opinions on the relevant topics. Another limitation is the potential randomization error resulting from sharing the online survey only with physicians accessible to the authors, which may have led to concentration of responses among physicians who graduated in specific years. Thirdly, the proportion of participants in specific specialties may have been higher or lower than the actual distribution of physicians in those specialties in our country due to a similar reason.

It was observed that physicians in our country do not attribute skin diseases to the liver or diet, and this does not contradict scientific data on these topics. However, among non-dermatologist physicians, there was a presence of erroneous beliefs suggesting the need to avoid medications containing isotretinoin due to potential liver damage and the necessity of conducting allergy tests in patients with acute urticaria. Our findings highlight the importance of emphasizing specific topics in dermatology during both medical education and postgraduate training. The accurate beliefs that physicians acquire and disseminate will contribute positively to the public's health awareness and enable dermatology to collaborate effectively with other medical specialties.

### Ethics

**Ethics Committee Approval:** Ethics approval was obtained from local ethics committee of our university (decision number:2022/0341, Date: 23.08.2023).

**Informed consent:** The authors declared that informed consent form was signed by the participants.

**Authorship Contributions:** H.A and M.A.K performed the research. H.A., and M.A.K. designed the research study. H.A and M.A.K. collected and H.A. processed the data. H.A., analyzed and interpreted the data. H.A. wrote the paper. M.A.K. performed the critical review. Authors have read and approved the final manuscript.

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