



ORIGINAL ARTICLE

Perceptions and Behavior Regarding Skin Health and Skin Care Products: Analysis of the Questionnaires for the Visitors of Skin Health Expo 2018

Young Bok Lee, Min Kyung Shin¹, Joung Soo Kim², Young Lip Park³, Sang Ho Oh⁴, Dong Hyun Kim⁵, Ji Young Ahn⁶, Sang Ju Lee⁷, Hye One Kim⁸, Sang Seok Kim⁸, Hyun Jeong Lee⁹, Mi Woo Lee¹⁰, Yang Won Lee¹¹, Mi Youn Park⁶

Department of Dermatology, College of Medicine, The Catholic University of Korea, ¹Department of Dermatology, College of Medicine, Kyunghee University, ²Department of Dermatology, Hanyang University College of Medicine, Seoul, ³Department of Dermatology, Soonchunhyang University College of Medicine, Bucheon, ⁴Department of Dermatology and Cutaneous Biology Research Institute, Yonsei University College of Medicine, Seoul, ⁵Department of Dermatology, CHA University College of Medicine, Seongnam, ⁶Department of Dermatology, National Medical Center, ⁷Yonsei Star Skin and Laser Clinic, ⁸Department of Dermatology, Hallym University College of Medicine, Seoul, ⁹CNP Skin Clinic, Seongnam, ¹⁰Department of Dermatology, Asan Medical Center, University of Ulsan College of Medicine, ¹¹Department of Dermatology, Konkuk University School of Medicine, Seoul, Korea

Background: Social standards for skin health have changed and have led to a rise in the general population's interest to achieve flawless skin. **Objective:** To survey the Korean public's perception of skin health and dermatologists and skin-health-related behaviors. **Methods:** A total of 355 participants of the Skin Health Expo 2018, held by the Dermatological Research Foundation of the Korean Dermatological Association from September 14 to 16, 2018, completed a questionnaire that assessed demographics, status, and behaviors regarding skin health. The questionnaire also included lifestyle characteristics, satisfaction, behavioral factors, and perceptions regarding skin-care products. **Results:** Participants were using various skin-care products including toners, lotions, hydrating or nutrition creams, sunscreens, essences, serums, facial masks and packs, body, hand, and foot moisturizers, eye creams, and hair products. The participants

believed that the most reliable source of information on skin-care product recommendations was the dermatologist (41.55%). However, purchases were also being made at skin-care product stores (27.64%) based on the recommendation of a friend or acquaintance (40.11%). The results also revealed that 23.8% of participants experienced side effects from using skin-care and cosmetic products, and about 40% of participants could not yet distinguish hospitals run by dermatologists. **Conclusion:** Demand for skin-care products has been increasing, and dermatologists should provide proper information about skin health to prevent adverse effects from skin-care products. Educational and informative activities, such as the expo planned by dermatologists, are necessary to improve skin health in the general population. (Ann Dermatol 32(5) 375 ~ 382, 2020)

-Keywords-

Dermatologists, Public perception, Skin health

Received March 13, 2020, Revised April 20, 2020, Accepted for publication April 22, 2020

Corresponding author: Mi Youn Park, Department of Dermatology, National Medical Center, 245 Eulji-ro, Jung-gu, Seoul 04564, Korea. Tel: 82-2-2260-7315, Fax: 82-2-2277-0915, E-mail: miyeon.park@nmc.or.kr
ORCID: <https://orcid.org/0000-0002-1824-8309>

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Copyright © The Korean Dermatological Association and The Korean Society for Investigative Dermatology

INTRODUCTION

As flawless skin emerges as a defining feature of beauty and status, there is no longer satisfaction in thinking that healthy skin only implies a lack of underlying medical conditions. As such, the demand for wrinkle-reducing, scar-eliminating, and antiaging skin-care treatments and procedures

continues to grow rapidly¹. Nowadays, the market is flooded with unverified advice to achieve flawless and beautiful skin, tempting countless consumers to seek knowledge and perform various home remedies on themselves. This growing interest in healthy and flawless skin indicates the need to understand consumers' perceptions and behavior regarding skin health. However, the amount of research on this subject in Korea remains limited.

The authors of this study gave questionnaires to the visitors of Skin Health Expo 2018 to identify their perceptions regarding skin health and the expo. Afterward, the findings were analyzed to reveal useful insights for dermatologists and dermatological societies to determine their possible actions in response to the public's demand for better skin appearance and health.

MATERIALS AND METHODS

Subject

The poll focused on the opinions of willing participants who visited Skin Health Expo 2018, held by the Dermatological Research Foundation of the Korean Dermatological Association at Seoul Trade Exhibition & Convention (SETEC) from September 14 to 16, 2018. A total of 355 visitors answered the questionnaires for data analysis, forming the final analysis sample. Moreover, the research design was authorized by the Institutional Review Board overseeing Uijeongbu St. Mary's Hospital (IRB No. UC19ECSI0118).

Questionnaire

The authors developed the questionnaire, which includes 10 questions on the respondents' demographic information, 24 on their perceptions and behavior regarding skin-care products, and 9 on their perceptions of and satisfaction with the Skin Health Expo. See Supplementary Material for information.

RESULTS

Demographic and lifestyle characteristics

1) Sex and age distribution

The answers provided by a total of 355 visitors, comprised of 99 male (27.89%) and 256 female (72.11%), were analyzed. Among them, 20.0% (71 persons) were in their 20s, another 20.0% (71) were in their 30s, 24.2% (86) were in their 40s, 17.2% (61) were in their 50s, 11.3% (40) were in their 60s, and 7.3% (26) were in their 70s or older.

2) Regions and occupations represented

Among the participants, 68.45% (243 persons) lived in

Seoul, 23.1% (82) in Gyeonggi, and 3.1% (11) in Incheon. Thus, the majority had come from the Seoul-Gyeonggi-Incheon region.

For occupations, 29.3% (104 persons) were housewives, 21.7% (77) were office workers, 13.5% (48) were self-employed, and 12.1% (43) were students. Moreover, there were service workers, people involved in technical trades, and unemployed participants.

3) Sleeping hours and stress

Among the 351 participants who had answered the question about sleeping hours, 191 (54.3%) answered that they slept for relatively sufficient hours, while 121 (34.4%) slept too little. Furthermore, another 44 (12.5%) slept for sufficiently long hours, while the remaining 5 (1.42%) slept for extremely short hours.

As for health-related lifestyle factors, 258 (73.3%) of the participants answered that they had been lifelong non-smokers, and only 23 (6.53%) were current smokers.

Less than half of the participants (161 persons or 45.35%) indicated that they exercised regularly.

As for how they would rate their stress levels, 204 participants (57.95%) said they were a little stressed, and 96 (27.27%) said they were quite stressed. Moreover, 41 participants (11.65%) indicated that they hardly felt stressed, while 11 (3.1%) indicated that they were extremely stressed out.

4) Satisfaction with skin health

When asked to rate their satisfaction with their skin conditions (from "1" indicating "not satisfied at all" to "10" indicating "very satisfied"), the participants gave an average rating of 4.9 points. Men had an average rating of 5.3 points, while women had a lower rating of 4.87%. Moreover, the self-rated skin satisfaction score showed differences among age groups, with participants in their 20s giving themselves an average rating of 4.42 points, 30s with 4.97 points, 40s with 5.12 points, 50s with 5.20 points, 60s with 4.95 points, and 70s or older with 4.62 points.

5) Related behavioral factors for skin health

The participants were asked to select multiple options among the listed behavioral factors necessary for skin health. Drinking enough water garnered the most votes, which is 146 (41.9%) out of 348 participants, followed by getting complete sleep (129 persons or 37.1%), applying moisturizers (26 persons or 7.47%), abstaining from smoking and drinking (14 persons or 4.02%), applying sun-block products (14 persons or 4.02%), and taking vitamins (9 persons or 2.59%).

Perceptions and behavior regarding skin-care products

1) Self-assessed skin types

When the participants were asked to assess their own skin types, 140 (39.44%) of 355 chose the mixed type, 113 (31.8%) chose dry, 56 (15.77%) chose oily, and 24 (6.76%) chose sensitive.

2) Skin-care products used

As for the types of skin-care products the participants were using, 252 of the 355 (70.79%) indicated that they use toners; 223 (62.64%) use lotions; 169 (47.47%) use hydrating or nutrition creams; 168 (47.19%) use sunscreens; 115 (32.3%) use essences; 106 (29.78%) use serums; 99 (27.81%) use facial masks and packs; 94 (26.4%) use body, hand, and foot moisturizers; 91 (25.56%) use eye creams; and 73 (20.51%) use hair products.

3) Channels of purchases

When asked to identify the major channels where the participants purchase skin-care products, 97 of the 351 (27.64%) chose specialized cosmetic and skin-care shops (known as “drug stores” in Korea), 63 (17.95%) chose department stores, 42 (11.97%) chose single cosmetic brand shops, 33

(9.40%) chose hospitals and clinics other than dermatologists’ clinics, 31 (8.83%) chose online shopping sites, 30 (8.55%) chose large grocery store chains, and 26 (7.41%) chose dermatologists’ clinics (Table 1).

4) Important factors of purchase

As for the factors they considered as important in purchasing skin-care products, 108 of the 350 participants (30.86%) picked price, 68 (19.43%) picked brand or company names, 66 (18.85%) picked ingredients (no parabens, all-natural ingredients, etc.), 56 (16.0%) picked stated functions (brightening, antiaging, acne care, etc.), and 24 (6.86%) picked prior experience (with sample products, etc.). Moreover, quantity (chosen by 12 persons or 3.43%), packaging design (7 persons or 1.71%), and brand ambassadors and celebrities (1 person or 0.29%) were factors not regarded as important by the majority of the participants (Table 1).

5) Trusted sources of information on skin-care products

As for the most trusted sources of information on skin-care products, 145 of 349 participants (41.55%) picked dermatologists, 98 (28.08%) picked friends and acquaintances, 38 (10.89%) picked sales representatives, 32 (9.17%) picked online reviews, and 23 (6.59%) picked pharmacists (Table 1). On the other hand, as for the actual sources of information

Table 1. Behavior related to the purchase of skin care products

Questionnaire	Option	Answer (%)
Channels of purchases	Specialized cosmetic and skin-care shops	27.64
	Department stores	17.95
	Single cosmetic brand shops	11.97
	Hospitals and clinics other than dermatologists’ clinics	9.40
	Online shopping sites	8.83
	Large grocery store chains	8.55
	Dermatologists’ clinics	7.41
Important factors of purchases	Price	30.86
	Brand or company names	19.43
	Ingredients	18.85
	Stated functions (brightening, antiaging, acne care, etc.)	16.00
	Prior experience (with sample products, etc.)	6.86
	Quantity	3.43
	Packaging design	1.71
	Brand ambassadors and celebrities	0.29
Most trusted sources of information on purchase	Dermatologists	41.55
	Friends and acquaintances	28.08
	Sales representatives	10.89
	Online reviews	9.17
	Pharmacists	6.59
Actual sources of information on purchase	Friends and acquaintances	40.11
	Dermatologists	20.20
	Online reviews	16.60
	Pharmacists	8.02

that most influenced participants' purchases, 140 (40.11%) chose friends or acquaintances, 74 (20.20%) picked dermatologists, and 58 (16.60%) selected online reviews (Table 1). When asked whether they thought their dermatologists were aware of skin-care products, 138 (39.54%) participants gave an affirmative answer, 113 (32.38%) expressed doubt, and 98 (28.08%) indicated that they had not given the subject much thought.

6) Past dermatological conditions

Out of the 355 participants, 85 (23.88%) indicated that they had never suffered from dermatological conditions in the past. On the other hand, the other 270 had suffered at least 1 condition each. Freckles were the most commonly recognized condition (32.3%), followed by acne (15.73%), contact dermatitis (12.64%), psoriasis (12.08%), atopic dermatitis (10.11%), urticaria (8.43%), alopecia (7.58%), verruca vulgaris (6.74%), and dermatomycosis (6.74%).

Out of the 270 participants who indicated having suffered from at least 1 dermatological condition, 53.24% obtained their diagnoses at dermatologists, 21.58% diagnosed themselves, 19.42% were diagnosed by general or primary practitioners, 9.71% were assessed by pharmacists, 9.35% were examined by skin-care specialists, 8.63% got diagnoses from their family, friends, and acquaintances, and 5.4% were assessed by traditional Korean traditional medicine doctors.

Out of the 347 participants who answered the relevant question, 207 persons (59.65%) indicated that they were able to identify clinics or hospitals run by dermatologists,

while the remaining 140 (40.35%) said they were not able to do so (Table 2).

7) Experiences with side effects from skin-care products

Out of the 332 participants who answered the relevant question, 79 (23.8%) indicated that they experienced side effects from using skin-care and cosmetic products. From these, however, only 26 (31.91%) sought treatment from dermatologists (including those at general hospitals), 20 (25.32%) went to skin-care specialists, another 20 (25.32%) went to pharmacists, and 11 (13.92%) went to doctors other than dermatologists. When asked why they did not seek treatment from dermatologists, 47.1% answered that their symptoms were not severe, and 23.93% answered that their conditions improved shortly after they stopped using the products.

A total of 345 participants answered questions regarding complications after using skin-care and cosmetic products. From them, 90 (26.09%) reported that they experienced reddening, 87 (24.35%) experienced itchiness, 57 (16.52%) experienced prickly or burning sensations, and 35 (10.14%) experienced extreme dryness.

8) Dermatologists' role in consumers' choice of skin-care and cosmetic products

When asked to rate how influential consultations with dermatologists would be on their choice of skin-care and cosmetic products on a 10-point scale (with "1" indicating "not helpful at all" and "10" indicating "very helpful"), the participants gave dermatologists' role an average rating of

Table 2. Public awareness of dermatologists in Korea

Questionnaire	Option	Answer
Can you identify a hospital run by a dermatologist?	Yes	59.65
	No	40.35
How much do you think a dermatologist's treatment and consultation will help you choose the right cosmetic for your skin?	1, 'not helpful at all'~10, 'can be completely solved'	5.93±1.99
If you have purchased skin care products on the recommendation of a dermatologist, how was your satisfaction after purchasing it?	Very satisfied	5.81
	Satisfied	22.09
	So so	43.60
	Not satisfied	4.65
	Not satisfied at all	2.33
What do you expect from a dermatologist regarding cosmetics?	Have no experience	21.51
	Recommend cosmetics that suit me	36.96
	Guide to the correct method of using cosmetics	35.24
	Treatment for cosmetic side effects	15.19
	Development of functional cosmetics	5.16
	Nothing special to expect	5.73

Values are presented as percentage (%) or mean±standard deviation.

5.93 points. In particular, 129 of the 349 participants (36.96%) expected dermatologists to recommend suitable products, 123 (35.24%) expected dermatologists to provide guidance on the appropriate use of products, 53 (15.19%) expected dermatologists to provide care and treatment for symptoms because of complications, and 18 (5.16%) expected dermatologists to develop functional skin-care and cosmetic products (Table 2).

9) Satisfaction with moisturizers, whitening products, acne care products, sunblock products, and hair products purchased

The satisfaction score of skin care products were not statistically different between the products on the market and the prescribed ones (moisturizer: 5.71 ± 2.17 vs. 5.64 ± 2.40 ,

whitening cosmetics: 5.30 ± 2.03 vs. 5.37 ± 2.15 , acne cosmetics: 5.16 ± 2.29 vs. 5.22 ± 2.21 , sunscreens: 6.14 ± 2.02 vs. 5.53 ± 2.39 , and hair products: 5.56 ± 2.00 vs. 5.12 ± 2.45 , respectively). However, majority of the participants thought that it was necessary to use the prescribed skin care products when there is a skin problems (Table 3).

Experience in the skin health expo

1) Types of visits

Out of the 355 participants, 82.25% were members of the general public, while 17.75% were visitors with special purposes (industry experts, buyers, etc.). Meanwhile, 35.01% were unaccompanied, 28.85% were accompanied by family members, 26.61% were accompanied by friends or ac-

Table 3. Satisfaction score on skin care products

Questionnaire	Option	Answer
Moisturizer		
Satisfaction score with moisturizers on the market	1, 'not satisfied at all' ~ 10, 'fully satisfied'	5.71 ± 2.17
Satisfaction score with the prescribed moisturizers by a dermatologist or doctor	1, 'not satisfied at all' ~ 10, 'fully satisfied'	5.64 ± 2.40
Do you think it is necessary to use moisturizers prescribed by the dermatologist or doctor if you have skin problems?	Yes	64.93
	No	35.17
Whitening cosmetic		
Satisfaction score with the whitening cosmetics on the market	1, 'not satisfied at all' ~ 10, 'fully satisfied'	5.30 ± 2.03
Satisfaction score with the prescribed whitening cosmetics by a dermatologist or doctor	1, 'not satisfied at all' ~ 10, 'fully satisfied'	5.37 ± 2.15
Do you think it is necessary to use whitening cosmetics prescribed by the dermatologist or doctor if you have skin problems?	Yes	44.95
	No	55.05
Acne cosmetic		
Satisfaction score with the acne cosmetics on the market	1, 'not satisfied at all' ~ 10, 'fully satisfied'	5.16 ± 2.29
Satisfaction score with the prescribed acne cosmetics by a dermatologist or doctor	1, 'not satisfied at all' ~ 10, 'fully satisfied'	5.22 ± 2.21
Do you think it is necessary to use acne cosmetics prescribed by the dermatologist or doctor if you have skin problems?	Yes	72.73
	No	27.27
Sunscreen		
Satisfaction score with the sunscreen on the market	1, 'not satisfied at all' ~ 10, 'fully satisfied'	6.14 ± 2.02
Satisfaction score with the prescribed sunscreen by a dermatologist or doctor	1, 'not satisfied at all' ~ 10, 'fully satisfied'	5.53 ± 2.39
Do you think it is necessary to use sunscreen prescribed by the dermatologist or doctor if you have skin problems?	Yes	65.64
	No	35.36
Hair cosmetic		
Satisfaction score with the hair products on the market	1, 'not satisfied at all' ~ 10, 'fully satisfied'	5.56 ± 2.00
Satisfaction score with the prescribed hair products by a dermatologist or doctor	1, 'not satisfied at all' ~ 10, 'fully satisfied'	5.12 ± 2.45
Do you think it is necessary to use hair cosmetics prescribed by the dermatologist or doctor if you have skin problems?	Yes	76.84
	No	23.16

Values are presented as mean \pm standard deviation or percentage (%).

acquaintances, and 7% were accompanied by colleagues or school peers.

In particular, 73.95% arrived at the expo by public transportation (metro and/or buses), 10% by foot, 8.96% by car, 2.24% by bicycle, and 2.24% by regional buses. Moreover, word-of-mouth recommendation from acquaintances, etc., was the most common channel through which they discovered the expo (31.37%), followed by the Internet (16.25%), social media (14.57%), TV and radio (12.04%), and letters of invitation (9.52%). The percentage of visitors who discovered the expo via social or popular media had increased from the previous year.

2) Satisfaction with the expo

The participants were allowed to make multiple selections of the topics of the expo they found most engaging. As such, dry skin care and moisturization emerged as the most popular topic (43.34%), followed by antiaging care (22.95%), and sensitive skin care (20.68%). Furthermore, various product trials and demonstration sessions emerged as the most satisfying activities of the expo (39.02%), followed by the tour of booths on display (37.28%), and product consultation and purchase (10.69%).

On the other hand, lectures by dermatologists (5.49%), discussions with beauty creators (2.6%), and one-on-one consultations with dermatologists (1.45%) generally had low satisfaction ratings. Moreover, the majority (53.74%) of the participants said that they spent two to three hours touring the expo, 22.13% toured up to one hour, 17.24% toured four to five hours, and 4.31% toured for six hours or more.

Among the participants, 73.81% expressed their willingness to attend to the next skin health expo, 21.27% were undecided, and 4.92% were not willing to attend the next skin health expo.

DISCUSSION

This study presented the results of the questionnaires given to the visitors of Skin Health Expo 2018, in relation to their perceptions and behavior regarding skin health. This event was hosted by the Dermatological Research Foundation of the Korean Dermatological Association for the second time to provide proper information on skin health and introduce excellent skin-care products and skin-care services. The visitors' satisfaction with the expo revealed that it was a successful expo, with three out of four visitors expressing their desire to participate again.

The rising social and economic costs of treating dermatological and other related conditions have increased. The educational and preventive approach to dermatological

care has been considered to be more important than the treatment of identified and existing skin problems. Education, an important element of public health along with public medicine and health policy, can efficiently reduce the socioeconomic costs of dermatological conditions. Preferred knowledge acquisition methods were studied according to the characteristics of patients and the public in order to efficiently communicate dermatological knowledge in several countries²⁻⁵. The authors of this study believed that understanding the general public's perceptions and behavior regarding skin health was the first crucial step toward achieving that goal and sought to ascertain conditions necessary to educate the Korean public on how to take care of their skin better.

There has been a growing social trend in Korea that promotes interest in dermatological conditions and skin care, while the general public's demand for advice and treatment from dermatologists is also rising. Nevertheless, the Korean public is bombarded with unverified and promotional claims, as well as services and explanations from nonspecialists on popular and social media.

In this study, the participants revealed that they used various skin-care products and purchased them at a skin-care store based on the recommendation of a friend or acquaintance. Here, 23.8% of participants experienced side effects from using skin-care and cosmetic products. The participants thought that the most reliable source of information on skin-care products recommendations was the dermatologist. Therefore, Korean dermatologists now need to consider and explore the most effective ways to deliver accurate knowledge on dermatological science and correct consumers' misguided behavior. As such, the first step toward achieving this is to ascertain the specific channels or methods through which the general public gains information on skin care and dermatology.

In reality, Korean dermatologists are compelled to treat as many patients as possible in short periods. They find it nearly impossible to spend adequate time on consulting patients and general consumers to satisfactory extents. The need among patients for continued access to the information after their treatment ends also persists. As such, dermatological societies and the Korean government should explore ways to enhance dermatologists' expertise, keep the general public correctly informed on dermatological matters, and cater better to consumers' rising demand for skin care. Thus, the development of a more comprehensive and newer approach is required.

On the other hand, the current overflow of misinformation suggests that insufficient efforts or opportunities have been made to inform the Korean public of the diverse ways in which dermatologists' expertise and services contribute to

national well-being and quality of life. Consequently, the general public's perception of dermatological science influences future health policy and related research. Moreover, Brezinski et al.⁶ stress the importance of educational policy, campaigns, and activities to inform the public of the value of dermatologists' expertise in improving overall public health.

In this study, more than 40% of participants who attended the Skin Health Expo could not yet distinguish hospitals run by dermatologists. In practice, there are many clinics that treat skin beauty run by non-dermatological doctors in Korea, so it is difficult for people to recognize the hospitals run by dermatologists. Therefore, dermatologists need to continue to publicize the hospital run by dermatologists. The percentage of participants who were satisfied with the skin care products on the recommendation of a dermatologist was less than 25%. The expectations were not high for the role of a dermatologist in choosing skin care products (Table 3). Therefore, a lot of efforts from dermatologists are required to meet the needs of skin care products. Therefore, education is necessary to better inform public understanding and perception of dermatologists' expertise. The public's perception is critical because these perceptions represent the importance of dermatologists' contribution to skin health care. Furthermore, the public's perception also may influence policy decisions regarding resource allocation for health care and research⁶. Although the Skin Health Expo 2018 was considered to be held successfully, the lectures by dermatologists, discussions with beauty creators, and one-on-one consultations with dermatologists had low satisfaction ratings. Various ways or channels suitable for participants will be needed for public education.

This study was limited to analyzing only the findings of a single survey of visitors at a particular event. However, it is still substantial as it surveys the opinion of the general public rather than patients. As such, the findings of popular perceptions and behavior provided herein may be more representative of the Korean population.

Institutional measures and dermatologists' attention are needed for the Korean public to obtain appropriate dermatological care and information. Moreover, regional and national programs of education should be introduced to emphasize the importance of dermatologists' expertise and services to policymakers, public health specialists, and medical professionals. In other words, campaigns, expos, and such programs of major and national scales are needed, along with dermatologists' own commitment and greater cooperation from the society and policymakers, to provide correct information for the public.

SUPPLEMENTARY MATERIALS

Supplementary data can be found via <http://anndermatol.org/src/sm/ad-32-375-s001.pdf>.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

FUNDING SOURCE

None.

DATA SHARING STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Young Bok Lee, <https://orcid.org/0000-0002-8642-2479>
 Min Kyung Shin, <https://orcid.org/0000-0001-9834-7931>
 Joung Soo Kim, <https://orcid.org/0000-0002-3014-9645>
 Young Lip Park, <https://orcid.org/0000-0002-6532-3156>
 Sang Ho Oh, <https://orcid.org/0000-0002-4477-1400>
 Dong Hyun Kim, <https://orcid.org/0000-0003-3394-2400>
 Ji Young Ahn, <https://orcid.org/0000-0002-6766-9978>
 Sang Ju Lee, <https://orcid.org/0000-0003-2228-7121>
 Hye One Kim, <https://orcid.org/0000-0001-5846-0008>
 Sang Seok Kim, <https://orcid.org/0000-0001-9717-9710>
 Hyun Jeong Lee, <https://orcid.org/0000-0002-0430-5990>
 Mi Woo Lee, <https://orcid.org/0000-0003-4669-9454>
 Yang Won Lee, <https://orcid.org/0000-0003-1268-1248>
 Mi Youn Park, <https://orcid.org/0000-0002-1824-8309>

REFERENCES

1. Martínez-González MC, Martínez-González RA, Guerra-Tapia A. Aesthetic dermatology and emotional well-being questionnaire. *J Cosmet Dermatol* 2014;13:336-345.
2. Xia FD, Rana J, Young GJ, Das S, Alizadeh F, Joyce C, et al. Generational influence on patient learning preferences in dermatology. *J Am Acad Dermatol* 2018;78:1221-1223.
3. Armstrong AW, Idriss NZ, Kim RH. Effects of video-based, online education on behavioral and knowledge outcomes in sunscreen use: a randomized controlled trial. *Patient Educ Couns* 2011;83:273-277.
4. Marks R. Dermatology under siege: public education is the way ahead. *J Am Acad Dermatol* 2003;49:151-153.
5. Marks R. The public health approach to the burden of common skin diseases in the community. *J Dermatol* 2001;28:

- 602-605.
6. Brezinski EA, Harskamp CT, Ledo L, Armstrong AW. Public perception of dermatologists and comparison with other medical specialties: results from a national survey. *J Am Acad Dermatol* 2014;71:875-881.