

## ORIGINAL CONTRIBUTIONS

# Perception and attitude of adults toward cosmetic products amid COVID-19 pandemic in Malaysia

Ali Haider Mohammed MD<sup>1</sup>  | Ali Blebil PhD<sup>1</sup> | Juman Dujaili PhD<sup>1</sup> | Bassam Abdul Rasool Hassan PhD<sup>2</sup>

<sup>1</sup>School of Pharmacy, Monash University Malaysia, Jalan Lagoon Selatan, Selangor, Malaysia

<sup>2</sup>Department of Pharmacy, Al Rafidain University College, Baghdad, Iraq

## Correspondence

Ali Haider Mohammed, School of Pharmacy, Monash University Malaysia, Jalan Lagoon Selatan, 47500 Bandar Sunway, Selangor, Malaysia.  
Email: alishanshool93@gmail.com

## Funding information

This study was funded by School of Pharmacy, Monash University Malaysia, via pharmacy practice grant.

## Abstract

**Background:** The use of cosmetics is growing among both male and female consumers due to the availability of different brands. While there is an increase in the usage of cosmetic products, it is concerning whether the consumers are aware of the safety of the products.

**Aims:** This study aimed to widely explore consumers' perceptions and attitudes toward cosmetics within the context of the COVID-19 pandemic.

**Methods:** A cross-sectional study was carried out among adults in Selangor, Malaysia. Thirty-three questions divided into three dimensions (socio-demographic parameters, assessment of perception, and assessment of attitude) were developed and validated to be answered by cosmetics consumers. Descriptive and inferential statistical analysis was done using SPSS.

**Results:** A response rate of 87% was achieved, and the mean age of participants was  $33 \pm 7.2$ . The overall perception of consumers indicates low levels of perception and moderate level of attitude toward cosmetic products. There was a positive correlation and high relationship between participants' perception and attitude ( $p = 0.001$ ,  $r = 0.72$ ). A significant association was observed between demographic data of respondents and their attitude and perception toward cosmetic products. Participants were unaware that sharing of cosmetic products could lead to bacterial infection and possibly increased the chance of contracting COVID-19.

**Conclusion:** This study displayed a nonchalant perception and attitude of Malaysian adults toward cosmetic products by focusing on aesthetics rather than health safety. Therefore, it is recommended to raise awareness on the composition and effects of cosmetic products, increase the practice of hygiene and dissuade the sharing of cosmetics to reduce transmissions of COVID-19.

## KEYWORDS

attitude, cosmetic products, perception

## 1 | INTRODUCTION

The Pharmaceutical Affairs Act defines cosmetic products as any product which is applied to enhance the facial features or overall appearance of the user.<sup>1</sup> The usage of cosmetic is varied as per

population background where young generation tends to use cosmetic for aesthetic purposes, while older generation tends to use cosmetic products to counteract the effects of aging. The beauty and health market in Malaysia are developing quickly. According to the Malaysia Department of Statistics, the aggregate spending in

the Malaysian Cosmetics Method is about US\$407 million, and this demand is met mainly by imports rather than domestically manufactured products. The Malaysian cosmetic industry is ever-growing, which makes it an evolving field of interest for both consumers and manufacturers.<sup>2</sup>

The use of cosmetic products usually improves the appearance and helps with the demeanor of the user, their use can be associated with multiple known and unknown adverse reactions from less severe local reactions such as irritation, burning sensation, and contact urticarial rash to systemic reactions such as infections and rhinoconjunctivitis.<sup>3</sup> Therefore, awareness among consumer is very important not only in terms of their economy but also in the aspect of health. Various individuals utilize beautifying agents found to be unaware of the potential dangers that can undermine their wellbeing while using them.<sup>4</sup> Additionally, wearing makeup could increase the likelihood of infection as applying regular makeup will allow the ingredients and particles including any microbes to enter the open micro holes in the skin, and this would lead to infection, dermatitis, and inflammation.<sup>5</sup>

Several literature reviews revealed that cosmetics, for example, moisturizers, shampoos, and eye cosmetics, can instigate microbial development and conceivably cause contaminations.<sup>6</sup> A previous study reported that mostly all of makeup kits (skin and eye cosmetics) in the beauty salon were contaminated with bacteria, including *Streptococcus* species and *E-coli*, and around 20% of them were contaminated with fungus and yeast. Therefore, the incidence of bacteria, fungi, and potentially viruses through cosmetics is admissible, which leads to the dissuasion against cosmetic sharing.<sup>7</sup> However, there is evidence that as long as the cosmetic product makes the users feel more attractive and presentable, they are more inclined toward using those products despite the presence of potentially toxic ingredients.<sup>8</sup> A literature study revealed that some extremist customers in the cosmetic industry are willing to endure minimal side effects as long as their appearance is enhanced, for example, enduring a tingling sensation in the lips when using a lipstick which temporarily enlarges the lips.<sup>9,10</sup>

The general consensus is that perception and attitude in consumer behavior within the cosmetic industry is influenced by lifestyle factors such as religion, income, and age-related factors which often manifests in the interest in aesthetics and improving one's personal appearance. The perception and attitude of consumers toward cosmetic products is essential as it helps identifying areas in which information needs to be disseminated on the safe manufacturing and usage of cosmetics. By identifying the current attitude and perception, it would provide the reasons and the rationale which drives their consumer behavior, and this can help in improving both manufacturing and distribution processes.<sup>11-13</sup>

In response to the COVID-19 pandemic, there is still no published data that evaluate the survival rate of the virus on or in cosmetic products; however, beauty experts have recommended that proceeding with regularly scheduled beauty regimen should be done cautiously, as the virus can potentially spread through sharing of cosmetic products.<sup>14-16</sup> Professional dermatologists stated that

plastic makeup could be a source of COVID-19 infection because the virus is able to live on these plastic and metal cases for up to three days, handling and applying makeup, and then touching face could be a very real way to contract the virus. Lip products, if unsuitably cleaned, are particularly risky because lipsticks and lip liners are a natural gateway to respiratory tract.<sup>16</sup> This gave the urge and motivation to conduct such a study highlighting how consciousness public is to the health effects of cosmetic use amid COVID-19 pandemic. Therefore, this study aimed to investigate the perception and attitude of adults toward cosmetic products within the context of the COVID-19 pandemic in Malaysia.

## 2 | MATERIALS AND METHODS

### 2.1 | Study design and setting

A cross-sectional study design was employed to assess consumers' perceptions and attitudes toward cosmetic products. Attitude is a settled and distinct way of thinking which one adopts toward a subject; thus in this paper, attitude was described as the dominant way of thinking which the consumers have toward cosmetics. On the other hand, perception is defined as the process in which one receives knowledge and makes their own inferences and conclusions toward a subject. In this paper, perception was described as the own knowledge which consumers have toward cosmetics. This study was conducted in Selangor, Malaysia, where public places in this district, such as educational institutions, community pharmacies, and community halls, were selected to perform this study. Participants were recruited fairly from both urban and rural areas to avoid overrepresenting of one region from another and to reduce sampling bias. The participants for this study were selected via convenient sampling based on the following criteria: (1) Malaysian citizens, (2) aged 18 and above, (3) current user of the cosmetic product(s), and (4) not working or studying in the cosmetic field. A total of 559 cosmetic consumers were approached but only 484 successfully agreed to participate in the study (response rate 87%).

### 2.2 | Research instrument and data collection procedure

A self-administered questionnaire was extracted from a previously validated questionnaire, after some modifications to adapt the current pandemic, as a data collection tool.<sup>11</sup> The instrument tool was specifically designed to be run among cosmetic user, and questionnaire was reviewed by two dermatologists to ensure validity of the survey to examine perception and attitude of cosmetic users amid COVID-19 pandemic. The questionnaire's validity and reliability test were then carried out by conducting a pilot study involving 40 cosmetic users. The internal consistency value of the scales in the current study was 0.81, the content validity of the scale was 0.89, and the test-retest reliability was 0.92. Basically, there were 33 questions on the questionnaire, which were divided into three

parts as follows: (a) socio-demographic characteristics, (b) perceptions, and (c) attitudes. The demographic background section consisted of 13 questions, and the rest of the sections consisted of 10 questions, respectively. The possible responses to the questionnaires comprised a five-point Likert scale for the perception and attitudes sections.

Data were collected, from August to November 2020, via face-to-face interviews to minimize the risk of any possible misinterpretation by the participant or having incomplete surveys. People in the selected areas were approached by a research assistant, and the study was explained to them. Interested consumers were asked to answer all the questions in the questionnaire. On average, the participants were able to complete the questionnaire within 10 minutes. All the participants in the study were asked to read explanatory statement describing the purpose and objectives prior to participate in the study.

### 2.3 | Data analysis

The data collected in this study were tabulated and analyzed using SPSS version 25. The perception and attitude were assessed using the following scores: 1 for "Strongly Disagree," 2 for "Disagree," 3 for "Neutral," 4 for "Agree," and 5 for "Strongly Agree." The highest score for each section was assigned a total of 50 marks. Descriptive statistics such as frequency, mean, and standard deviation were used to describe the participants' characteristics. The correlation between knowledge and attitudes was identified via Pearson's rank correlation. The level of 0.05 was used as the cut point for statistical significance with a confident level of 95%. Moreover, any differences between the participants' perception and attitude scores and the demographic characteristics were analyzed via the independent-test and ANOVA test.

## 3 | RESULTS

### 3.1 | Demographic characteristics of participants

Among the respondents, the majority were female as they were 82.2% of the total respondents, and the mean age of participants was  $33 \pm 7.2$  years old. The results indicated that cosmetic use is consistent among all income levels, but when one has higher disposable income, they are more likely to spend it on more expensive cosmetic products. The amount of money spent on cosmetics monthly was also distributed fairly among the income groups indicating varied yet consistent purchasing behavior. Urban residents constituted the majority of cosmetics users in this study representing 70.9% of the total respondents. 65.5% of the respondents who use makeup were single, with the remainder 34.5% being married people. The complete demographic information of the respondents is indicated in Table 1.

### 3.2 | Consumers' perception toward cosmetic products

The perception of the adult cosmetics users indicates their understanding of the products which they use. 26.2% (127) of users agreed that the ingredients on the product labels are misleading, while 39.9% respondents are uncertain whether they are being misled by the ingredients on the labels. While 237 (48.9%) of the respondents are uncertain whether the side effects of cosmetics are proven by scientific studies, a similar percentage of 47% (228) are uncertain that natural cosmetic products are better than chemical products. In the context of the COVID-19 pandemic, majority of the adult consumers 79.8% are uncertain whether the sharing of cosmetics increases the likelihood of spreading the virus. The overall perception of Malaysian Adult Consumers indicates low levels of knowledge and much uncertainty on the composition and effects of cosmetic products, as indicated in Table 2.

### 3.3 | Consumers' attitude toward cosmetic products

A majority of the respondents (50.2%) agree that the use of cosmetic products increases their beauty and appearance. There is also an indication that the respondents would prefer to have good skin and improved appearance rather than know the potential side effects of the products which they use as 47.5% of the respondents indicate. The adult consumers show their preference of use of products with halal certification as 55.6% agree, and 12.2% strongly agree that use of halal-certified products is their preferred option. Cumulatively, 234 (48.4%) agree that halal cosmetic products have good quality. The cosmetic users believe the information which they read on product labels though only 91 respondents (18.8%) query the information which they see. The overall attitude of participants toward cosmetic products is moderate as reported in Table 3.

### 3.4 | Association between demographic characteristic and participants' perception and attitude

There was a statistically significant difference between gender for perception and attitude in which the female mean score is higher which asserts that females have more knowledge and attitude toward cosmetic products than their male counterparts. Besides, middle-age group (36–50) showed statistically to have more perception and attitude about cosmetics than younger ones. Students were significantly noted to have a higher attitude and perception score than the working class, which is inverse to the income levels. Students have less income than the working class, yet they tend to be more knowledgeable on cosmetics products and developments. Urban residence statistically impacted the attitude and perception

TABLE 1 Socio-demographic characteristics of respondents (N = 484)

Characteristic	Frequency (%)
Gender	
Male	86 (17.8)
Female	398 (82.2)
Age (years)	
Mean (SD): 33 (7.2)	
18–35	249 (51.4)
36–50	198 (41)
≥51	37 (7.6)
Ethnicity	
Malay	154 (31.8)
Chinese	263 (54.4)
Indians	63 (13)
Others	4 (0.8)
Marital status	
Single	317 (65.5)
Married	167 (34.5)
Religion	
Islam	154 (31.8)
Buddha	228 (47.1)
Hindu	24 (5)
Others	78 (16.1)
Education level	
Secondary education and below	163 (33.7)
Tertiary education and above	321 (66.3)
Type of residence	
Urban	343 (70.9)
Rural	141 (29.1)
Occupation	
Student	122 (25.2)
Working	362 (74.8)
Smoking status	
Smoker	71 (14.7)
Non-smoker	413 (85.3)
Monthly income	
<RM 1000	26 (5.4)
RM 1000–RM 2000	89 (18.4)
RM 2001–RM 3000	174 (35.9)
>RM 3000	195 (40.3)
Expenses for cosmetic products (monthly)	
<RM 50	86 (17.8)
RM 50–RM 100	137 (28.3)
RM 101–RM 200	167 (34.5)
>RM 200	94 (19.4)
Sleeping time (per day) (h)	
4–6	273 (56.4)

(Continues)

TABLE 1 (Continued)

Characteristic	Frequency (%)
6–8	211 (43.6)
Intake of drinking water (per day) (cups)	
<2	0 (0)
2–4	67 (13.8)
5–8	241 (49.8)
>8	176 (36.4)

of the Malaysian adult customers, as this is where the products are widely marketed and distributed. In this study, consumers noted that their minimum monthly expenditure on cosmetics was <RM 50 but their capacity to spend more on cosmetic products increased when their income exceeded RM 3000 as it would imply more disposable income. The remaining independent variables that have statistically significant association with perception and attitude mean score of respondents are documented in Table 4.

Lastly, there is correlation between attitude and perception as depicted in Table 5 ( $p < 0.05$ ), and the  $r$  coefficient (0.72) indicated a statistically strong relationship between perception and attitude. It is assumed that the first impression of a cosmetic product can affect consumers' perceptions and hence determine their attitudes toward the product. Therefore, the participants' perceptions toward cosmetic products would influence their attitudes toward using cosmetic products.

## 4 | DISCUSSION

This study is considered to be the first of its kind to explore widely the level of attitude and perception toward cosmetic products amid COVID-19 pandemic in Malaysia. The use of high-quality and sanitary cosmetics leads to an overall improvement in appearance and reduced the incidence of adverse side effects which are typically experienced from poorly manufactured cosmetics. The use of counterfeit and poorly manufactured cosmetics is associated with an increase in cancer and other health problems. Adult cosmetics users in the current study are still predominantly women as compared to men. However, in the past five years, there has been an upsurge in the numbers of men who use cosmetics. This trend is becoming more popular as reflected in the digital media where more men are even becoming public users and marketers of cosmetic products.<sup>17</sup> Therefore, these studies collectively indicate that even though women are still the dominant users of cosmetic products, there is an equally significant population of male users.

There is a significant number of participants who state that they use cosmetic products to enhance their beauty and appearance. Basically, it is the major motivation which drives the consumers to purchase cosmetic products as they wish to improve their current appearance and fix their features which they are unhappy with.<sup>18</sup> This is the motivation which the cosmetic industry capitalizes on by continuously launching and modifying products which

TABLE 2 Knowledge of Malaysian adult consumer toward cosmetic products (N = 484)

Questions	Strongly disagree N (%)	Disagree N (%)	Uncertain N (%)	Agree N (%)	Strongly agree N (%)
Ingredients stated on the product label can be misleading	16 (3.3)	37 (7.6)	193 (39.9)	127 (26.2)	111 (23)
Branded cosmetic products have good quality	4 (0.8)	13 (2.7)	94 (19.4)	213 (44)	160 (33.1)
The price of cosmetic products in Malaysia is affordable	53 (11)	46 (9.5)	132 (27.3)	179 (36.9)	74 (15.3)
The effects of cosmetic products are proven by scientific studies	23 (4.8)	15 (3.1)	237 (48.9)	132 (27.3)	77 (15.9)
Natural cosmetic products are better than chemical ones	9 (1.9)	17 (3.5)	228 (47)	149 (30.7)	81 (16.7)
Some of Cosmetic products have side effects	2 (0.4)	54 (11.2)	301 (62.2)	98 (20.2)	29 (6)
Cosmetic products have expiry date	26 (5.4)	62 (12.7)	239 (49.4)	105 (21.6)	53 (10.9)
Sharing cosmetic products with family members/friends can transmit bacterial infection	19 (3.9)	42 (8.7)	282 (58.3)	131 (27)	10 (2.1)
Sharing cosmetic products with others increases the chance of contracting COVID-19	0 (0)	35 (7.2)	386 (79.8)	41 (8.5)	22 (4.5)
Cosmetic products should be disinfected regularly	1 (0.2)	24 (4.9)	167 (34.5)	236 (48.8)	56 (11.6)

TABLE 3 Attitude of Malaysian adult consumer toward cosmetic products (N = 484)

Questions	Strongly disagree N (%)	Disagree N (%)	Uncertain N (%)	Agree N (%)	Strongly agree N (%)
Use cosmetic product because it enhances my beauty and appearance	7 (1.4)	60 (12.4)	115 (23.8)	243 (50.2)	59 (12.2)
Obtain good skin condition rather than to know the side effects	39 (8.1)	46 (9.5)	169 (34.9)	104 (21.5)	126 (26)
Inappropriate use of cosmetics causes rashes, skin darkening and wrinkles	5 (1)	23 (4.8)	227 (46.9)	113 (23.3)	116 (24)
Past experiences influence my purchasing of cosmetic products.	41 (8.5)	82 (16.9)	162 (33.5)	132 (27.3)	67 (13.8)
Buy natural cosmetic products if the price is inexpensive	11 (2.3)	48 (9.9)	129 (26.7)	168 (34.7)	128 (26.4)
Prefer to use natural cosmetic products	2 (0.4)	31 (6.4)	210 (43.5)	118 (24.5)	123 (25.4)
Believe the information on the product label	37 (7.6)	54 (11.2)	265 (54.8)	87 (18)	41 (8.4)
I prefer to use 70% alcohol for sanitizing my cosmetics	28 (5.8)	59 (12.2)	249 (51.4)	101 (20.9)	47 (9.7)
Use cosmetic products with halal certification	8 (1.7)	17 (3.5)	131 (27)	269 (55.6)	59 (12.2)
Use halal cosmetic products because the products have good quality	32 (6.6)	45 (9.3)	173 (35.7)	162 (33.5)	72 (14.9)

improve the appearance of the facial features of both men and women. This is consistent with the study of Handriana et al (2020), who indicated that some women were unaware that they were unhappy with their facial features until they came across cosmetic products made for those features. Similarly, they stated that there is currently a product for every feature of the face, and with more innovation and technology, the products are becoming more invasive and moving toward having semi-permanent to permanent features.<sup>19</sup>

However, this is contrary to the projected perception and attitude which the adult consumers have toward the cosmetic

products. This is consistent with the study of Alwhaibi et al (2020), which indicates that the cosmetic users have very limited knowledge on the ingredients of the products which they use.<sup>20</sup> The users also have very little knowledge of the effects which these products have on their skin. Cosmetic products are mainly made from chemical ingredients which often have negative side effects due to reactivity and the use of synthetic materials. This is consistent with the study of Haque et al (2018), which indicates that the presence of chemically adverse ingredients in cosmetic products is prevalent especially in counterfeit products that are infiltrating the market.<sup>21</sup>

**TABLE 4** Differences between knowledge and attitude score with participants' demographic characteristics

Characteristic	Perception score mean	<i>p</i>	Attitude score Mean	<i>p</i>
<b>Gender</b>				
Male	26.2	0.019*	24.3	0.003*
Female	34.5		37.1	
<b>Age (years)</b>				
18–35	33.8	0.0001*	37.5	0.002*
36–50	42.3		44.3	
≥51	29.1		32.2	
<b>Ethnicity</b>				
Malay	40.1	0.015*	42.6	0.004*
Chinese	36.5		32.3	
Indian	33.4		33.6	
Others	32.9		32.8	
<b>Marital status</b>				
Single	34.5	0.04*	39.7	0.135
Married	41.3		40.1	
<b>Religion</b>				
Islam	38.8	0.157	44.5	0.02*
Buddha	39.4		42.7	
Hindu	39.2		36.2	
Others	37.9		34.3	
<b>Education level</b>				
Secondary education and below	26.6	0.004*	30.4	0.001*
Tertiary education and above	35.9		43.5	
<b>Type of residence</b>				
Urban	36.4	0.001*	44.7	0.001*
Rural	23.1		33.2	
<b>Occupation</b>				
Student	39.3	0.006*	40.8	0.001*
Working	21.4		31.4	
<b>Monthly income</b>				
<RM 1000	28.3	0.01*	39.2	0.317
RM 1000–RM 2000	31.7		39.8	
RM 2001–RM 3000	35.2		40.1	
>RM 3000	39.4		41.3	
<b>Expenses for cosmetic products (monthly)</b>				
<RM 50	40.3	0.004*	36.5	0.001*
RM 50–RM 100	30.1		42.3	
RM 101–RM 200	36.7		32.9	
>RM 200	39.8		43.2	

\* Statistically significant ( $p < 0.05$ )

Our findings indicate that the customers are aware that there is a risk of having rashes, irritated skin, and dark marks due to the use of poorly manufactured cosmetic products. This is a side effect of some synthetic products which have high reactivity with human skin

being used in the production of cosmetics.<sup>22</sup> However, this seems to be the only deterrent for customers using the cosmetic products which they can lay their hands only. This is supported by the studies of Atari et al (2017) reveal that despite knowing of these adverse

side effects, there are still users who prefer to use the products and look for way to counter the side effects rather than entirely discarding the cosmetic products.<sup>23</sup>

There is also a high level of uncertainty among participants that sharing of cosmetic products can lead to the spread of bacterial infection and increase the chance of contracting COVID-19. The cases of illnesses and spreading of bacteria through sharing of cosmetics is popular and has been investigated by a previous research which studied how publicly accessible samples in a cosmetic product store in the United Kingdom contributed to the spread of shingles. This is similar to the findings of Butschke et al (2016), which revealed that consumers were least likely to consider the hygienic implications of using the products and were more inclined to find out how they would like the appearance and texture of these products on their skin, though this is slightly changing due to alertness of the high contagion level of the coronavirus.<sup>24</sup> In the wake of the COVID-19 global pandemic, it is essential to note how the disease is contagious and mostly transmitted from person to person by inhaling tiny droplets and through shared surfaces. Cosmetics constitute one of the most common surfaces which touch the face, eyes, and mouth of an individual; thus, they can be considered as a surface to be wary of in the context of transmission of the global pandemic. Recently, cosmetics scientist and experts reported that plastic makeup tubes, bottles, and compacts can be a concern for transmission of the virus as the virus could live on these plastic and metal cases for up to 72 hours. Therefore, public is advisable to avoid sharing cosmetics along with having regular sanitizing of cosmetic products to reduce the risk of microbial infection.<sup>16</sup>

Moreover, the age group which had higher perception and attitude was the 36–50 years, which contrasted with the popular expectation that younger population would use cosmetic products more. This would suggest the onset of increased self-consciousness and body dysmorphia in people as they age.<sup>25</sup> They become more conscious of their features and are increasingly critical of their looks. This leads to the manufacturers of cosmetic products to prey on these insecurities and push products which would falsely address these body image issues.<sup>26</sup> The issue of body dysmorphia and cosmetic product usage is interlinked, and either issue tends to be fueled by the other. Therefore, this is a point of discussion where the reliance of cosmetic products to counteract the effects of aging can be investigated in the adult and growing populations.<sup>27</sup>

The present study also showed there was significantly higher rate of single people who use cosmetic products than those who were married. The use of cosmetic products is often used to gain attention of the opposite sex and to be generally considered as an attractive person. This notion is supported by the study of Pu (2020),

who found that there was a higher reliance on the use of cosmetic products by those who were aiming at attracting a life partner than those who are already married. Married people often need to portray a conservative image; thus, they would be sparing and modest with their use of cosmetics.<sup>28</sup> However, another study indicated that married people have a higher attitude and perception of cosmetic products, which would suggest that they take their time to have sufficient product knowledge and consider the effects it would have on their livelihood before they spend money on cosmetic products.<sup>26,29</sup>

The income levels of people who spend much on cosmetic were also significant. There were varied categories of income levels, and there was a fairly even distribution among those who spend money on buying cosmetic product. Therefore, this shows that cosmetic products are purchased by all the people along the income spectrum.<sup>30</sup> While this may suggest that cosmetic products are a necessity for any person despite their income, it also indicates the variety of options from which customers can buy their products. This is made possible by cheap products which cater for the lower-income groups and high-end products which cater for the higher income population.

This proved by the current study where most of respondents agreed that branded products have good quality. There is a belief that the branded cosmetic products which have higher prices are better and make the users to appear more beautiful and good-looking than what they are. This idea, according to, is fueled by the marketing campaigns and use of influential people in modeling the branded cosmetic products. However, there has been a negative psychological reaction due to the close of beauty salons and spas amid COVID-19 pandemic, leading to the increase of informal salons and cosmetic sharing, despite any expertise knowledge. Therefore, this asserts how attitude influences the consumption of even branded products, rather than actual knowledge of the production composition.<sup>14</sup>

The focus on aesthetics and appearance overrides the consideration of the composition of products within the cosmetics industry.<sup>31</sup> The customers indicate that as long as they have an impressionable appearance, they can bear any mild side effects which the products may impose on them. There is little effort by both customers and the producers to share the information on the ingredients which they use in production. According to Brooks (2017), there is evidence that the adverse reactions which customers have from the use of cosmetics use often emanates from the lack of knowledge ingredients and their effects when they react with human skin.<sup>32</sup>

Furthermore, the use of cosmetic products in the current study was noticed to be higher in urban residents rather than rural residents. The use of cosmetics in urban areas is often fueled by the mass marketing communication which is done for cosmetic products, and this drives consumers to purchase more cosmetic products.<sup>33</sup> The media communication and aggressive marketing tactics in the urban areas shape the knowledge of customers into viewing cosmetics as an essential part of their lifestyle, therefore influencing them to buy. In the rural areas, the usage of cosmetic products is lower, though the population, especially women, do care about their beauty and

TABLE 5 Correlation between perception and attitude

Correlation	<i>r</i>	<i>p</i>
Perception with attitude	0.72	<0.001 <sup>†</sup>

<sup>†</sup>Value is significant:  $p < 0.05$

appearance.<sup>34</sup> However, due to limited access to the mass media channels of communication they are less likely to succumb to marketing ploys or have themselves buying products because they have seen their demonstrated effect to be very appealing.

The influence of religion on the attitude of customers toward cosmetic products is also recognized in this study. The study was among Malaysian consumers where Islam is the main religion and it greatly influences the lifestyle choices of its devout followers. However, most of the respondents in this study were Buddhists, yet the preference for halal-certified products was higher, which sheds insight into how the Malay Muslim majority dictates Malaysian culture and norms in a way that affects preferences across all religions. Customers indicate that they prefer halal-certified products, and they perceive them to be of a higher quality than competing products. According to Khan et al (2020), the impact of halal certification on customer knowledge and attitude is evident in the purchasing behavior of the customers and how they perceive them.<sup>35</sup>

Another rising trend in the production and distribution of cosmetic products is the use of natural ingredients. Natural ingredients are proven to have less allergens and adverse reactions on skin among cosmetic product users.<sup>36</sup> This makes these cosmetic products which are made using natural ingredients to be more preferable and considered to be more effective by the consumers. However, this may be slow in adaptation because, as discussed before, there is still more concern on the appearance and aesthetics of the cosmetic products more than the composition.<sup>37</sup> Among the respondents, nearly half of them strongly agree and agree that they prefer natural cosmetic products, and this proportion increases to 60 percent when asked if they would prefer natural cosmetic products if they were inexpensive. This sheds light of the cost-benefit analyses of cosmetics users as it suggests that the aesthetic benefits of synthetic cosmetics could outweigh both the economic and health costs of such products, while the health benefits together with the aesthetic benefits of natural cosmetic products may not outweigh the economic cost. While there may be varied levels of perception, the usage of cosmetics remains high which suggests that attitude plays a superior role than perception. Despite having limited level of perceptions on cosmetics, consumers would have a positive attitude toward them which would encourage usage and consumption.

Within the context of the COVID-19 pandemic, there is need to raise awareness that the virus is possible to be spread through the sharing of cosmetics among infected parties. The virus is communicable and attacks the respiration system; therefore, it can be spread through sharing cosmetic products which would have come in contact with an infected person.<sup>38</sup> This is a rising concern of the spreading of the virus through sharing of cosmetics, especially given that there is a significant impact population which is asymptomatic. This could be averted by stressing on the use of rubbing alcohol to thoroughly sanitize products even when there is less likelihood that they will be shared with anyone, as a precautionary measure.

## 5 | LIMITATION AND FUTURE STUDY

The current study was only limited to cosmetics users to have a user-centric result, instead of generalized results which include non-cosmetics users. While a comparison with non-users of cosmetic products has not been made, the study would be reflecting user-centric results that can be used as a basis for further study.

## 6 | CONCLUSIONS

The attitude and perception of Malaysian adult customers of cosmetic products are limited and require more attention. It is recommended to encourage more awareness on cosmetic product composition by integrating these initiatives into the purchasing process. When customers buy the cosmetic products, they could be given vital information in simple ways which will enable any user, despite their level of knowledge to grasp the information regarding the composition of their purchases. Meanwhile, in the wake of the COVID-19 pandemic, it is essential to note that cosmetic products can be probably a potential carrier of the virus and can lead to the spread of the virus when users share the cosmetic products with an infected user. This calls for more stringent hygiene standards through sanitizing cosmetic products and eliminate them from being a source of contagion.

### ACKNOWLEDGEMENT

I would like to acknowledge School of Pharmacy, Monash University Malaysia, for their support.

### CONFLICT OF INTEREST

The authors have declared no conflicts of interest for this article.

### AUTHOR CONTRIBUTIONS

AHM and BARH designed the study. AHM and AB conducted, analyzed data, and drafted the study. AB and JD proofread the study. AB and JD reviewed and edited the drafted study. All Authors state that they had complete access to the study data that support the publication.

### ETHICAL STATEMENT

The ethical approval to conduct the study was obtained from Monash University Human Research Ethics Committee (Project ID: 2020-25746) before the distribution of questionnaires. The confidentiality and privacy of all respondents were assured as only the researchers were able to assess the collected data for academic purposes.

### DATA AVAILABILITY STATEMENT

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



## ORCID

Ali Haider Mohammed  <https://orcid.org/0000-0001-5349-4583>

## REFERENCES

- Pandey A, Jatana GK, Cosmeceuticals SS. StatPearls [Internet]. 2020.
- Ali Q, Salman A, Yaacob H, Parveen S. Financial cost and social influence: factors affecting the adoption of halal cosmetics in Malaysia. *Acad Entrep J*. 2019;25(2):1-17.
- Dehvari M, Ghaneian MT, Morowatisharifabad MA, Karimi M, Knowledge JT. Attitudes and practice of women about adverse effects of cosmetics in Yazd City, Iran. *Health Scope*. 2018;7(1):e68257.
- Kuffour RA, Dartey E, Owusu W, Dabuoh PM. Level of awareness of effects of the use of cosmetic bleaching products among women: a case study of Bolgatanga Municipality of Ghana. *Res Humanit Soc Sci*. 2014;4:57-62.
- Williamson M. LIFE BEAUTY: When wearing makeup might not be the best idea. Daily Maverick. 2020.
- Ilankizhai R, Gayathri R, Vishnupriya V. Cosmetic contamination awareness among adolescent females. *Asian J Pharm Clin Res*. 2016;9(5):117-120.
- Dadashi L, Dehghanzadeh R. Investigating incidence of bacterial and fungal contamination in shared cosmetic kits available in the women beauty salons. *Health Promot Perspect*. 2016;6(3):159.
- Rekha MB, Gokila K. A study on consumer awareness, attitude and preference towards herbal cosmetic products with special reference to Coimbatore city. *Int J Interdiscip Multidiscip Stud*. 2015;2(4):96-100.
- Qiao F, Wang Y. The myths of beauty, age, and marriage: femvertising by masstige cosmetic brands in the Chinese market. *Soc Semiotics*. 2019;24:1-23.
- Vashi NA. Obsession with perfection: body dysmorphia. *Clin Dermatol*. 2016;34(6):788-791.
- Ayob A, Awadh Al, Hadi H, Jaffri J, Jamshed S, Ahmad HMA. Malaysian consumers' awareness, perception, and attitude toward cosmetic products: questionnaire development and pilot testing. *J Pharm Bioallied Sci*. 2016;8(3):203.
- Mohammed AH, Hassan BAR, Suhaimi AM, Ali AHHD. Hypertension knowledge, awareness, and attitude among the hypertensive population in Kuala Lumpur and rural areas in Selangor, Malaysia. *J Public Health*. 2021;29:443-450.
- Mohammed AH, Hassan BAR, Suhaimi AM, Blebil A, Dujaili J. Factors associated with the level of knowledge about hypertension in Malaysia: a short communication. *J Pharm Health Serv Res*. 2020;11(4):415-417.
- Pikoos TD, Buzwell S, Sharp G, Rossell SL. The COVID-19 pandemic: psychological and behavioral responses to the shutdown of the beauty industry. *Int J Eat Disord*. 2020;53(12):1993-2002.
- Türsen Ü, Türsen B, Lotti T. Aesthetic dermatology procedures in coronavirus days. *J Cosmet Dermatol*. 2020;19(8):1822-1825.
- Leiva C. How Long The Coronavirus Can Live On Makeup, And How To Clean It. 2020.
- Abbas OL, Karadavut U. Analysis of the factors affecting men's attitudes toward cosmetic surgery: body image, media exposure, social network use, masculine gender role stress and religious attitudes. *Aesthetic Plast Surg*. 2017;41(6):1454-1462.
- Geis PA, ed. *Cosmetic microbiology: A practical approach*. Florida, US: CRC Press; 2020:1-219.
- Handriana T, Yulianti P, Kurniawati M, et al. Purchase behavior of millennial female generation on Halal cosmetic products. *J Islamic Market*. 2020;11:02-35.
- Alwhaibi M, Alhindi G, Alshamrani M, Essa MB, Al Aloola NA, Alhawassi TM. Pharmacovigilance in healthcare education: students' knowledge, attitude and perception: a cross-sectional study in Saudi Arabia. *BMC Med Educ*. 2020;20(1):1-7.
- Haque A, Anwar N, Tarofder A, Ahmad N, Sharif S. Muslim consumers' purchase behavior towards halal cosmetic products in Malaysia. *Manag Sci Lett*. 2018;8(12):1305-1318.
- Hassali MA, Al-Tamimi S, Dawood OT, Verma AK, Saleem F. Malaysian cosmetic market: current and future prospects. *Pharm Regul Affairs*. 2015;4(4):1-3.
- Atari M, Chegeni R, Fathi L. Women who are interested in cosmetic surgery want it all: the association between considering cosmetic surgery and women's mate preferences. *Adap Hum Behav Physiol*. 2017;3(1):61-70.
- Butschke A, Droß A, Dünnebier K, Laube I, Weiler A. Experiences and statistical evaluation of serious undesirable effects of cosmetic products in the EU. *Cosmetics*. 2016;3(3):25.
- Abels C, Angelova-Fischer I. Skin care products: age-appropriate cosmetics. Surber C, Abels C, Maibach H, eds. *pH of the Skin: Issues and Challenges*. 54: Basel, Switzerland: Karger Publishers; 2018:173-182.
- Nurhayati T, Hendar H. Personal intrinsic religiosity and product knowledge on halal product purchase intention. *J Islamic Market*. 2019;11(3):603-620.
- Hedlund J, Matteredo K. When product attributes are not enough: A study of a Finnish cosmetics brand on the Swedish market. 2018.
- Pu CY. Cosmetic Brand Preference and Purchasing Behavior: Comparison of Thai And Chinese Domestic Brands: Rajamangala University of Technology Krungthep, International College. 2020.
- Mohd-Nasir H, Mohd-Setapar SH. Natural ingredients in cosmetics from Malaysian plants: a review. *Sains Malaysiana*. 2018;47(5):951-959.
- Briliana V, Mursito N. Exploring antecedents and consequences of Indonesian Muslim youths' attitude towards halal cosmetic products: a case study in Jakarta. *Asia Pacific Manag Rev*. 2017;22(4):176-184.
- Katz LM, Dewan K, Bronaugh RL. Nanotechnology in cosmetics. *Food Chem Toxicol*. 2015;85:127-137.
- Brooks AT. *The Ways Women Age: Using and Refusing Cosmetic Intervention*. Manhattan, US: NYU Press; 2017.
- Dao H, Lakhani P, Police A, et al. Microbial stability of pharmaceutical and cosmetic products. *Aaps Pharmscitech*. 2018;19(1):60-78.
- Chan YY, Mansori S. Factor that influences consumers' brand loyalty towards cosmetic products. *J Market Manag Cons Behav*. 2016;1(1):12-29.
- Khan N, Sarwar A, Tan BC. Determinants of purchase intention of halal cosmetic products among Generation Y consumers. *J Islamic Market*. 2020;11:02-48.
- Basketter D, Corsini E. Can we make cosmetic contact allergy history? *Cosmetics*. 2016;3(1):11.
- Ismail S, Mokhtar SSM. Linking attitude to actual purchase of herbal product in Malaysia: the moderating role of perceived risk. *J Asian Business Strategy*. 2016;6(2):22.
- Gefen A. Skin tears, medical face masks, and coronavirus. *Wound Manag Prevent*. 2020;66(4):6-7.

**How to cite this article:** Mohammed AH, Blebil A, Dujaili J, Hassan BA. Perception and attitude of adults toward cosmetic products amid COVID-19 pandemic in Malaysia. *J Cosmet Dermatol*. 2021;20:1992-2000. <https://doi.org/10.1111/jocd.14147>