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Discovering Differences in Consciousness of Facial Features Among Japanese University Students in the Year of Admission According to COVID-19

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Article Info

ABSTRACT

Purpose of the study: This study aims to determine the significant differences in students' awareness of appearance between those admitted to universities during the COVID-19 pandemic and those admitted when the pandemic was deemed controlled in Japan.

Methodology: The author hypothesized notable variations in the change of self-consciousness regarding appearance, particularly facial appearance, contingent upon the year of admission. To test this hypothesis, a questionnaire survey was conducted among 428 students in Japan attending universities as of Fiscal Year 2023 to gauge their facial self-consciousness.

Main Findings: The initial analysis focused on changes in body image and facial self-consciousness. However, due to the predominant focus on facial aspects, a chi-squared test was allowed to determine the relationship between the year of admission and changes in facial self-consciousness. The results indicated a significant difference between the admission year and changes in facial self-consciousness, with the largest difference between 2020 and 2023.

Novelty/Originality of this study: The author used Cross-tabulation and Chi-Square analyses to compare previous years with 2023. The findings showed significant differences in facial self-consciousness depending on the admission year, with a p-value of less than 0.05. The results indicated that there were statistically significant differences in facial self-consciousness among students admitted in 2020. ($p < .05$, $p_{2020} = .005$, $p_{2021} = .014$, $p_{2022} = .016$).

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1. INTRODUCTION

A person's appearance can make some impression on others. Sometimes this is not only due to the quality of facial or body image construction, but often it is also due to facial expressions and movements. It is already known that many young females are particularly concerned about their reputation for body image and facial appearance [1] and this discrimination against people based on their appearance is known as lookism [2]. It is safe to assume that this concept has a certain influence not only on the self-esteem of the individual, but also on society [3,4]. If appearance supremacy goes too far, more patients will undergo cosmetic surgery [5] and some will suffer from body dysmorphophobia [6]. In particular, the global outbreak of COVID-19[7,8] has led to many reported cases [9,10] of patients seeking cosmetic surgery to correct unsatisfactory areas of their face, taking advantage of periods of no human contact such as wearing masks or working at home.

In Japan, many people, especially young people, have been wearing "dandy masks" since before the pandemic, and a certain number of people who were mentally stressed by being seen with their mouths and facial expressions wore masks daily for mental health reasons unrelated to infectious diseases [11,12]. The assessment of facial features and human beauty, as well as dissatisfaction with one's appearance, is subjective. Early intervention is necessary if pandemic-induced stress and lack of communication destabilize self-consciousness about one's face.

This study aims to explore the changing self-consciousness regarding appearance among Japanese students who have undergone the formative experience of the pandemic during their developmental years. The author aims to examine the social environment and engagement levels of the students, categorizing them based on their year of admission, in order to identify changes in their facial self-consciousness.

While previous research has extensively explored self-image during the secondary school years [13,14], this study uniquely focuses on unraveling the evolving perspectives of Japanese university students on their appearance. Ultimately, the study aims to provide insights into how faculty members can effectively support the student community in navigating these changing dynamics in the future.

2.   RESEARCH METHOD

This section describes the methodology used to analyze Japanese university students' characteristics, psychology, and potential behavior after the pandemic. The methodology of this study is divided into the following five steps.

- **1**: Formulate a hypothesis based on the problem.

- **2**: Prepare the questions needed to test the hypothesis. These questions mainly focus on how wearing face masks affects university students' behavior after COVID and their self-consciousness regarding their faces. Subjects can be single-choice, multiple-choice, or open-ended. Previous studies have utilized a logic tree [15] to establish hypotheses and the necessary reasons for their verification. This method of logical thinking is ideal for theoretically verifying hypotheses without any omissions or duplications in the questionnaire items[16]. In this procedure, in this study, Cronbach's α [17,18] is not calculated because it has not yet obtained answers from the subjects. However, the author analyzed categorical data and conducted a Chi-square test, as discussed in the study results. The Cramer's V was used to evaluate the data.

- **3**: The author presents the hypothesis to test. The increase in the number of adolescents experiencing psychological distress due to dissatisfaction with their faces is a problem that requires attention due to behavioral changes after the pandemic. Given that the requirement to wear masks and refrain from in-person communication occurred only in the early days of the pandemic and that the availability of online lectures and the degree of activity restriction varied according to the year in which the student was admitted, the author considered the possibility that changes in social conditions might alter students' self-consciousness about their appearance. Although there are few precedents for research findings that focus specifically on Japanese university students' consciousness, the author believes that conducting this study is significant in addressing issues that may lead to a greater impact on the growing psyche of youth. The conclusions drawn from this study must contribute to their education. To this end, the study hypothesizes (H_1) the following.

H_1: There is a significant difference in the change in self-consciousness about one's appearance, especially one's face, depending on the year of admission. In particular, since the mandatory wearing of masks will end in 2023, the percentage of students who change their self-consciousness about their faces is higher than in other years because they will have more options for showing their faces to others.

The rationale for formulating H_1: The frequency of contact with people and opportunities to see their faces differed according to whether students wore masks, the frequency of online lectures, and the restriction on extracurricular activities. Therefore, the author hypothesized that there would be differences in self-consciousness about face depending on the year of admission.

- **4**: To formulated H_1, admission year cross-tabulations and chi-square tests were conducted on the data of subjects to answer specific questions to determine whether or not the hypothesis was accepted or rejected. The author intends to utilize an Excel add-in tool to analyze data and retrieve outcomes.

- **5**: Based on the analysis results, the relationship between the year of entry and changes in self-consciousness about faces is discussed, and suggestions are made to faculty and students based on validation in the post-COVID-19 era.

The questions included options for respondents to choose when, where, and why they wear masks, with choices related to physical or psychological burdens. The questions were distributed using Google Forms, and response data were downloaded data acquired from a CSV-formatted file via Google Forms. The target population was university students attending universities in japan as of May 2023. The study recruited 428 students (Male: 148; Female: 280, M_age= 20.1). The survey was conducted over five days, from May 11 to 13, 2023. This survey mainly involved students who were joining the class of 2023 in the university, and over 90% of the participants were aged between 18 and 20.

3. RESULTS AND DISCUSSION

In this section, the author describes the results and discussion of the quantitative analysis conducted based on the data obtained by the methods presented in the previous sections. In the first section, the author presents the results of the changes in students' consciousness of their appearance according to the year of admission and the status of the pandemic and proceeds to discuss whether the year of admission after the pandemic caused any change in students' self-consciousness about their faces. In the second section, the author will test the hypothesis that is the aim of this study, that is, whether there is a significant difference in students' consciousness between students who entered universities during the pandemic and those who entered universities now that the pandemic is said to be under control in Japan. Most activities have returned to pre-pandemic levels, and we will analyze whether there is a relationship between the year of admission and consciousness. Finally, the author discusses the results of the series of analyses.

3.1. Changes in students' consciousness of their appearance according to year of enrollment and COVID-19 status

The results are shown in Figure 1 below.Subjects were grouped by year of admission, and students were asked whether their self-consciousness about their face changed before and after the pandemic and whether their self-consciousness about their body image changed. Since face and body image are defined as "appearance" in this paper, this section presents the results of the survey on changes in students' awareness of their appearance in each year of admission, before and after the pandemic.
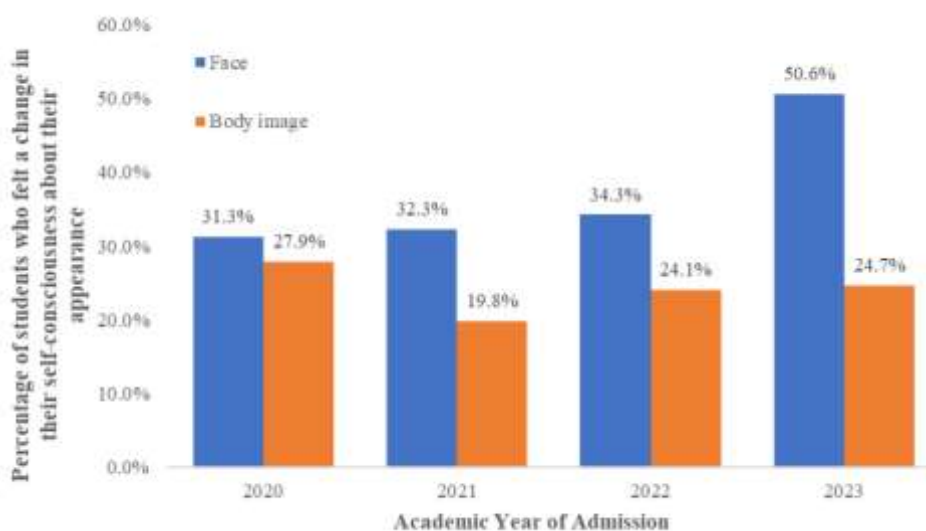

Figure1. Percentage of students who felt a change in their self-confidence about their appearance.

First, a significant proportion of students changed their self-consciousness about their face rather than their body image during the COVID across all grades. Overlooking the graph, the highest percentage of students overall is the 2023 admission who feel self-conscious about their faces, with support from 50.6% of the students. The lowest percentage of students throughout the study was whether students admitted in 2021 felt self-conscious about their body image, with a result of less than 20%, ranging from 19.8%. Overall, more students have changed their self-consciousness about their face than their body image. Although it is possible that many students were concerned about their unhealthy body image due to increased use of food delivery services and lack of exercise due to not going out, the change in self-consciousness about body image was less than 30% for all students in each grade. Conversely, the author found that more than 30% of students admitted each year after the pandemic reported a change in self-consciousness about their faces in response to lifestyle changes. Second, it was found that the most significant number of students who reported a change in self-consciousness about their faces were those admitted in the year 2023. In Japan, the mandatory wearing of masks was lifted on March 13[19], and the wearing of masks is no longer required except for people with pre-existing conditions and the elderly. This creates the behavior of looking at people's faces from admission. 29.3 percentage points more 2020 than in 2023 can be attributed to the fact that 2020 was the first year of the pandemic, and students were forced to be more conscious of infection prevention than their faces. When COVID-19 began in 2020, many people were forced to wear masks [20,21], which were considered effective in preventing infection [22,23]. This was one of the behavioral restrictions in students' lives, and they did not voluntarily decide to wear or not to wear masks. Therefore, the author believes that by changing the decision-maker of "whether or not to wear a mask in the future" to themselves, many students may have become more conscious of their faces.

As can be seen in the figure, the majority of students had a change in facial awareness in relation to the change in body image consciousness. In order to verify the initial hypothesis, the author classified the students' consciousness of their faces by year of admission and conducted a cross-tabulation. Since this paper defines 2020 to 2022 as the period during the pandemic and 2023 as the period after the pandemic convergence, the author classified students into two groups, those who entered in 2023 and those who entered before that year, and analyzed whether there was a change in their consciousness about faces. The results are presented in the following three tables.

Table 1. Crosstabulation of differences in self-consciousness about face before and after the pandemic (2020 vs. 2023)

Academic year of admission		Did facial self-consciousness change before and after the COVID-19 pandemic?		
		YES	NO	Total
	2020	46	101	147
		31.3 (%)	68.7 (%)	100.0 (%)
	2023	39	38	77
		50.6 (%)	49.4 (%)	100.0 (%)
Total		85	139	224
		37.9 (%)	62.1 (%)	100.0 (%)

Table 2. Crosstabulation of differences in self-consciousness about face before and after the pandemic (2021 vs. 2023)

Academic year of admission		Did facial self-consciousness change before and after the COVID-19 pandemic?		
		YES	NO	Total
	2021	31	65	96
		32.3 (%)	67.7 (%)	100.0 (%)
	2023	39	38	77
		50.6 (%)	49.4 (%)	100.0 (%)
Total		70	103	173
		40.5 (%)	59.5 (%)	100.0 (%)

Table 3. Crosstabulation of differences in self-consciousness about face before and after the pandemic (2022 vs. 2023)

Academic year of admission		Did facial self-consciousness change before and after the COVID-19 pandemic?		
		YES	NO	Total
	2022	37	71	108
		34.3 (%)	65.7 (%)	100.0 (%)
	2023	39	38	77
		50.6 (%)	49.4 (%)	100.0 (%)
Total		76	109	185
		41.1 (%)	58.9 (%)	100.0 (%)

The results of these cross-tabulation analyses all indicate that the number of students who felt a change in self-consciousness about their faces was larger in 2023, which is more detailed in the previous graph. In this study, the author categorized students into two groups by year of admission: those who reported that their self-consciousness about their faces had changed and those who reported that their self-consciousness about their faces had not changed. However, there were some students who had always been highly conscious of cosmetic surgery and their appearance and had been concerned about their own faces for some time, rather than becoming newly concerned during the COVID. Therefore, it should be noted that not all students who answered "no change" were indifferent to their own faces. In existing studies, female students tend to be more likely than male students to report that they want to continue wearing masks because of their daily habits, such as wearing makeup and fashionable masks [24,25], and that they have changed their self-consciousness about their faces as a result of the behavioral change caused by the COVID-19 epidemic. The results suggest that female students are more likely to continue wearing masks than male students[26]. In contrast to existing studies, this study classified students by the attribute of year of admission and conducted a crosstabulation. The results are shown in the three tables above. However, the results of the crosstabulation analysis alone only reveal a percentage

trend, so it is necessary to evaluate whether the relationship between admission year and self-consciousness about face is significant. In the next section, the author will test the hypothesis that is the aim of this study.

3.2. Evaluate the results of the analysis using the Chi-square test

As mentioned earlier, this study establishes a hypothetical relationship between year of admission and changes in self-consciousness about faces. Here, the author presents the results of a chi-square test of the self-consciousness about faces of students admitted in 2023 after the COVID-19 convergence and of students admitted within the three-year period from the academic year 2020 to 2022, to see if there is a difference in the change in consciousness depending on the year of admission. As described in the research methods, the relationship between year of admission and consciousness was evaluated using Cramer's *V*[27].

Table . 4 Significant Differences and Cramer's *V* for 2023

	p-value	Cramer's *V*	Significant Differences
	Significant Differences and Cramer's *V* for 2023		
2020	0.005	0.19	**
2021	0.014	0.19	*
2022	0.026	0.16	*

*, **indicate significance at the 0.05, 0.01 level, respectively.

To test the hypothesis, the author used a chi-squared test to evaluate the results of a crosstabulation between the questions of admission year and facial self-consciousness, focusing on the *p*-value. The relationship between year of admission and change in self-consciousness about face is shown in the table. The *p*-values were less than .05 for both inclusion years. Therefore, H_1 was accepted, showing that there are differences in self-consciousness about faces depending on the year of admission.In particular, there was a significant difference at the 1% level between 2020 and 2023. The overall trend is that *p*-values increase as COVID-19 pandemic progresses from the beginning of the pandemic to its convergence over the years. This suggests that the significant differences in COVID-19 from the early stages of the pandemic are diminishing as the years go by. There was a big difference between FY2020 and FY2023, the year when the pandemic started and the year of its convergence, and it can be assumed that there were differences in student life and restrictions on daily activities. During the 2023 academic year, 50.6% of the students who were admitted reported that they felt a change in their self-consciousness about their faces. This change can be attributed to the fact that they were given the freedom to act without having to wear a mask, rather than being mandated to wear one to prevent infection. As a result, when they encountered situations where their faces, which they had not shown to others during their three years of social life, were seen by others, they developed a new awareness of their appearance.In addition, it has been reported that students entering the 2020 and 2021 school years will inevitably have more opportunities to view their own faces through the screen due to online lectures[28,29] and that some users have become dissatisfied with their own faces by comparing their own faces with those of others[30].In 2021 and 2022, web conferencing tools will still be widely used [31] and students who have never had the opportunity to see their own faces on screen could be expected to become more aware of their own faces. It can be inferred from the results of this study that one of the influences on the change in facial self-consciousness is the different frequency of online lectures and wearing masks in each year, but web conferencing tools will continue to be used regularly by current college students even after they enter the workforce. Students need to get used to seeing their own facial expressions and movements in order to overcome their negative self-consciousness about their appearance. In addition, the use of 3D avatars instead of facial images and faculty members allowing students to speak without showing their faces may indirectly reduce the psychological burden on students' faces. According to [32], Cramer's *V*, one of the effect sizes for the chi-square test, indicates that the standard effect size is .10 for small, .30 for medium and .50 for large in the range of 0 to 1. The coefficients for each year were all close to .20, indicating that there is a small but significant relationship between year and consciousness. In the post-COVID-19 era, it can be predicted that first-year education will need to be tailored to the year of admission and social conditions.

4. CONCLUSION

This research highlights the importance of faculty interaction in mitigating potential dissatisfaction and social anxiety related to appearance. Educators should actively engage with students and remind them that appearance is just one aspect of an individual's identity. This can prevent adverse effects on psychological well-being in social contexts. In summary, this study emphasizes the lasting impact that the pandemic has had on students' self-consciousness about their facial appearance. It highlights the need for educators to take proactive measures to support students' overall well-being beyond mere facial aesthetics. Recommendations include

further research to understand causal relationships and a continued promotion of a comprehensive understanding of individuals beyond their facial appearance.

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