

The relationship among self-image, skin, and the extensive use of social interaction technologies imposed by the COVID-19 pandemic

A relação entre a autoimagem, a pele e o amplo uso de tecnologias de interação social impostas pela pandemia de COVID-19

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ABSTRACT

BACKGROUND: The COVID-19 pandemic has expanded the use of social interaction technologies, connecting individuals virtually. This change has brought a new trend of dissatisfaction with appearance induced by social media, motivating the excessive search for aesthetic procedures.

OBJECTIVE: To assess the impact generated by the use of apps during the pandemic on the self-image of respondents by biological sex, age, and family income.

METHODS: We conducted a cross-sectional study with 350 participants, aged 18 years or older, residing in the state of São Paulo - Brazil, through online dissemination of an electronic form. The data obtained were tabulated and analyzed by chi-square and Cochran tests, crossing the variables income, age, and biological sex.

RESULTS: Of the total, 69.71% claim changes in the way they see themselves physically during the pandemic; 58.3% report that apps influence their self-image, as 70.6% of the answers are women between 18-29 years old; 73.9% of women of all ages and incomes recognized the importance of skin for self-image, with this finding being discrepant among the age groups of men.

CONCLUSIONS: The use of apps during the pandemic impacted the self-image of the participants leading them to have a greater interest in obtaining future treatments and aesthetic procedures.

Keywords: Dermatology; Self-image; COVID-19; Social isolation

RESUMO

INTRODUÇÃO: a pandemia de COVID-19 ampliou o uso de tecnologias de interação social, conectando os indivíduos virtualmente. Essa mudança trouxe uma nova tendência de insatisfação com a aparência, induzida pelas mídias sociais, motivando a busca excessiva por procedimentos estéticos.

OBJETIVO: avaliar o impacto gerado pelo uso de apps na pandemia sobre a autoimagem dos entrevistados por sexo biológico, idade e renda familiar. **Métodos:** foi realizado um estudo transversal, com 350 participantes, com faixa etária a partir de 18 anos, residentes no estado de São Paulo, Brasil, por meio de divulgação on-line de um formulário eletrônico. Os dados obtidos foram tabulados e analisados por teste de qui-quadrado e de Cochran, sendo cruzadas as variáveis renda, idade e sexo biológico.

RESULTADOS: do total de participantes, 69,71% alegaram mudanças, durante a pandemia, na maneira pela qual se veem fisicamente; 58,3% relataram que os aplicativos influenciaram na sua autoimagem, sendo que 70,6% dessas respostas foram dadas por mulheres entre 18-29 anos; 73,9% das mulheres de todas as idades e rendas reconheceram a importância da pele para a autoimagem, sendo esse dado discrepante em comparação aos homens.

CONCLUSÕES: o uso dos aplicativos na pandemia impactou a autoimagem dos participantes, levando-os a ter maior interesse em procurar por tratamentos e procedimentos estéticos.

Palavras-chave: Dermatologia; Autoimagem; COVID-19; Isolamento social

Original Article

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INTRODUÇÃO

The coronavirus (COVID-19) pandemic has interfered with interpersonal relationships in the social and professional spheres, revolutionizing forms of communication through new modes of connection, such as video conferences and video calls, used to maintain social distancing. However, this drastic shift to virtual life, where individuals had to look at their video reflections many hours a day, scrutinizing their appearance, has also raised concerns about the potential increase in negative self-perception.^{1,2,3}

The use of filtered images and photo editing has led to a new trend of dissatisfaction with appearance induced by social media, called “selfie dysmorphia”, and to a significant change in the perception of contemporary beauty. The apps offer filters and editing features that allow users to change their appearance subtly or substantially. Thus, they can dedicate considerable time to idealizing their photographs, projecting an often unrealistic self-image.^{4,5}

The use of applications – the most popular are Instagram, Facebook, WhatsApp, Zoom, FaceTime, Google Meet, and Teams – implies an increase in the use of cameras for photographs and video calls, raising selective attention to unpleasant aspects of appearance, which seems to contribute to the perception of a distorted image.^{5,6,7} These modulations of self-perception can influence the general sense of self-esteem, provoking emotional reactions.³

This behavior fosters the new phenomenon called “Zoom Boom” or “Zoom Dysmorphia”. It is a dissatisfaction with one’s image, perceived in video calls, motivating the excessive search for aesthetic procedures that may not have been considered before confronting a video screen for months.² Dermatologists need to recognize these terms, which refer to social media-induced dissatisfaction with appearance since this phenomenon’s prevalence can significantly impact these physicians’ practice.

Bearing in mind that these platforms play a critical role in promoting aesthetic procedures and that the state of São Paulo is the most populous – and one of the most connected – state in the country, it’s crucial to assess this population by biological sex, age, and income regarding the impact of the pandemic, and the social isolation associated with the wide use of social interaction software in the individual’s perception of their skin.⁸

METHODS

We conducted an exploratory, cross-sectional, and prospective study in adults aged ≥18 years, residing in the state of São Paulo, Brazil, through the online dissemination of an electronic form, aiming to assess the impact generated by the use of personal interaction technologies and the individual’s perception of their skin, relating these two issues to the use of social interaction applications during the social isolation imposed by the COVID-19 pandemic.

The project was submitted for analysis at Plataforma Brasil and to the Research Ethics Committee of UNISA. After

approval by these entities, the research was initiated to guarantee the reliability of the information provided to all participants. All subjects received informed consent, which was available on the page before the online questionnaire. Only participants who agreed to the terms of informed consent were included in the study.

The electronic form was developed using the Google Forms application and served virtually to compose the data collection.

After data collection and analysis, we submitted the results to a theoretical-reflexive analysis based on studies published in indexed databases (PubMed and SciELO).

The sample size was 350 participants. The data obtained were tabulated in Excel, analyzed in Epi Info,⁷ and presented as frequency and percentage distribution. The variables income (≥5 minimum wages and ≤5 minimum wages), age (18 to 29 years old; 30 to 39 years old; ≥40 years old), and sex (woman and man) were crossed, and analyzed by the test chi-square, considering $p > 0.5\%$, and by the Cochran test.

RESULTS

We interviewed 350 participants, 88.6% women, and 11.4% men. The predominant age group was 18 to 29 years old (56.5%), followed by the ≥40 years old (31.1%), and, finally, by the age group 30 to 39 years old (12.4%). Regarding family income, 81.7% received ≥5 minimum wages (the minimum wage value considered was R\$ 1,212.00) – of them, 88.8% were women, and 11.2% were men, aged from 18 to 29 years old (57%) and ≥40 years old (31.8%). The correlations between all age groups, men, and income ≤5 minimum wages, in addition to the correlation between age from 30 to 39 years old, men, and income ≥5 minimum wages, did not have a sufficient sample for significant statistical analysis.

Of the total participants, 90% said they had increased their use of apps during the pandemic, and 87% also believed that the pandemic interfered with their social relationships since to maintain social distancing without losing touch, they used software, most frequently Instagram, Facebook, WhatsApp, Zoom, FaceTime, Google Meet, and Teams.

Also, in the current study, 69.71% of respondents claimed changes in how they saw themselves physically during the pandemic (Table 1), and 58.3% reported that apps influenced their self-image (Table 2). In both questions, women aged between 18 and 29 years most frequently answered positively (70.6%). However, women aged ≥40 years deny the influence of this software on self-image.

Regarding the importance of skin in self-image, 73.9% of women of all ages and incomes recognized the importance of skin for self-image. However, among men, 47.5% denied such influence, and the age group ≥40 years old most agreed with the question (56.3%) (Table 3). Concerning the isolation influence and the pandemic on how participants saw their own skin,

TABLE 1: Do you consider that, during the pandemic, you changed the way you see yourself physically?

	Women	Men	Total
Yes	213	31	244
Row %	87.30%	12.70%	100%
Cow%	68.71%	77.50%	69.71%
No	97	9	106
Row%	91.51%	8.49%	100%
Cow%	31.29%	22.50%	30.29%
Total	310	40	350
Row %	88.57%	11.43%	100%
Cow%	100%	100%	100%

TABLE 2: Do you consider that the use of social interaction applications influenced the way you see yourself physically?

	Women	Men	Total
Yes	180	24	204
Row%	88.24%	11.76%	100%
Cow%	58.06%	60%	58.29%
No	130	16	146
Row%	89.04%	10.96%	100%
Cow%	41.94%	40%	41.71%
Total	310	40	350
Row%	88.57%	11.43%	100%
Cow%	100%	100%	100%

53.2% recognized this influence, with women aged 18 to 29 prevailing in positive answers (63.8%).

When asked about the intention to perform some aesthetic procedure during the pandemic, 66.9% of the participants agreed that they had thought about it, with this statement prevailing in individuals with family income ≥ 5 minimum wages and in women of all ages. However, only 46% of respondents visited health professionals to, in fact, perform dermatological treatment during the pandemic, with women aged 18 to 29 and men aged ≥ 40 with income ≥ 5 minimum wages being the predominant sample in this regard.

DISCUSSION

Our study explored the impact of the social interaction apps imposed by the COVID-19 pandemic on self-image, aiming to correlate age, biological sex, and family income data.

In total, 90% of participants claim to have increased the use of apps during the pandemic, and 87% also believed that the pandemic has interfered with social relationships, since to maintain social distance without losing touch, they used softwares as Instagram, Facebook, WhatsApp, Zoom, FaceTime, Google Meet, and Teams. All these apps have resulted in increased

camera use, whether for photography or video calls, in which users constantly see them on video and become more aware of their appearance. We assessed patients who increased the demand for surgical procedures associated with the same behavior regarding the use of social media and observed the influence of the search for such procedures according to the characteristics and functions of each application. Users of apps that use videos and photos for communication, such as YouTube, Tinder, and Snapchat, had a higher acceptance of cosmetic surgery compared to WhatsApp users, who communicated through texts and calls.⁹

In the current study, 69.71% of respondents claimed changes in how they saw themselves during the pandemic (Table 1). Also, 58.3% reported that the apps influenced their self-image (Table 2). In both questions, women between 18 and 29 years old most frequently answered positively (70.6%). Women aged ≥ 40 years denied the influence of this software on their self-image. We can conclude, as stated by Gasteratos *et al.*, that young women aged between 18 and 29 years are more prone to the influence of social media, such as Instagram, because they are commonly exposed to them since they use the media the most, unlike older women who, because they use it less, suffer less influence.⁴ Furthermore, Welsch *et al.* presented a stu-

TABLE 3: Do you consider your skin important for your self-image?

	Women	Men	Total
Yes	229	19	248
Row%	92.34%	7.66%	100%
Cow%	73.87%	47.50%	70.86%
No	81	21	102
Row%	79.41%	20.59%	100%
Cow%	26.13%	52.50%	29.14%
Total	310	40	350
Row%	88.57%	11.43%	100%
Cow%	100%	100%	100%

dy with 1,449 participants, 81% aged between 25 and 34 years. In this study, 68% declared to be influenced by social media, and Instagram was the most influential application, followed by Snapchat and Twitter.⁷ Also, 50% of the participants routinely apply Snapchat filters, and 42% decided to undergo facial changes after applying Snapchat filters. Overall, 97% found that social media accounts specialized in cosmetics were helpful, but 77.8% felt that these accounts did not provide enough information. A study that corroborates these findings shows that young women are influenced to seek cosmetic surgery when observing images of women who have undergone aesthetic improvements, mainly because they spend a lot of time on social networks following different accounts and, therefore, feel dissatisfied with their appearance.¹⁰

Regarding the importance of skin in self-image, 73.9% of women of all ages and incomes recognized the importance of skin for self-image. However, among men, 47.5% denied such influence, and the age group ≥ 40 years old most frequently agreed with the question (56.3%) (Table 3). Concerning the influence of isolation and the pandemic on how participants see their skin, 53.2% recognized this influence, with a prevalence of women aged 18 to 29 years (63.8%). We inferred that more than half of the participants were concerned about their appearance. When we talked about dysmorphic considerations associated with self-focused attention during video calls, there is greater involvement in video manipulation behaviors and growing concerns with appearance due to the length of the video. Zhang *et al.* revealed that individuals who identified new appearance concerns based on video reported higher interest in obtaining future beauty treatments and aesthetic procedures.⁵

There is a great concern when an individual becomes excessively self-critical about real or imagined imperfections. The new phenomenon called “Zoom Boom” or “Zoom Dysmorphia”, which deals with dissatisfaction with the image seen in video calls, motivates the excessive search for aesthetic procedures that may not have been considered before months of

facing a video screen.² According to the study by Zhang *et al.*, more than a third of the sample (36%) reported that they identified new aspects of their appearance that they did not like during the video. Individuals with higher dysmorphic concerns were particularly likely to become fixated on themselves during video calls and to identify new concerns about their appearance on camera.⁵ Emerging concerns were associated with facial appearances, such as noticing changes in the weight or shape of the face, skin blemishes, or specific facial features. In turn, participants who identified new concerns about appearance on camera reported greater interest in getting cosmetic approaches compared to pre-pandemic, specifically non-surgical cosmetic treatments. In the current study, 66.9% of the participants intended to undergo some aesthetic procedure during the pandemic. This statement was prevalent in individuals with family incomes ≥ 5 minimum wages and women of all ages. However, only 46% of respondents visited a health professional to perform dermatological treatment during the pandemic, and women aged 18 to 29 and men aged 40 with income ≥ 5 minimum wages were the predominant groups.

The Aesthetic Plastic Surgery Database recently documented the increased acceptance of cosmetic procedures during the pandemic, noting a significant rise in the number of injectable cosmetic procedures performed in 2020 (3.97 million procedures) compared to 2.52 million in 2019.^{11,12,13,14,15} According to Welsch *et al.*, plastic surgeons preferred social media platforms to increase their visibility to potential consumers and connect with them. Margolin *et al.* (2013) described social media as a link between surgeons and patients. These authors believed physicians could advertise and “tag” themselves on social media.¹⁶ Humphries *et al.* (2016) discussed the potential role of social media in creating the brand of an academic plastic surgeon and found that social media was a place used to educate patients and increase their knowledge about different conditions in cosmetic procedures. Also, patients used social media to find excellent doctors, communicate with them about cosmetic procedures, and discuss

results, complications, and prices.¹⁷ According to Murphrey et al. (2023), regarding the content of publications on social networks, 70% of their respondents stated they prefer profiles that display “before and after” photos of patients.¹⁸ Furthermore, Richey et al. (2022) show that 85.6% of the 900 posts reviewed in their study and 84.6% of posts about off-label procedures were posted and written by non-medical professionals. Among the medical posters, the specialties of Plastic Surgery and Family Medicine stand out, followed by Dermatology.¹⁹

In this bias, aesthetic professionals need to recognize the “Zoom Dysmorphia” trend to make patients aware that the camera often distorts facial features due to technical aspects. Thus, during the consultation, these professionals should observe warning signs and unrealistic expectations and not advise aesthetic procedures on those who can’t make assessments based on the reality of their characteristics.

As patients increasingly use social networks to seek advice and knowledge about aesthetic approaches, it is worrisome to see that non-medical professionals who perform off-label

procedures produce most of the available content. Thus, medical professionals must provide complete and accurate information on cosmetic procedures in their professional and scientific media accounts.

CONCLUSION

We concluded that the use of social interaction technologies imposed by the COVID-19 pandemic impacted the self-image of young women between 18 and 29 years old, as they are commonly exposed to them. Also, this group – and the ≥40-year-old men with family income ≥5 minimum wages – identified new appearance concerns based on the video and showed greater interest in obtaining future beauty treatments and aesthetic procedures.

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