

ORIGINAL CONTRIBUTION

Hygienic and cosmetic care habits in polish women during COVID-19 pandemic

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Funding information

Medical University in Białystok, Grant/Award Number: SUB/1/DN/20/001/2230 and SUB/1/DN/19/001/2230

Abstract

Background: COVID-19 pandemic influences a lot of aspects of human life. Particularly, hygienic habits are affected.

Objectives: Changes in washing and cosmetic standards during the pandemic toward the past are in the focus of our interest.

Material and Methods: The questionnaire study was conducted anonymously in 140 women. The examination concerned pre- and during-pandemic routine hygiene activities such as hands washing, hair washing, bathing, the use of disinfectants, and use of specific type of cosmetics.

Results and Discussion: Compared were data before and during pandemic. Responders declared increased handwashing and taking shower after coming back home and after using local city transportation. We found also that increased use of disinfectants during COVID-19 pandemic. In contrary to that, number of people washing their hair decreased slightly. Work documents that profile of used cosmetics was changed; increasing hand cream use and decreasing in makeup cosmetics. Nearly, half of the respondents declare that they will maintain new habits also after the pandemic has ended.

KEYWORDS

cosmetics, COVID-19 pandemic, disinfectants, handwashing, hygienic habits

1 | BACKGROUND

Pandemic COVID-19 deeply influences many aspects of life.¹⁻³ Especially strongly interact sanitary restrictions as a ban on leaving the house ("Stay at home") and the avoidance of direct social contacts.^{4,5} People suddenly have excess time that they spend in a variety of ways. Some catching up what they lacked the time in the past. Any came up with reasonable management of free time, while others

had no idea of a sudden lack of occupation. Existing health risks and awareness of SARS-CoV-2 virus resulted in the use of new in terms of personal hygiene and care about the cleanliness of the skin.^{6,7} In addition, all ladies can devote more time to their appearance, cosmetics, and hygiene. Moreover, the beauty parlors are closed and cosmetic treatments you have to do yourself. The availability of a large amount of free time has undoubtedly changed hygienic and cosmetic habits.

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2 | AIMS

With this study, we intended to document specifically polish women cosmetic and hygienic habits in the period of COVID; therefore, work must not represent more general populations. The large dimension of polish cosmetic market makes this study interesting. The results of the study can provide hygienic behavior analysis as well as analysis of use of certain types cosmetics in extraordinary situation when people have reduced social contacts.

3 | MATERIALS AND METHODS

The questionnaire study was conducted anonymously in 140 women. The examination concerned routine hygiene activities such as washing hands, hair, bathing, the use of disinfectants, and more. The respondents provided prepandemic data and for comparison pandemic data.

A separate part of the survey included the use of specific types of cosmetics. Questions are related to the use of domestic ways of skincare, for example, use of foodstuffs. The respondents also provided information on whether they consider current (pandemic) cosmetic and hygienic habits better or more convenient or effective than pandemic management. The respondents also indicated whether after a pandemic they want to maintain new cosmetic and hygienic habits and if so why?

Statistical analysis was performed using the SPSS 20.0 program using paired t test (IBM Corporation). A *P* value < .05 was considered statistically significant.

4 | RESULTS

The study lasted from April 25, 2020–28, 2020.

Pivotal for the work was influence of COVID pandemic that changed cosmetic habits. Nevertheless, we show detailed personal information about social status, education, living place, age, working style, etc of the examined population.

Participants of the study, that is, questionnaire responders were 140 adult women living in Poland. Responders were unified in groups as follows: 18–25 years—covering 30% of respondents, followed by 26–35 years—22.9%, and 45–65 years—27.8%. The least answers were obtained from people aged 36–45—16.4% and over 65 years—2.9%.

Most of the respondents had university education—61.4%. The second largest group was people with A level education—28.6%, while 8.6% had vocational education. One woman surveyed indicated obtaining lower secondary and primary education, which constituted 0.7% each.

The largest percentage of respondents lived in cities up to 50,000 citizens—45.7%, then 30.7%—cities over 250 000 residents, and 16.4%—villages. The least numerous groups included women

from cities up to 100 000, inhabitants—5%, and cities up to 250 000 residents—2.1%.

An important parameter determining the characteristics of the study group was the type of work performed before the pandemic. The majority of respondents did office work—45.7%. The respondents included university students—19.3% and workers—18.6%. The unemployed were 7.9%.

The work style of most respondents during the pandemic changed significantly, and 42.1% of respondents indicated that they are temporarily free of work from their employer. 26.4% are ordered in pandemic time to do telework at home (home office). Only less than 1/3 of respondents (31.4%) worked in its usual workplace.

4.1 | Questionnaire compares period before the COVID and COVID in tractu

The frequency of handwashing by respondents before and during the epidemic is presented in Figure 1. A noticeable increase in frequency compared to the time before the epidemic was recorded after using public transport (from 53.6% to 80.7%) and after coming back home (from 80, 00% to 100.00%).

Before the pandemic, 81.1% of women had the habit of washing their face twice a day, and 11.4% of women had it once a day. Individual responses ranged from 3 to 6 times a day. During the pandemic, 79.1% of women washed their faces twice a day, and 7.1% of people washed once a day. Answers show a tendency to significantly increase the number of washing: "every time you return home," "repeatedly," "several times a day," and even "8–10 times a day."

The frequency of taking showers during the epidemic slightly increased in favor of the respondents twice a day 30% of respondents and once a day 65% of respondents. It is interesting one of the respondents noted that currently, she uses the shower 3 times a day, which no one declared before the epidemic. In the past, more people took a shower once a day 72.9% and 22.9% took this action twice a day.

Women not taking a bath before the epidemic were 42.1% of people and during a pandemic 46.4%. Moreover, the number of people who took a bath three times a week during the pandemic increased from 5.3% to 8.6%.

For most people, the frequency of hair washing did not change (51.4% before the pandemic vs. 52.1% during the pandemic) and was 2–3 times a week. The number of people washing their hair once a day decreased slightly (21.7% vs 25.7%) and more often than three times a week (16.4% vs 13.6%). The number of people washing their hair only once a week increased from 5% to 6.4%. There were also answers "more than once a day" in two people (1.4%) and "less often than once a week" in one person (0.7%) what we perceive as a curiosity.

Data about frequency of using antibacterial preparations before and during a pandemic are to find in Figure 2. Results show that before pandemic dominated answers were "no" and "very rare."

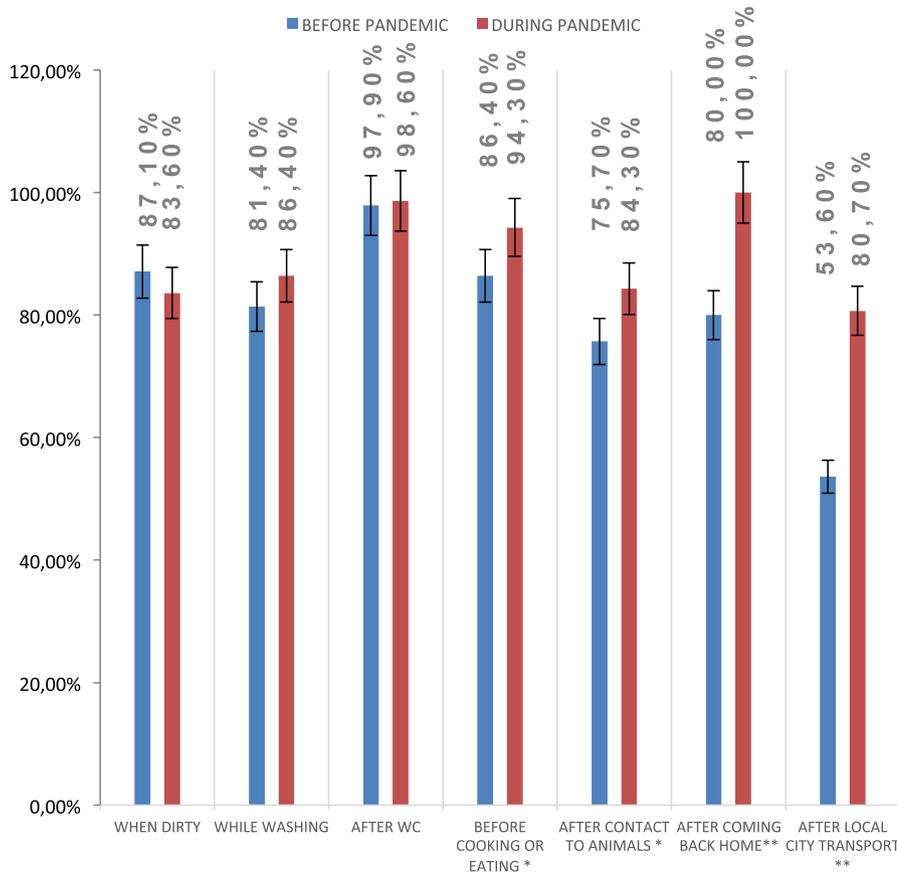


FIGURE 1 Frequency of handwashing before and during an epidemic. Statistic analysis was done comparing “before pandemic” versus “during pandemic.” ** $P < .001$; * $P < .01$

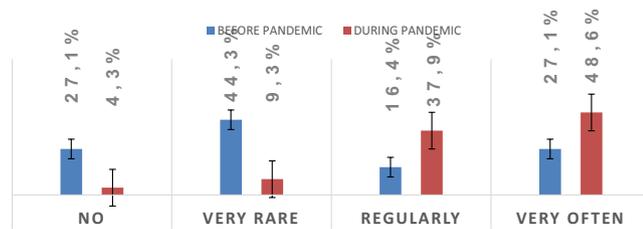


FIGURE 2 Frequency of using antibacterial preparations before and during a pandemic

However, during pandemic majority shifted to answers “regularly” and “very often.”

The frequency of epilation before a pandemic is similar to the frequency of epilation during a pandemic. Once a day, the same number of people epilated in the compared epidemiological states 5.7%. More often than three times a week, it fell from 5% of people before the pandemic to 3.6% of people during the pandemic. Before the pandemic 2-3 times a week, 30% of people enjoyed this and during a pandemic 25% of people. 25.7% of respondents depilated once a week before the pandemic and 29.3% during. The number of depilatory women less than once a week increased from 10% to 11.4% compared to the time before the epidemic emerged. 23.6% of women have undergone epilation 2-3 times a month before, and now 25%.

Before the pandemic, the offer of beautician offices was used by 67.9% of respondents, of which more than once a month—7.3%,

once a month—34.4%, once every 2-3 months—35.4%, and once for half a year—22.9%. In pandemic time, beauty parlors are closed and nobody can attend them.

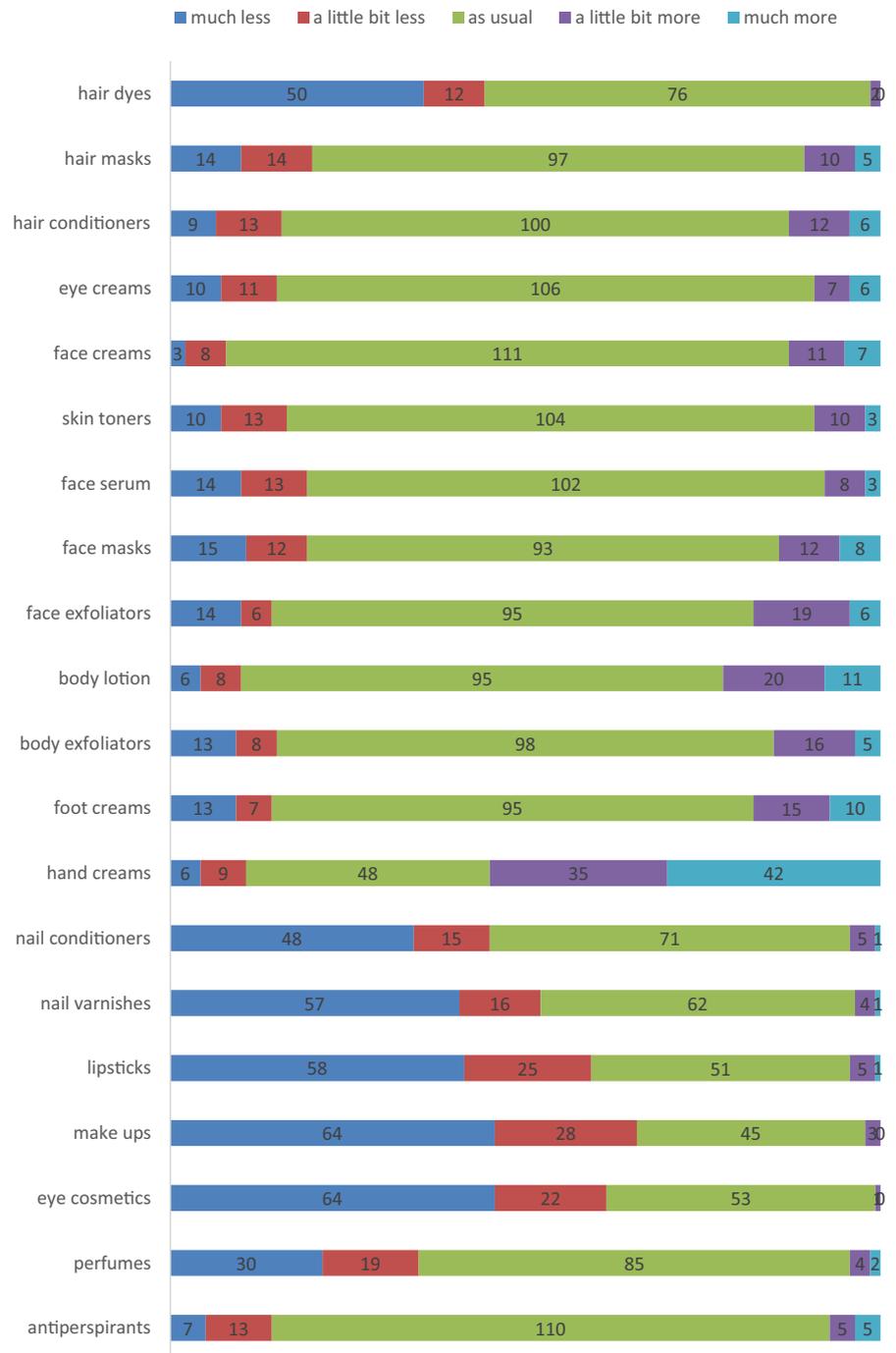
Respondents were asked to change the frequency of use of cosmetics such as hair dyes, nourishing hair mask and hair conditioners, eye creams, face creams, skin toners, face serum, face masks, face scrubs, body lotions, body scrubs, hand creams, foot creams, nail conditioners, nail varnishes, lipsticks, colored face and eye cosmetics, perfumes, and deodorant/antiperspirant (Figure 3). There has been a statistically significant increase in the use of handwashing creams and a reduced incidence of using colored face and eye cosmetics, lipsticks, conditioners and nail varnishes, hair dyes, and perfumes.

Before the pandemic, 11.4% of responding women used face and body care products (eg, yogurt or yeast face mask, egg mask for hair) and 15.7% during it.

Over half of the respondents (56%) declare that they will return to their former hygiene habits after the pandemic is over (Figure 4).

Of those who want to maintain their current (pandemic) cosmetic and hygienic habits, only 17.1% say that the current form of hygiene brings better cosmetic effects. 36.4% of female respondents believe that motivating them to maintain a new form of care is that they currently obtain better hygiene results. Only 23.6% of people say that the current form of care is more convenient to use. As many as 46.8% of respondents believe that they will keep new habits just in case (Figure 5).

FIGURE 3 Change in the frequency of use of cosmetics during a pandemic compared to the state before



5 | DISCUSSION

This work is novelty, which is not to find in scientific databases; therefore, this is a valuable contribution to science. Our study is evaluated by statistical analysis. The work shows changes in Polish women's hygienic and cosmetic habits during the COVID-19 pandemic. In addition, it will enable cosmetics market analysts to create predicted scenarios for the increase or decrease in demand and supply for specific cosmetic products.

In the own study, an increase in the frequency of handwashing in the examined categories during the epidemic was noted. This could be related to fear of infection with the virus and numerous

educational campaigns (advertisements on television, radio, Internet, newspapers) calling for washing hands in order to reduce the risk of pathogen transmission. In Google Trends, during a pandemic, there was a significant increase in search terms related to hand hygiene and washing stages, which could have contributed to the reduction of COVID-19 transmission speed over the next three weeks. Washing hands with soap and water disrupts microorganisms.^{8,9} The handwashing process helps to remove impurities from the skin. The use of warm water promotes the opening of pores in the skin of the hands and forearms, which supports the removal of microorganisms. Washing your hands with soap prevents cross-contamination and the spread of antimicrobial resistance. It helps reduce the

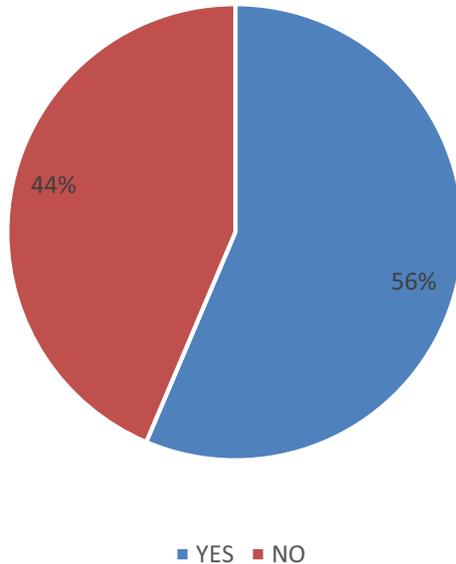


FIGURE 4 Declared return to former hygiene habits

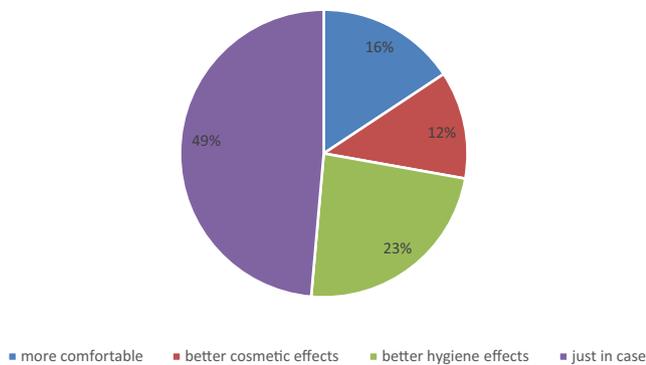


FIGURE 5 Motivations for maintaining new hygiene habits

transmission of infections such as diarrhea, pneumonia, flu, worm, and others. This activity is effective in reducing the incidence of infections.

According to the present study, the frequency of using antibacterial products has increased. SARS-CoV-2 virus has relatively low resistance to disinfectants.¹⁰ These viruses can be effectively inactivated with lipid solvents.² The effectiveness of various substances has been demonstrated: 75% ethanol, peracetic acid, chlorine, and chloroform.^{2,10} In conducted tests checking the effectiveness of preparations recommended by WHO (preparation I - 80% (v/v) ethanol, 1.45% (v/v) glycerol and 0.125% (v/v) hydrogen peroxide; preparation II - 75% (v/v) 2-propanol, 1.45% (v/v) glycerol, and 0.125% (v/v) hydrogen peroxide), effective inactivation of SARS-CoV-2 has been shown. In addition, virus inactivation by ethanol and 2-propanol was demonstrated for 30 seconds at a concentration >30% (v/v).¹¹ However, excessive handwashing with detergents or disinfectants can damage the hydro-lipid mantle of the skin surface and may also be responsible for irritation and even the development of contact dermatitis.

In the own research, we could observe a tendency to wash the face many times a day during the epidemic. This may be due to the

increased need of people to maintain hygiene and fear of virus deposition on the face, because transmission in the air does not require physical contact between infected and susceptible people—the virus can remain in the air for many hours. During a pandemic, obsessive-compulsive disorder related to obsession with cleanliness and the felt need for continuous washing or disinfection are diagnosed.¹²

The frequency of showering twice a day slightly increased, which may be related to the need to maintain hygiene in some of the subjects. There was also a decrease in showering once a day, which may be related to the ongoing isolation and not leaving the house, which will translate into the lack of necessity to maintain interpersonal requirements and norms regarding appearance.

The number of people taking a bath in a tub during a pandemic has decreased. This may be due to more frequent choosing the method of washing in the shower after returning home from the work. However, the number of people who took a bath 3 times a week increased slightly—this may be due to more free time spent on relaxing. In a study by Benfield et al,¹³ forty-six percent of respondents said that they enjoyed bathing for purposes other than washing.¹⁴ Women declared that it relaxes them, allows them to slow down or soothe pain, and acts well for cramps.

Sleep disorders have been reported in people during a pandemic. Increased frequency of taking evening warm baths and showers may be caused by the desire to facilitate falling asleep—scheduled 1-2 hours before bedtime for 10 minutes can improve sleep.¹⁵

There are three patterns of how to wash your hair. The first—The frequency of washing hair during the epidemic has remained constant, which is related to maintaining pre-epidemic habits; second—extending the time interval between hair washing, and the third—significant more frequent hair washing—may be related to the beliefs of the respondents regarding the possibility of transmission of the virus from the surface or deposition of the pathogen from the air to hair located near the face.

Polish women's habits regarding hair removal have not changed significantly.

At April 1, 2020, came into force Regulation suspending the activities of beauty, hairdressing, and massage salons. People using this type of services (67.9% of respondents, of which 34.4% of women once a month) had to give up cosmetic services.

This resulted in a significantly reduced frequency of using cosmetics such as conditioners and nail polishes and hair dyes. A change in lifestyle associated with the cessation of work during an epidemic (42.1%) or remote work (26.4%) and staying at home can also contribute to a significant reduction in the frequency of using colored cosmetics for face and eye makeup, lipsticks for lips, and perfume. Restricting the use of lipsticks may also be associated with the introduction of an order to cover the nose and mouth in public space. The frequency of using hand creams has increased significantly—this is due to the increase in the use of disinfectants with skin irritation and the introduction of an order to wear gloves in stores that can worsen the condition of the nails (lamellar splitting and splintered, fractured nails with onychoschisis) and increase transepidermal water loss (TEWL) up to 40 minutes after removing them.¹⁶ There

were no significant changes in the habits of the other cosmetics included in the study. The number of women using food products for face and body care increased slightly. This may be due to more time for cosmetic attempts or saving money.

Current restrictions have disturbed the sense of stability and security and are associated with threat, uncertainty, and fear². Returning to old habits will be associated with a return to normalcy. It was apparent that COVID conditions would change quickly; therefore, a quick snapshot was occasion to fix cosmetic and hygienic habits of population in COVID period.

Alterations in use of hygienic and cosmetic products in extraordinary situations like a pandemic are important data relevant to customer behavior.

This work is the first study dealing with the change of hygienic and cosmetic care habits in women during COVID-19 pandemic. There are no papers on this subject in the available literature.

6 | CONCLUSIONS

This work documents that during pandemic, COVID-19 occurred changes that clearly increase washing behavior of people compared to the past. Additionally, profile of used cosmetic products was changed for advantage of hand cream and decrease in makeup and nails cosmetics. Over half of the respondents intend to return to applying previous customs in hygienic and cosmetic care. However, nearly half of the respondents declare that they will maintain new habits also after the pandemic has ended.

ACKNOWLEDGMENTS

This study was supported in part by grant SUB/1/DN/20/001/2230 and grant SUB/1/DN/19/001/2230 from Medical University in Białystok.

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How to cite this article: Mościcka P, Chróst N, Terlikowski R, Przyłipiak M, Wołosik K, Przyłipiak A. Hygienic and cosmetic care habits in polish women during COVID-19 pandemic. *J Cosmet Dermatol.* 2020;19:1840-1845. <https://doi.org/10.1111/jocd.13539>