

People's Views of Hygiene and Personal Care during COVID-19 Outbreak

Svetlana S. Ivanova¹ , Yeşim Üstün Aksoy^{2*} , Yulia S. Krasilnikova³ , Nikolay A. Mashkin⁴ ,
Nina V. Chizh⁵ , Svetlana A. Knyazeva⁶ 

¹ Department of Physical Education Theoretical Foundations, Kozma Minin Nizhny Novgorod State Pedagogical University, Nizhny Novgorod, RUSSIA

² Department of Educational Administration and Supervision, Near East University, CYPRUS

³ Department of Physical Education and Sport, Kozma Minin Nizhny Novgorod State Pedagogical University, Nizhny Novgorod, RUSSIA

⁴ Department of State and Legal Disciplines, Plekhanov Russian University of Economics, Moscow, RUSSIA

⁵ Department "Russian Medical Museum", N.A. Semashko National Research Institute of Public Health, Moscow, RUSSIA

⁶ Department of Medical and Social Assessment, Emergency, and Ambulatory Therapy, I.M. Sechenov First Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov University), Moscow, RUSSIA

Received 20 December 2021 ▪ Accepted 15 March 2022

Abstract

The present research aims to ascertain the views of the people in Russia, about their levels of awareness in terms of hygiene and personal care for protection against the coronavirus. Data for this research were collected through an online questionnaire developed by researchers using a quantitative research approach. A total of 439 people living in different districts of the Russian Federation were involved to the research based on simple random sampling. The data were analyzed using descriptive statistics including frequencies and percentages. Results revealed that the participants paid attention to not having close contact with other people to protect themselves against the COVID-19 pandemic. The findings also revealed that they wash their hands after visiting the toilet and stand one meter away from other people. It was also found that television is the mass medium through which they follow the information on personal care and hygiene-related to the COVID-19 pandemic most frequently.

Keywords: COVID-19, hygiene, personal hygiene, personal care, Russia

INTRODUCTION

Novel coronavirus (COVID-19), which first appeared in Wuhan, China, soon turned into a pandemic that affected the fears and perceptions of people (Abdulmir & Hafidh, 2020; Ait Addi et al., 2020 Aljofan & Gaipov, 2020; Sorooshian, 2020). During the time of COVID-19, hygiene and hygiene education gained importance for the entire human race. As the coronavirus is transmitted from human to human, people need to increase personal hygiene measures and avoid environments which involve close contact for protection (Hesham et al., 2021; Sanchis Sánchez et al., 2021; Wada & Oloruntoba, 2021). Hassen et al. (2021) stressed that with the rapid global outbreak of COVID-19 as a pandemic, people tended to do more shopping of stock items. During this period,

people largely demanded products like hand soaps and hand disinfectants for personal hygiene, and medical products like surgical masks, toilet paper, and bread (Hassen et al., 2021; Sanchis Sánchez et al., 2021; Wada & Oloruntoba, 2021). Studies revealed that during the pandemic, people tended to have interests on cleaning materials and bulk purchases for personal and general hygiene. For example, Lages et al. (2021) indicated that the demand for personal care products increased during the COVID-19 pandemic. In another study, Hesham et al. (2021) reported that the sales of cleaning materials and personal hygiene products increased for personal hygiene measures.

Hygiene, which is the most important factor to live a healthy life, is also a scientific concept that applies knowledge on health in the form of synthesis for the

Contribution to the literature

- A lack of research on hygiene education was noted. Especially during the epidemic COVID-19 hygiene education has become very important. The main objective of the present study was to determine people's views regarding their awareness of hygiene and personal care to protect themselves from COVID-19.
- One of the most important findings of this study is that participants are careful not to have close contact with other people to protect themselves from the COVID-19 pandemic.
- Another important finding is that television is an important mass medium through which participants most frequently followed information about personal hygiene and hygiene related to the COVID-19 pandemic.

maintenance and improvement of human health and the continuation of life efficiently at a healthy level for long periods (Konstantinidis et al., 2021; Sanchis Sánchez et al., 2021; Wada & Oloruntoba, 2021).

While the acquisition of hygiene habits prevents the emergence of health problems, deficiencies in these habits cause a variety of diseases. When studies that focused on the relationship between hygiene and diseases were analyzed, it was found that 9.1% of the infections in developing countries could be prevented through effective hygiene habits and the availability of fresh water (Pruss-Ustun, 2008; Gryaznova et al., 2020). Moreover, it was also found that 6.3% of the mortality rates in developing countries could be prevented through these means (Pruss-Ustun, 2008).

Non-development or misapplication of hygiene habits is a major global problem. The lack of hygiene measures causes many oral and fecal diseases. Poor hygiene habits are not only affecting human life negatively but also causing considerable costs. Research has emphasized that for each dollar invested to develop the hygiene habits of people, a return of nine dollars would be ensured (Brown et al., 2013; Smirnova et al., 2020).

Personal hygiene is of the utmost importance for people to live a healthier life and find solutions to their problems. Hygiene habits are especially vital for the prevention of infectious diseases (Wada & Oloruntoba, 2021). Research has found that sociocultural characteristics, economic situation, educational status, circle of friends, and hygiene training given by the family affect one people's thoughts about her/his body and beliefs about health habits (Anthonj et al., 2021).

METHODOLOGY

The present study is a cross-sectional study of describing the participants' views of hygiene and personal care protection against the coronavirus pandemic. The online survey was used as a data collection tool in the research.

Population-Sample

In this research, the "simple random sampling" method was used, and the participants who lived in

different districts of Russia were involved in the study. Accordingly, a total of 439 people participated in the study with a sampling error of 5 percent. For the data analysis, the participants were first listed and numbers were given to each participant. Subsequently, a "Random Numbers Table" was used to determine the elements which were to be included in the participants' responses. Criteria, like accessibility, ease of application, and voluntariness, were primarily taken into consideration for the participants in this research.

Data Collection Tool

A questionnaire developed by the researchers, which was entitled "Levels of Awareness of People in Russia in Terms of Hygiene and Personal Care for Protection Against the Coronavirus" was used for data collection. To test the clarity of the questions in the questionnaire, the draft version of the questionnaire was administered to a total of 30 people and thus the corrections on the items in the questionnaire were made by the researchers. The first part of the questionnaire included five questions aimed at determining gender, age, nationality, educational status, and occupation of the participants.

A total of 10 questions were included in the second part of the questionnaire. In addition to the suitable response options for each question, the participants were given the opportunity to mark multiple options:

- 1) What are the views of participants about COVID-19 pandemic?
- 2) Which mass media do you follow for personal care and hygiene information related to the COVID-19 pandemic?
- 3) Which of the following personal hygiene measures do you take to protect yourself from the COVID-19 pandemic?
- 4) When do you wash your hands with soap and water?
- 5) What do you pay attention to during household cleaning?
- 6) Which of the following measures do you take when you go out to meet your essential needs during the COVID-19 pandemic?

- 7) What kind of measures do you take when you return home?
- 8) How do you groom your hair/beard/mustache during the lockdown for the COVID-19 pandemic?

After having the corrected version of the questionnaire, three experts were invited to input their suggestions on the questionnaire and thus the items in the questionnaire were finalized (application instructions were written). Since the analysis of each question was realized separately and the total score was not calculated for the questionnaire, a reliability calculation was not needed. However, the survey was formed taking into consideration (by increasing the number of questions, providing survey instructions at the beginning, ensuring objectivity during scoring, etc.) factors affecting reliability.

Data Collection

The questionnaire was administered to the participants in November 2021. When the questionnaire was applied to the participants, the epidemic of the COVID_19 was continuing and a significant number of people in Russia were still dying everyday due to this epidemic. The survey was on a voluntary basis and those not wishing to respond to survey questions were not included in the research. The participants were informed that the research would be anonymous and the survey was completed by the participants in 10-15 minutes on average. To reduce and mitigate nonresponse bias, researchers did use third methods. One was to inform the participants about the aim of the research and gave instructions to them to read and answer the information about the research. The second was to motivate the participants to complete the whole questionnaire items. Thus, they were provided to answer all questions in the questionnaire. The third method was to use Times New Roman font to increase the legibility of the items in the questionnaire. Furthermore, the participants' answers were kept secret, hidden and avoiding redirection.

Data Analysis

Data collected through the survey were saved on and analyzed with the SPSS 15 package program on the computer by the researcher. Each expression in the

survey questions was analyzed to find out the levels of awareness of people in Russia in terms of hygiene and personal care for protection against the coronavirus. Descriptive statistics like frequency and percentage were also used.

FINDINGS

There are 27.11% and 72.89% of the participants that are male and female respectively. 10.02% of them are at the age of 25 or below, 26.88% of them are between the ages of 26-35, 29.38% of them are between the ages of 36-45, 18.45% of them are between the ages of 46-55, and 15.26% of them are at the age of 56 or over. It was also found that 22.55%, 45.56%, 21.64% and 8.43% of the participants are graduates of high school, bachelor's, master's and doctorate studies, respectively. It was also seen that 7.52%, are academician/research assistant, 6.38% are doctor/pharmacist/dietician/nurse, 5.69% are aesthetician/beautician, 13.44% are public servants, 16.86% are teachers and 24.60% are private sector employees, respectively.

The findings of the research were submitted by taking sub-problems as a basis. They were tabulated together with their explanations underneath.

The review of [Table 1](#) reveals that 92.94%, 79.27%, 88.84%, 90.21%, 94.99% and 72.21% of the participants gave the responses of "It emerged in the Chinese city of Wuhan," "COVID-19 is named as 2019-nCoV and Coronavirus," "The incubation period for Coronavirus is 2-14 days," "People aged 60 and over are in the risk group," "People with high blood pressure, diabetes, respiratory diseases, cancer and weak immune systems are in the risk group" and "I know everything as mass media (TV, newspapers or the Internet) give information on COVID-19", respectively.

Mass media through which participants follow information on personal care and hygiene for the COVID-19 pandemic are given in [Table 2](#) and it was ascertained that 87.24%, 38.50%, 18.0%, 80.87%, 26.20%, 16.17%, and 32.57% of the participants follow said information over the television, newspapers, radio, Facebook, Youtube, Twitter and news packages sent to cellphones as messages, respectively.

The review of [Table 3](#) suggests that 94.76%, 80.87%, 90.21%, 85.88% and 95.90% of the participants gave the

Table 1. The views of participants about covid-19 pandemic (N=439)*

	Number (n)	Percentage (%)
People with high blood pressure, diabetes, respiratory diseases, cancer and weak immune systems are in the risk group.	417	94.99
It emerged in the Chinese city of Wuhan.	408	92.94
People aged 60 and over are in the risk group.	396	90.21
The incubation period for the Coronavirus is 2-14 days.	390	88.84
COVID-19 is named as 2019-nCoV and Coronavirus.	348	79.27
I know everything as mass media (TV, newspapers, or the Internet) give information on COVID-19.	317	72.21

* Multiple responses can be given.

Table 2. Mass media through which participants follow information on personal care and hygiene for the COVID-19 pandemic (N=439)*

	Number (n)	Percentage (%)
Television	383	87.24
Facebook	355	80.87
Newspaper	169	38.50
News packages sent to cellphones as messages.	143	32.57
Youtube	115	26.20
Radio	79	18.00
Twitter	71	16.17

* Multiple responses can be given.

Table 3. Hygienic measures participants take for protection against the COVID-19 pandemic and behaviors (N=439)*

	Number (n)	Percentage (%)
I am careful about not having close contact (shaking hands, kissing and hugging) with people.	421	95.90
I regularly wash my hands with soap and water.	416	94.76
I cover my nose and mouth with the inside of my elbow when I sneeze and cough or use paper tissue.	396	90.21
I use a facial mask and gloves in crowded places.	377	85.88
I frequently use disinfectants, hand gels, antiseptic wet wipes or eau de cologne.	355	80.87
After visiting the toilet	420	95.67
After coming home or to work from outside	418	95.22
Before and after eating	412	93.85
After completing a work involving dirt or dust	399	90.89
Before preparing the meal	396	90.21
Before cleaning the teeth, mouth, face or the eyes	357	81.32
After contacting people or a sick person	345	78.59
After sneezing or coughing	337	76.77
I frequently ventilate the house.	430	97.95
I wash the bed sheets and clothes at 40-60°.	340	77.45
I only use paper towels during this period.	342	77.90
I clean the toilet regularly with antiseptic products.	337	76.77
I frequently wipe the floor with antiseptic products.	328	74.72
I clean the surfaces I frequently contact (door handle, cell phone etc.) with antiseptic products.	326	74.26
I regularly wash the hand and face towels.	183	41.69
I maintain a distance of one meter with people.	414	94.31
I do not touch my eyes, nose and mouth after contacting objects.	385	87.70
I wear a mask.	362	82.46
I frequently use hand disinfectants.	360	82.00
I wear gloves.	359	81.78
I wash my hands with soap and water.	422	96.13
I disinfect items I use outside (key, cell phone etc.)	397	90.43
I take a shower or a bath.	387	88.15
I change my clothes.	337	76.77
I take off my shoes outside and disinfect them.	331	75.40
I use a hand disinfectant.	285	64.92
I wash my clothes or hang them under the sun.	195	44.42

*Multiple responses can be given.

responses of "I regularly wash my hands with soap and water," "I frequently use disinfectants, hand gels, antiseptic wet wipes or eau de cologne," "I cover my nose and mouth with the inside of my elbow when I sneeze and cough or use paper tissue," "I use a facial mask and gloves in crowded places" and "I am careful about not having close contact (shaking hands, kissing and hugging) with people", respectively.

It was ascertained by the review of [Table 3](#) that 90.21%, 93.85%, 81.32%, 95.67%, 76.77%, 90.89%, 95.22% and 78.59% of the participants wash their hands "Before preparing the meal," "Before and after eating," "Before cleaning the teeth, mouth, face or the eyes," "After visiting the toilet," "After sneezing or coughing," "After completing a work involving dirt or dust," "After coming home or to work from outside" and "After contacting people or a sick person", respectively.

Table 4. Comparison of the use of hand sanitizer according to the gender of the participants (N=439)*

Hand sanitizer	Men		Women		Total		X ²	p
	n	%	n	%	n	%		
Using	23		56		79	18.00	0.196	0.658
Not using	96		264		360	82.00		
Total	119		320		439	100.00		

The review of [Table 3](#) reveals that 97.95%, 74.72%, 74.26%, 76.77%, 41.69%, 77.90%, and 77.45% of the participants gave the responses of "I frequently ventilate the house," "I frequently wipe the floor with antiseptic products," "I clean the surfaces I frequently contact (door handle, cell phone etc.) with antiseptic products," "I clean the toilet regularly with antiseptic products," "I regularly wash the hand and face towels," "I only use paper towels during this period" and "I wash the bed sheets and clothes at 40-60", respectively.

Measures taken by the participants when they go out to meet their essential needs during the COVID-19 pandemic are given in [Table 3](#) and it was ascertained that 82.46%, 81.78%, 82.0%, 94.31% and 87.70% of the participants gave the responses of "I wear a mask," "I wear gloves," "I frequently use hand disinfectants," "I maintain a distance of one meter with people" and "I do not touch my eyes, nose and mouth after contacting objects", respectively.

The review of [Table 3](#) reveals that 75.40%, 96.13%, 64.92%, 90.43%, 88.15%, 76.77% and 44.42% of the participants gave the responses of "I take off my shoes outside and disinfect them," "I wash my hands with soap and water," "I use a hand disinfectant," "I disinfect items I use outside (key, cell phone etc.)," "I take a shower or a bath," "I change my clothes" and "I wash my clothes or hang them under the sun", respectively.

The chi square test results regarding the comparison of the use of hand sanitizer according to the gender of the participants are given in [Table 4](#), and there is no statistically significant difference between the use of hand sanitizer by the male and female participants detected ($p: 0.05$).

It was ascertained after the review of [Table 3](#) that 42.37%, 27.79%, 64.92%, 20.27%, 24.37%, 14.58%, 29.84%, and 14.58% of the people included in the research gave the responses of "I care for my hair using natural methods," "I dye my hair myself," "I just wash and dry my hair," "I cut my own hair or a family member cuts it," "I trim/style my beard/mustache with a hair clipper or razor blade," "A family member cuts the hair on my nape using a hair clipper or razor blade," "I style my own hair or a family member styles it. (hair gel, wax, blow-dry, plait, hair tongs, etc.)" and "I search for online hair care suggestions applicable at home and apply those", respectively.

DISCUSSION

When the participants of this study were asked about information on COVID-19, they stated that people with chronic diseases or weak immune systems are in the risk group. The reason behind it may be associated with the fact that the disease is risky and deadly, especially for this group. In the present study, it was indicated that people and elderly who suffer from chronic diseases like diabetes, high blood pressure, and respiratory and cardiovascular diseases are in the risk group. Studies that were carried out (Hopkins, 2020) show that 80% of the cases recover without the need for serious medical intervention. Yet in serious cases, pneumonia can develop, and artificial breathing methods may be needed. For those who have a mild case of the disease, resting at home, fever-reducing measures and fluid intake is important. One out of five people contracting the disease has a severe case. The response to the same question with the lowest percentage is related to giving of COVID-19 information on mass media. The participants might have thought that the information given on social media, TV and newspapers as well as on family, friends, healthcare personnel, and teachers are not always true or that mass communication is different from personal communication. Therefore, the percentage for this question happened to be lower in comparison to others. According to Chaffee and Metzger (2001), it is hard to get feedback during mass communication. The viewer may not find immediate answers to the questions in mind, and as the things he or she sees and does not understand remain unanswered in his or her head, misunderstandings might take place. Therefore, while there is no immediate feedback in mass media and some time passes, it is also not as efficient as face-to-face communication.

When the participants were asked when they washed their hands, it was ascertained that most of them washed their hands after visiting the toilet. The reason for washing the hands especially after visiting the toilet may be the fact that people contract many diseases and are infected with bacteria in the toilet. In another study, it was indicated that most of the participants washed their hands after using the toilet (Sanchis Sánchez et al., 2021; Wada & Oloruntoba, 2021). In the study about washing of hands, which was carried out using similar questions, Larson et al. (1997) stated that the number of people who said that they washed their hands before meals was less than those who said they washed their hands after using the toilet. Sanchis Sánchez et al. (2017) however,

indicated that 71.1% of the participants washed their hands all the time before meals and 80.6% after meals. 58.3% of them washed their hands occasionally before going to the toilet and 98.9% always washed their hands after going to the toilet. In a study conducted by Sirait and Simarmata (2021) with young women studying at the university, it was ascertained that the percentage of the frequency of washing hands was before going to the toilet. This makes one think that this situation which shows similarities with the literature is an issue that concerns all segments. The response for this question with the lowest percentage is washing of the hands after sneezing or coughing. The reason for this may be the participants not having hygienic environmental conditions to wash hands, thus forgetting to wash hands or not feeling the need to do so. In a study conducted with students by Sanchis Sánchez et al. (2021), it was stated that 40.56% of the students did not feel the need, 33.89% forgot to do so and 11.7% did not wash their hands due to reasons like skin cracks, allergy, etc. In similar studies conducted for handwashing habits, the most frequent responses related to reasons for not washing hands included "not feeling the need," "lack of soap or paper towel," "hand cleaning products drying the hands," "being too busy" and "forgetting".

Mass media gains power according to their extent of determining the agenda. The realization of that involves a strong relationship between the characteristics of mass media and the time period they occupy in the daily lives of people (Baranova et al., 2020; Kiryakova et al., 2020; Mwangi et al., 2019).

As for the hair/beard/mustache grooming methods of participants during the lockdown for the COVID-19 pandemic, most of the participants indicated that they merely wash and dry their hair. The reason behind it may be that they think they maintain their personal hygiene during the COVID-19 pandemic by merely washing their hair with water. On the other hand, it was ascertained that a small part of the participants did not groom their hair at all. The reason may be that people are giving more importance to their health, rather than thinking of grooming their hair/beard/mustache during the COVID-19 pandemic. Several diseases, including infectious ones, can be prevented by improving personal hygiene. Cleaning the ears, the face and eyes, dental and mouth care, regular baths, and hair care are effective examples of personal hygiene (Simon, 2020).

The overall purposes of personal hygiene practices include removal of secreted fluids and microorganisms from the body, ensuring resting and comforting of people, decreasing the muscle tension, eliminating body odor, enhancing self-confidence by improving the appearance of people, and maintaining and developing skin health (Sanchis Sánchez et al., 2021).

CONCLUSION

The main goal of the present study was to determine the views of the people concerning their levels of awareness in terms of hygiene and personal care for protection against the COVID-19. One of the more significant findings to emerge from this study is that the participants paid attention to not having close contact with other people to protect themselves against the COVID-19 pandemic. Another significant finding is that television is found to be an important mass medium tool that the participants follow the information on personal care and hygiene-related to the COVID-19 pandemic most frequently. These findings have significant implications for the understanding of how researchers can be taken into consideration of hygiene and personal care for protection during the COVID-19. The findings from this study make several contributions to the current literature. First, the participants were aware of hygiene and personal care for protection. In particular, they gave importance to washing their hands and kept away one meter from other people during the COVID-19. Second, we found that television is a mass medium through which they follow information about hygiene and personal care during the COVID-19 pandemic most frequently.

SUGGESTIONS

Without a doubt, hygiene is vital for human and public health. Such behaviors are acquired through education and training and become a part of our lives through application. The following suggestions can be made based on the results of the present study:

- The study underlined what people pay attention to in household cleaning during the COVID-19 pandemic. It was ascertained that the participants ventilate the household frequently, but do not always wash hands and face towels. In that vein, people's needs for personal hygiene and care habits can be ascertained, planning can be done based on these needs and the content for the training of people can be determined accordingly.
- In this study, it was observed that television is the mass medium in which participants follow personal care and hygiene information on the COVID-19 pandemic and use Twitter less to follow items on the agenda. Health professionals can be used in terms of hygiene taking into consideration the fact that providing training to people for hygiene and health-consciousness would be highly effective in addition to mass media used to follow the agenda.
- Health education programs aimed at expanding/extending people's knowledge on COVID-19 can be organized.

Author contributions: All authors have sufficiently contributed to the study, and agreed with the results and conclusions.

Funding: No funding source is reported for this study.

Declaration of interest: No conflict of interest is declared by authors.

REFERENCES

- Abdulmir, A. S., & Hafidh, R. R. (2020). The possible immunological pathways for the variable immunopathogenesis of COVID-19 infections among healthy adults, elderly and children. *Electronic Journal of General Medicine*, 17(4), em202. <https://doi.org/10.29333/ejgm/7850>
- Ait Addi, R., Benksim, A., Amine, M., & Cherkaoui, M. (2020). Asymptomatic COVID-19 infection management: The key to stop COVID-19. *Journal of Clinical and Experimental Investigations*, 11(3), em00737. <https://doi.org/10.5799/jcei/7866>
- Aljofan, M., & Gaipov, A. (2020). Chloroquine and COVID-19: A light at the end of the tunnel, or is it another train? *Electronic Journal of General Medicine*, 17(4), em207. <https://doi.org/10.29333/ejgm/7863>
- Anthony, C., Githinji, S., Höser, C., Stein, A., Blanford, J., & Grossi, V. (2021). Kenyan school book knowledge for water, sanitation, hygiene and health education interventions: Disconnect, integration or opportunities?. *International Journal of Hygiene and Environmental Health*, 235, 113756. <https://doi.org/10.1016/j.ijheh.2021.113756>
- Arat, A., Şimşek, I. & Erdamar, G. (2014). The second grade students' practises about personal hygiene in regional boarding primary school. *The Journal of The Industrial Arts Education Faculty of Gazi University*, 33, 58-72.
- Baranova, E. A., Zheltukhina, M. R., Shnaider, A. A., Zelenskaya, L. L., Shestak, L. A., Redkozubova, E. A., & Zdanovskaya, L. B. (2020). New media business philosophy in conditions of mass media convergence. *Online Journal of Communication and Media Technologies*, 10(4), e202021. <https://doi.org/10.30935/ojcm/8387>
- Brown, J., Cairncross, S., & Ensink, J. H. (2013). Water, sanitation, hygiene, and enteric infections in children. *Archives of Disease in Childhood*, 98(8), 629-634. <https://doi.org/10.1136/archdischild-2011-301528>
- Chaffee, S. H., & Metzger, M. J. (2001). The end of mass communication? *Mass communication & society*, 4(4), 365-379. https://doi.org/10.1207/S15327825MCS0404_3
- Gryaznova, E. V., Vladimirov, A. A., Maltceva, S. M., Goncharuk, A. G., & Zanozin, N. V. (2020). Problems of virtualization and internetization of social space. *Lecture Notes in Networks and Systems*, 91, 119-124. https://doi.org/10.1007/978-3-030-32015-7_14
- Hesham, F., Riadh, H., & Sihem, N. K. (2021). What have we learned about the effects of the COVID-19 pandemic on consumer behavior? *Sustainability*, 13(8), 4304. <https://doi.org/10.3390/su13084304>
- Hassen, T. B., El Bilali, H., Allahyari, M. S., Berjan, S., & Fotina, O. (2021). Food purchase and eating behavior during the COVID-19 pandemic: A cross-sectional survey of Russian adults. *Appetite*, 165, 105309. <https://doi.org/10.1016/j.appet.2021.105309>
- Kiryakova, A. V., Kolga, V. V., Yumatov, A. S., Smorchkova, V. P., Romanova, E. N., Tuganov, Y. N., & Fedulov, V. I. (2020). Student representation of mass media as tool for forming public opinion. *Online Journal of Communication and Media Technologies*, 10(3), e202013. <https://doi.org/10.29333/ojcm/7934>
- Konstantinidis, C., Konstantoulas, D., Bebetos, E., & Bebetos, G. (2021). COVID-19 lockdown and physical activity: How do sexes react? *Aquademia*, 5(1), ep21007. <https://doi.org/10.21601/aquademia/10808>
- Lages, N. C., Villinger, K., Koller, J. E., Brünecke, I., Debbeler, J. M., Engel, K. D., Griebler, S., Homann, P. C., Kaufmann, R., Koppe, K. M., Oppenheimer, H., Radtke, V. C., Rogula, S., Stähler, J., Schupp, H. T., & Renner, B. (2021). The relation of threat level and age with protective behavior intentions during Covid-19 in Germany. *Health Education & Behavior*, 48(2), 118-122. <https://doi.org/10.1177/1090198121989960>
- Larson, E. L., Bryan, J. L., Adler, L. M., & Blane, C. (1997). A multifaceted approach to changing handwashing behavior. *American Journal of Infection Control*, 25(1), 3-10. [https://doi.org/10.1016/S0196-6553\(97\)90046-8](https://doi.org/10.1016/S0196-6553(97)90046-8)
- Meyer, S. (2020, November 13). *Understanding the COVID-19 effect on ecommerce*. <https://www.bigcommerce.com/blog/covid-19-ecommerce/#understanding-panic-buying-and-coronavirus>
- Mwangi, E. W., Gachahi, M. W., & Ndung'u, C. W. (2019). The role of mass media as a socialisation agent in shaping behaviour of primary school pupils in Thika Sub-County, Kenya. *Pedagogical Research*, 4(4), em0048. <https://doi.org/10.29333/pr/5950>
- Pruss-Ustun, A., Bos, R., Gore, F., & Bartram, J. (2008). *Safer water, better health: Costs, benefits and sustainability of interventions to protect and promote health*. World Health Organization.
- Sanchis Sánchez, E., Sánchez Lorente, M. M., Olmedo Salas, A., García Molina, P., Balaguer López, E., & Blasco Igual, J. M. (2021). Awareness of hand hygiene in health science students. Educational experience. *RidEC 2021*; 14(1), 44-49.

- Simon, A. (2020). *Body hair as a site of resistance: A qualitative study on how something as intimate as body hair has become so political and how it has the potential be reclaimed as something intimate again through relation building and coalition* [Master's thesis].
- Sirait, B. I., & Simarmata, V. P. A. (2021). The relationship of knowledge, attitudes, and personal hygiene practices of external genital organs to the incidence of leucorrhoea in students of the faculty of medicine, Indonesian Christian university class of 2019. *International Journal of Medical and Health Research*, 7(6), 60-66.
- Smirnova, Z. V., Bystrova, N. V., Golubeva, O. V., Lebedeva, T. E., & Kaznacheeva, S. N. (2020). Analysis of the socio-psychological climate in the work collective. *International Journal of Management*, 11(5), 465-475.
- Sorooshian, S. (2020). Quarantine decision due to coronavirus pandemic. *Electronic Journal of General Medicine*, 17(4), em206. <https://doi.org/10.29333/ejgm/7862>
- Wada, O. Z., & Oloruntoba, E. O. (2021). Safe reopening of schools during COVID-19: An evaluation of handwash facilities and students' hand hygiene knowledge and practices. *European Journal of Environment and Public Health*, 5(2), em0072. <https://doi.org/10.21601/ejeph/9704>

<https://www.ejmste.com>