

CHANGES IN ADOLESCENT HYGIENE HABITS CAUSED BY THE COVID-19 PANDEMIC

Bojana Milikić¹, Milena Zlatanović², Teodora Safiye¹, Jakša Dubljanin^{1,3}, Ljiljana Antić², Milena Despotović¹,
Stevan Luković⁴, Dalibor Stajić⁵ and Nela Đonović⁵

¹University of Kragujevac, Faculty of Medical Sciences, Serbia

²The Academy of Educational and Medical Professional Studies, Department of Čuprija, Serbia

³Zemun Clinical Hospital Centre, Department of cardiology, Belgrade, Serbia

⁴University of Kragujevac, Faculty of Economics, Serbia

⁵University of Kragujevac, Faculty of Medical Sciences, Department of Hygiene and ecology, Serbia

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Corresponding author:

Dalibor Stajić, PhD,

University of Kragujevac, Faculty of Medical Sciences,
Department of Hygiene and ecology, 69 Svetozara
Markovica Street, 34000 Kragujevac, Serbia

Phone: +381 34306800

E-mail: stajicdalibor@yahoo.com

ABSTRACT

The aim of this study was to examine and determine hygiene habits in the adolescent population depending on whether the Covid 19 pandemic affected the improvement of hygiene habits in the same population. The research is designed as a cross-sectional study. A questionnaire created using the Google Docs platform was used as an instrument. The sample consisted of 89 respondents of both sexes, aged 18 to 23 years. The analysis shows that there is a difference in maintaining hygienic habits before and after the introduction of the state of emergency. In 20.22% of cases, hygienic habits were better during the state of emergency, and after the mitigation of measures, compared to the period before the introduction of the state of emergency, and in 5.62% of respondents hygienic habits were worse, while in 74.16% of respondents there were no change in hygienic habits. The analysis of the use of disinfectants and masks shows that 60.68% of respondents used disinfectants and masks more often after mitigation of emergency measures compared to the period before the introduction of the state of emergency, 5.62% of respondents used less, while in 33.70 % of respondents there were no changes in the use of disinfectants and masks.

The results of this study show a positive relationship between hygiene habits before and during the Covid 19 pandemic, and after mitigation, as well as between the use of disinfectants and masks before and during the Covid 19 pandemic, and after mitigation, which justifies further research in this area.

Keywords: Hygienic habits, protective masks, disinfectants, adolescence, Covid-19.



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INTRODUCTION

Human beings are constantly under the influence of unfavorable factors that can endanger his health. The essence of the fight against unfavorable factors is to remove everything negative from the external and internal environment, and this is achieved by proper and regular maintenance of hygiene (1).

Hygienic habits are crucial in preventing the spread of many infectious diseases (2). They have been attributed the most important role in preventing Covid-19 infection. They include procedures that are performed to maintain personal hygiene and should be performed daily, in a proper manner. Hygiene habits are crucial for the individual, and then for the whole society, precisely because of the collective concern for preventing infections. A person who has formed his hygienic habits has the ability to take responsibility for his own health, the health of his relatives, but also for public health.

Severe acute respiratory syndrome (SARS) virus was first identified at the very beginning of the 21st century, more precisely in 2003, its appearance showed that the outbreak of an epidemic at one end of the planet could potentially endanger the entire planet. The first case was recorded in late February 2003 in Hong Kong, and a global alert system was introduced in mid-March 2003, after which, with the cooperation of experts and governments around the world, the SARS virus was brought under control in just three months. Old measures have been applied to control the virus, from isolation, contact control, disinfection, movement restrictions and control (3).

A similar situation happened in December 2019 in the city of Wuhan, when the first case was recorded, when the authorities of the People's Republic of China informed the World Health Organization (WHO) about the appearance of the first cases of respiratory infections. Shortly afterwards, the World Health Organization (WHO) informed the world of the new danger. In early January 2020, a new virus was identified, which was designated as the corona virus (SARS-CoV-2), and the disease was named Covid-19 (4, 5). The corona virus causes a disease whose symptoms can give the image of a mild cold, all the way to severe acute respiratory syndrome (SARS) (5).

After the appearance of the first cases recorded in the People's Republic of China, the disease began to spread in other countries, precisely because of the constant circulation of the population, which resulted in the appearance of the first case of coronavirus in Serbia, after two months. In order to protect the population, the Government of the Republic of Serbia declared a state of emergency on March 15, 2020 with a number of restrictions and it lasted until April 30, 2020, when a decision was made to mitigate the measures of limited movement during the state of emergency (6). Decisions on measures have changed in the year that the fight against the virus has been going on.

The following hygienic habits were examined in this paper: hand washing in different situations, use of antiseptics, masks and gloves. Recommendations at the beginning and during the pandemic on maintaining the hygiene that are being implemented were given by the Institute for Public Health Trampoline (7).

The most noticeable details among the population of Serbia and the whole world since March 2020, which reflected the adherence to the measures and respect for the recommendations in the protection of the health of the population, were the wearing of face masks as well as the use of rubber gloves. It was an unusual picture of the population, considering that so far we have only seen masks and gloves in use by health workers.

It turned out that the discovery of gloves that are the product of a romantic relationship between a surgeon and an instrumentalist, (for that reason called "love gloves") which was crucial for the introduction of aseptic work in surgery, back in 1889 (8) as well as the discovery of masks which occurred at the time of the fight against the plague, (they were like a beak and were worn by doctors), (9) and in 2020 found their purpose and once again confirmed the great importance of their discovery and use in the fight against another new disease, this time caused by coronavirus (SARS-CoV-2).

Masks and gloves, with their daily presence, in addition to the constant use of antiseptics and frequent reminders to wash their hands properly, marked one period of our lives, 2020 as well as the current year 2021, and were a symbol of recognition in respecting Covid-19 prevention measures.

Hygienic habits are adopted and formed from birth first in the family environment, this process becomes more complicated over time, the role of the family is taken over by the individual adopting knowledge, habits and attitudes from his environment. It can be said that an individual in the terminal phase of growing up has formed attitudes and habits. In this study, we opted for the late and final stages of adolescence, because it represents a transition to the world of adults, when it is assumed that a person is formed with their attitudes and habits (10).

The aim of this study was to examine hygiene habits in the adolescent population and to determine whether the Covid 19 pandemic affected the improvement of hygiene habits in the same population.

MATERIALS AND METHODS

The research was conducted as a cross-sectional study in the period from 07.06.2020. to 12.06.2020. in the adolescent population. The sample consisted of 89 respondents aged 18 to 23 years. The average age of the respondents was 21.03 years. Data were collected by survey method via viber and other social networks.



Instrument

A questionnaire created for the purposes of this research by the authors in the Google Docs platform was used as an instrument. The questionnaire consisted of 39 questions grouped into three sections: the sociodemographic section, questions examining adolescents' attitudes before the Covid-19 pandemic, and a third group of questions examining adolescents' attitudes during the Covid-19 pandemic, and after mitigation. The socio-demographic questionnaire was used to collect general data: gender, age, educational structure, structure by employment status and structure by professional profile. The questionnaire that examined attitudes before the introduction of the state of emergency consisted of items that examined hygienic habits before the introduction of the state of emergency as well as the use of disinfectants and masks. The questionnaire that examined attitudes during the state of emergency, and after the mitigation of measures, consisted of items that examined hygiene habits, as well as the use of disinfectants and masks during the state of emergency, and after the mitigation of measures.

There were a total of 39 claims, the scale is ordinal because the Likert scale from 1 to 5 was used.

Statistical analysis

A nonparametric Wilcoxon rank test was used. The analysis was performed in SPSS for Windows. The data are shown in a table. The difference in the probability level $p < 0.05$ was considered statistically significant.

RESULTS

The study included 89 respondents of both sexes, aged 18 to 23 years. An overview of the demographic characteristics of the respondents is shown in Table 1.

Table 1. Distribution of respondents according to sociodemographic characteristics.

Characteristics		Number	Percent
Gender	Male	31	34,83%
	Female	58	65,17%
Age	18-20	36	40,45%
	21-23	53	59,55%
Structure according to employment status	Unemployed	10	11,24%
	Employed	19	21,35%
	Student	60	67,42%
Educational structure	Elementary school	2	2,25%
	High school	52	58,43%
	Bachelor	24	26,97%
	Master/PhD/University	11	12,36%

Table 2. Results of statistical analysis using the method of descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Hygienic habits-before	89	3.00	5.00	4.7079	.54777
Hygienic habits-after	89	3.00	5.00	4.8315	.50533



Table 3. Results of statistical analysis using the method of descriptive statistics.

	N	Mean Rank	Sum of Ranks
Hygienic habits, Before Negative Ranks	5 ^a	16.60	78.00
Hygienic habits, After Positive Ranks	18 ^b	11.00	198.00
Ties	66 ^c		
Total	89		
a. Hygienic habits, After < Hygienic habits before			
b. Hygienic habits, After > Hygienic habits before			
c. Hygienic habits, After = Hygienic habits before			
Test Statistics ^b			
	Hygienic habits after and before		
Z	-2.013 ^a		
Asymp. Sig. (2-tailed)	0.044		
a. Based on negative ranks			
b. Wilcoxon Signed Ranks Test			

From the results shown in Table 3 we see that 18 respondents (20.22%) improved hygiene habits during the state of emergency, in 5 cases (5.62%) habits are worse, and 66 respondents (74.16%) maintained hygiene habits at the same level. These differences were statistically significant ($p = 0.044$) (Table 3)

Table 4. Results of statistical analysis using the method of descriptive statistics for the use of disinfectants and masks

	N	Minimum	Maximum	Mean	Std. Deviation
Disinfection and masks before	89	1.00	5.00	2.7191	1.42214
Disinfection and masks after	89	1.00	5.00	4.1798	1.09297

Table 5. Results of statistical analysis using the method of descriptive statistics

	N	Mean Rank	Sum of Ranks
Disinfection and masks after - negative ranks	5 ^a	11.00	55.00
Disinfection and masks before - positive ranks	54 ^b	31.76	1715.00
Ties	30 ^c		
Total	89		
a. Disinfection and masks After < Disinfection and masks before			
b. Disinfection and masks after > Disinfection and masks before			
c. Disinfection and masks after = Disinfection and masks before			
Test Statistics ^b			
	Disinfection and masks after and before		
Z	-6.327 ^a		
Asymp. Sig. (2-tailed)	0.000		
a. Based on negative ranks			
b. Wilcoxon Signed Ranks Test			

The frequency of use of protective equipment after mitigation of measures is higher in 54 (60.67%) respondents compared to the period before the introduction of the state of emergency, 5 (5.62%) respondents use protective equipment less often after mitigation of emergency measures, and in 30 (33), 70% of the respondents there were no changes in the frequency of use of protective equipment. These differences are highly statistically significant ($p = 0.000$) (Table 5).



DISCUSSION

The Covid-19 pandemic has led many researchers to ask questions about what hygiene habits were before and whether they changed during the Covid-19 pandemic, in order to prevent Covid-19.

Goha and co-workers state that Covid 19 is transmitted during conversation, coughing, sneezing like aerosol drops, and the World Health Organization recommends regular hand washing with water and the use of alcohol-based disinfectants and physical distancing. Goha further states that wearing a protective mask empowers health workers in the fight against Covid-19, while for an ordinary person, the mask is currently the most powerful psychological symbol. Wearing masks for them also represents greater protection than other recommended measures such as hand washing, personal hygiene and physical distance. For the general public, hand hygiene is a more effective strategy to prevent Covid-19 infection (11).

In his paper, Jefferson points out that historically, during the outbreak of severe acute respiratory syndrome virus, human-to-human transmission could be reduced by 55% with regular hand washing alone, 68% by wearing a face mask, and in combination with gloves, and protective equipment decreased by 91% (12).

Berardiai's associates state that there is an increased demand for disinfectants during the Covid-19 pandemic and that it will remain high for a long time, until more effective infection prevention measures are available, such as the SARS-Cov-2 vaccine. They believe that public awareness of the importance of hygiene habits during this pandemic will have a significant impact on hygiene habits globally. Their assumption that the habit of using hand sanitizers will remain after Covid-19, as a new rule of personal hygiene (13).

At the very beginning of the appearance of Covid-19 infection, the question was whether hand washing as a measure of prevention of infectious diseases is also relevant for Covid-19. A meta-analysis showed that good hand hygiene prevents respiratory and gastrointestinal diseases by 31%. Soap has proven to be the best means of hand hygiene through research because it disintegrates the outer lipid layer of the virus (14).

Gammon and Hunt cite skin irritation as a significant problem, which leads to the appearance of a larger number of microorganisms that colonize the skin and enable an increased spread of infection as a result of wet or damp hands and due to inadequate drying. The efficiency of hand drying is important for maintaining the integrity of the skin, preventing moisture, and thus controlling the spread of microorganisms. This is especially important during an epidemic when hand hygiene is greatly increased. Numerous studies indicate that hand drying is an integral part of hand hygiene where two key factors are listed, namely the methods and efficiency of hand drying. Hand hygiene has played an important role

in preventing infection, especially during the Covid-19 pandemic (15).

A cross-sectional study of Chen and co-workers in the primary school population in Wuhan found that 42.05% of students had satisfactory behavior in hand washing, while half of the students showed responsible behavior in using masks. Gender, residence as well as the occupation and education of the parents significantly influenced hand hygiene, as well as the use of masks. The authors believe that education on the importance of hygienic habits and wearing masks is very useful in the prevention of infection and that parents have a significant role in the education itself, and that the Government can increase awareness of prevention in children through various programs (16).

The health transition has contributed to the reduction of infectious diseases, but in many low-income countries it is still a very significant problem. Hand hygiene is one of the important interventions to prevent infectious diseases and Covid-19 was not at a satisfactory level in a significant number of countries before the pandemic due to limited conditions (17).

Chiu and co-workers conducted a study to investigate the impact of preventive measures to combat infectious diseases of influenza, enteroviruses and pneumonia of all causes during the Covid 19 pandemic. In the period from the 45th week of 2019 to the 21st week of 2020, there was a reduced incidence of influenza, enterovirus and pneumonia of all causes during the Covid 2019 pandemic. Preventive measures, wearing masks, hand hygiene, and social distance reduced the impact of Covid-19, and these measures have led to a reduction in other respiratory infections as well (18).

The mentioned research, as well as the results of our research within this study, show that not only adolescents, but also the entire population has improved hygiene habits, which is confirmed by higher frequency of hand washing, use of disinfectants and masks as a prevention measure during the Covid-19 pandemic.

CONCLUSION

Hygienic habits, attitudes and behavior are factors that reduce or increase the body's resistance to infectious diseases. The habits themselves depend on both the cultural-social and the historical concept of a certain group, society or the whole population. The conducted examination shows that, due to the upbringing of the acquired habit, they change due to the pressure of the environment. A higher percentage of those who give importance to basic hygiene (hand washing) after general social pressure (epidemic) says that in the adolescent population the social message encourages habit, which, passed on to the next generations, creates a culture of higher level of personal hygiene (hygiene habits).

Regarding the use of disinfectants and masks, the situation is somewhat different, because until the COVID 19



crisis, wearing masks alone was not common. In practice, disinfectants were not used as much before the pandemic as they are now during the pandemic. Adolescents, as a population, which, with all their rebellions, accept changes much easier, have to carry this great social change on their backs.

The Covid 19 pandemic affected the improvement of hygiene habits in the observed population. The survey was conducted on a small number of respondents, as a pilot project with the aim of conducting a more extensive survey with a larger number of respondents in relation to certain territories of our country.

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