



ABSTRACT

SARS-CoV2 has characteristics that are still unknown and therefore untreated. This disease demands efficient biosafety practices for professionals and the population considering the high infectivity rate of these viruses. The objective of this work was to evaluate the knowledge of the population of Northern Paraná - Brazil about the methods indicated for the prevention and reduction of the risk of infections in the midst of the COVID-19 pandemic. A field research was carried out in the form of a cross-sectional design with the participation of 137 respondents. A questionnaire was applied through Google Forms, the data collected were evaluated using the IBM SPSS Statistics software (version 25) and the dependence of the variables through Pearson's Chi-square test. In this work it was concluded that the population was conscious about the importance of prevention, forms of contagion and symptoms related to the Pandemic caused by SARS-CoV-2. In addition, individuals observe professional ethics regarding infection prevention. The mechanisms for seeking health services are not yet clear to the general population. Finally, information on health prevention should be better understood by the population, since health professionals have less infectious diseases.

Keywords: Investigative questionnaire; Epidemiology; Biosafety; SARS-CoV-2, Health education

RESUMO

O SARS-CoV2 apresenta características ainda desconhecidas e, portanto sem tratamento. É imprescindível que haja eficiente biossegurança dos profissionais de saúde e da população considerando a alta taxa de infectividade desses vírus. O objetivo deste trabalho foi avaliar o conhecimento da população do Norte do Paraná – Brasil acerca dos métodos indicados para a prevenção e diminuição do risco de infecções em meio à pandemia do COVID-19. Foi realizada uma pesquisa de campo na forma de delineamento transversal com a participação de 137 entrevistados. Foi aplicado questionário através do Google Forms, os dados coletados foram avaliados através do software IBM SPSS Statistics (versão 25) e a dependência das variáveis através do teste de Qui-quadrado de Pearson. Conclui-se que a população mostrou-se consciente sobre a importância da prevenção, formas de contágio e sintomas relacionados à Pandemia causada pelo SARS-COV-2. Além disso, indivíduos observam a ética profissional com relação à prevenção de infecções. Os mecanismos de procura dos serviços da saúde ainda não estão claros para a população em geral. E por fim, informações sobre a prevenção da saúde deveriam ser mais entendidas pela população, visto que profissionais da saúde possuem menos doenças infectocontagiosas.

Palavras-chave: Questionário investigativo; Epidemiologia; Biossegurança; SARS-CoV-2, Educação em saúde

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INTRODUCTION

The year 2020 will be marked in the history of mankind due to the pandemic resulted from a group of previously described viruses that have undergone mutations. Originating in China, SARS-CoV2 was later named as a new strain of the Coronavirus virus class^(1,2). Since its characteristics are still unknown and are in the process of being discovered, in addition to the fact that there are no vaccines or treatments, it is essential that there is efficient biosafety of health professionals and the population considering the high infectivity rate of these viruses.^(3,4) Taking into account the growing rate of mortality worldwide, as well as economic and social impacts, a set of actions is necessary to prevent the uncontrolled spread of the virus that causes the disease COVID-19, especially by health professionals⁽⁵⁾.

SARS-CoV-2 can promote direct or indirect transmission⁽⁶⁾. According to the same authors, direct transmission occurs through coughing and sneezing in an environment and indirect transmission occurs through contagion on surfaces that present the virus. Since the new coronavirus is transmitted between people or through objects contaminated by people, and in the absence of prophylactic or therapeutic methods, social isolation is necessary to reduce the spread^(7,8,9). Thus, there is great importance in the search for knowledge and ways of preventing cross-infection by the population⁽⁹⁾.

Faced with this chaotic situation in

which individuals get sick and the mortality rate shows exponential growth, people in general must follow the biosafety protocols contributing to the reduction in the risk of disease transmission⁽¹⁰⁾. The individual responsible for supplying the food in the house must remove his clothes immediately after arriving at home and the products must be disinfected, whether packaging or fruits, vegetables and legumes. The choice of disinfectant should be according to the type of product. Alcohol, bleach (concentrated or diluted) or soap can be used⁽¹¹⁾. According to the same authors, it is important to clean all the places that can be touched on the vehicle, such as the steering wheel, radio and door handles.

The health professional has the duty to use all the personal protective equipment (PPE) requested in his country, as well as paying attention to careful cleaning potentially infected materials⁽¹²⁾. The current challenge is to be aware of the magnitude of the current virus, strictly following the biosafety protocol⁽⁵⁾.

Although it is extremely important that health professionals follow the biosafety protocol previously described, these measures are not sufficient to contain the evolution of cases in a pandemic situation. Thus, it is necessary to mobilize the entire population to contain the progress of this disease. In this context, the purpose of this study was to analyze the knowledge that the resident population in northern Paraná has on biosafety methods

applied in the prevention of COVID-19, the research was carried out at the beginning of the dissemination of sanitary measures determined by the Ministry of Health of Brazil. In addition to assessing the profile and knowledge of this population, the work compares this knowledge with that of some health professionals.

OBJECTIVE

The objective of the present study was to evaluate the knowledge of the population of Northern Paraná - Brazil about the means and methods used to prevent the spread of the SARS-CoV2 virus in the midst of the COVID-19 pandemic through people and health professionals, through the application of questionnaires.

METHODOS

The study was a field research with a defined universe, and classified as descriptive and exploratory-quantitative. The data were collected through an online questionnaire about the characterization of the participants' profiles and their attitudes towards biosafety, answered by residents of Northern Paraná (Brazil).

The sample consisted of 137 people. As an inclusion criterion, participants needed to be at least 18 years old, and there was no gender or race restriction. Those who qualified were asked to sign the Free and Informed Consent Form (ICF).

From April 13 to April 17, 2020, a questionnaire was applied through Google Forms containing objective questions regarding knowledge about ways to reduce the risk of cross-infection by SARS-CoV-2 and, thus, respecting the proposed social isolation by the World Health Organization (WHO). The variables covered in the questionnaire were: sex, health professionals, undergraduate students in the health field, risk group, use of a face mask or protector, use of 70 ° alcohol as a disinfectant method, knowledge of the use of certain levels of public health for each symptom of SARS-CoV-2 (COVID-19), antiseptic methods alternative to 70° alcohol and the observation of the biosafety of health professionals by the population. The first part of the questionnaire ⁽¹³⁾ contemplated questions related to the individual's gender, age and academic background.

The second part of the questionnaire sought to assess knowledge about biosafety, highlighting and examining the use of Personal Protective Equipment (PPE's) and the disinfection of objects. The questionnaires were modified from the work of Schoroeder et al. ⁽¹³⁾.

Due to the concern with the fidelity of the respondents' answers, anonymity was chosen in the questionnaires, as suggested by Severino⁽¹⁴⁾. The collected data were evaluated using the IBM SPSS Statistics software (version 25) to verify the frequency of the proposed

variables among the interviewees and their dependence using Pearson's Chi-square. The results were considered significantly dependent when $p < 0.05$.

RESULTS

The significant data obtained from the chi-square test are shown in Table 1. The participants in this study, residents and/or

health professionals in the state of Northern Paraná, were 73% female and 27% male. Regarding age, 72.3% were young people aged 18-25 years, 18.2% were people aged 26-35 years old, 3.6% were between 36-45 years old, 4.4% were between 46-55 years old, 0.7% between 56-65 years and 0.7% were elderly people aged 66-75 years.

Table 1: Population knowledge about preventive measures against COVID-19.

	Yes		No		At risk group and still not left home		p-value		
	F	M	F	M	F	M			
<i>Use of mask or face protection</i>	55%	48,6%	42%	37,8%	3%	13,5%	0,066		
<i>Use of 70° alcohol</i>	86%	75,7%	11%	16,2%	3%	8,1%	0,280		
<i>Use of mask or face protection</i>	O	HP	O	HP	O	HP	0,048*		
<i>Use of 70° alcohol</i>	O	HP	O	HP	O	HP	0,992		
	Yes		No		Maybe	No response	p-value		
<i>Knowledge about the correct search for health service levels</i>	F	M	F	M	F	M	F	M	0,024*
	85%	64,9%	10%	27%	5%	5,4%	0%	2,7%	

Pearson's Chi-square test. * $p < 0.05$; F = female; M = Male; HP = Health Professionals; O = Other interviewees;

The respondents' education level was 1.5% for those with incomplete elementary school, 0.7% for complete elementary school, 0.7% for incomplete high school, 3.6% for complete high school, 66% did not finish school higher education and 27% had already finished higher education. Among those with incomplete higher education, 60.6% are health students. Among those who have degrees, 51.8% are health professionals.

When evaluating the use of a mask or

facial protector ($p = 0.066$) and 70% alcohol ($p = 0.280$) as a disinfectant method, we noticed that there is no level of significance correlation with the individual's sex.

The relationship between the use of facial protection or mask in everyday life was verified (when going to the market and pharmacy, for example) with the participants, health professionals or not. It was observed that 63.6% of health professionals wore a mask and only 43.7% of the other interviewees stated that

they used the mask for daily activities. It was observed that those who answered that “they had not left home yet because they were at risk group”, 8.5% were not health professionals and 3.0% belonged to this class ($p = 0.048$). It was found that there is no statistical difference between age and the use of masks. All age groups use protection equally.

Respondents were asked about the level of knowledge of the signs and symptoms of COVID-19 and which health services should be used. Of those who were aware of the signs of Sars-Cov-2, 85% were women and 64.9% were men. Those who replied that they had no knowledge of this subject, 10% were women and 27% were men. In addition, 5.0% of women and 5.4% of men were undecided, thinking they would know if they needed to act. 2.7% of men said they preferred not to answer. All women expressed their opinions. From the chi-square correlation test, it was observed that the level of knowledge was dependent on the individual's gender ($p = 0.024$).

Participants were assessed for their knowledge of the existence of an alternative antiseptic method to ethyl alcohol (70%), such as water and soap described by Dellaroza et al. (11). It was found that among the interviewees who had knowledge about another alternative method, 73% were men and 49.5% were women. Of those who did not know, 30.3% were women and 8.1% were men. Some were in doubt if they had previously heard about

this subject, 13.5% men and 12.1% women. Of those who chose not to answer, 5.9% were women and 1.5% were men ($p = 0.038$).

However, when analyzing the relationship between alcohol use between the general population and health professionals, there was no significant relationship ($p = 0.992$). In addition, there was no significant difference between health professionals and the general population who observed biosafety care when undergoing health procedures ($p = 0.063$) (Table 1).

DISCUSSION

In this study, it was observed that all participants, regardless of gender, are aware of the use of the mask as a facial protector and alcohol gel as an antiseptic. Thus, it was realized that the population in general understands the importance of its use. Knowledge about the importance of using PPE is not really new.

Phin et al. ⁽¹⁵⁾ described the use of PPE during the pandemic caused by the Influenza virus in 2009 was essential not only for the population, but also for the hospital environment. During the SARS-CoV-2 (COVID-19) epidemic it could not be otherwise. The great demand and production of masks, gloves and facial protectors reflect the unbridled search not only by health professionals for these preventive means (16). In addition, Lange (2004) ⁽¹⁷⁾ pointed out the importance of wearing masks during the SARS

epidemic that occurred in 2004 as a way of controlling infection. The new coronavirus pandemic was no different, and a study pointed out the need to use masks in epidemic scenarios of COVID-19⁽¹⁸⁾. It is worth mentioning that when the study was carried out, there was no obligation to use a mask in public environments in Northern Paraná - Brazil.

The results obtained in this work showed that the general population, both health professionals and the other interviewees, often use the mask when they are driven to social interaction in community settings. Important results, since the use of the mask is essential due to the transmission of the virus through the eyes, nose or mouth, as stated by the authors Guner et al.⁽⁷⁾ and the World Health Organization⁽⁹⁾. In addition, this protective equipment is simple to use, has no contraindications and is low cost⁽¹⁹⁾; and should be used by all people, as they contribute to controlling the spread of the virus⁽²⁰⁾.

However, it was evident that although health professionals demonstrated greater use of the mask, a considerable part of this class answered that they do not use this protective equipment when they need to have social life in community settings. This result probably occurred due to little disclosure about COVID-19 at the beginning of the Pandemic in Brazil and the non-mandatory use at the time; and it can be justified, since the daily practice of clinical care requires its constant use⁽²¹⁾ and,

thus, it may have caused a greater difficulty in the beginning for some professionals to accept the use of this equipment at times outside the work shift.

Among the youngest (18-25 years), the use of the mask showed high rates, since a good portion of the interviewees are health students and make daily use in curricular internships. Knowledge about biosafety among health students is notable among undergraduate courses in Brazil⁽²²⁾.

Seto et al.⁽²³⁾ evaluated 69 health professionals exposed to SARS-infected individuals in a Hong Kong hospital and concluded that wearing a mask was essential to prevent infection by such professionals. In addition, professionals who were not strict in their use were more easily infected through droplets dispersed in the environment.

However, since the hands are sources of contamination of this infectious agent, adequate hygiene must be performed after removing the used masks⁽¹¹⁾. In this sense, an infected person can release droplets through breathing or even sneezes capable of reaching surfaces, such as tables and cell phones and, with this, maximize the transmission of SARS-CoV-2 by cross-infection.

The knowledge of the importance of social isolation has a unique relevance, even if they have only mild symptoms of COVID-19⁽²⁴⁾. Since there is no vaccine or prophylactic measure for the disease, it has

been pointed out that social isolation is the best tool for the control of COVID-19 ^(24,25). Oliveira ⁽²⁶⁾ showed that in Brazil, the states that presented the highest index of social isolation, obtained around 17.9% fewer deaths due to the disease. To this end, the World Health Organization (WHO, 2020) throughout this year, it presented several precautions for correct social isolation inside and outside the home and, thus, helping different countries and public health in orienting the population. When relating information about the demand for health services, it was observed that women have greater knowledge of the symptoms of SARS-CoV-2 and the correct health service they should seek. Women seek to learn more about health than men ⁽²⁷⁾. However, it is extremely important that your search is done correctly by everyone, minimizing losses in care. The symptoms of the new coronavirus (COVID-19) are: fever, dry cough and/or tiredness and some patients may report runny nose, nasal obstruction, sore throat and/or diarrhea, the latter being less frequent. More severe symptoms can involve breathing problems, such as shortness of breath ^(11,28).

Thus, as indicated by the Brazilian health agencies and the World Health Organization, if the symptoms remain mild, the patient should remain at home and notify the competent authorities. However, if the symptoms are more severe, such as runny nose, fever and cough, the individual should seek the

Basic Health Unit and specialized places for care for cases of COVID-19. If the symptoms are runny nose, fever, cough and shortness of breath, the recommendation is to look for the Emergency Care Unit ⁽¹¹⁾.

However, on antiseptic products, in this study it was shown that men showed greater knowledge. In this case, those who preferred not to answer were male and female, but women were the majority. In addition, health professionals showed greater and timely knowledge of ways to prevent cross-infection and contagion by COVID-19. Brazilian higher education in the areas of health has a high content of disciplines applied to microbiological knowledge and clinical care ⁽²⁹⁾.

Interestingly, it was observed that the general population has a higher prevalence among risk groups in relation to health professionals. This may have occurred in view of the greater knowledge of these professionals in relation to the search, prevention and treatment of diseases, which favors the application of prophylactic measures in their personal lives.

In relation to the higher prevalence of men in a risk group in relation to women, the national policy of comprehensive health care for men has published that complications would be prevented if men paid regular attention to prevention ⁽²⁷⁾. In addition, when they seek primary care, they do not follow treatment correctly. Compared to women, they are often

more exposed to cigarettes, have an inadequate diet, and develop physical activities in a less regular manner. In Brazil, these differences reflect the increased mortality rate of men compared to women ⁽²⁷⁾ and are comorbidities associated with greater infection and more severe symptoms compared to SARS-CoV-2 ^(30–32).

The general population and health professionals understand the importance of using alcohol equally. Probably, in times of pandemic, the amount of information about the importance of its use was effective. It was observed in the present study that both professionals in the field and laypeople observe biosafety care by health professionals based on procedures performed during this period. On the other hand, a bias observed in this study is based on the fact that although most participants understand the importance of using the use of PPE, we are not aware if the interviewees use these methods properly.

Adaptations must emerge in the midst of a new disease, reconciling ethics in biosafety actions ⁽³³⁾. Professionals should update themselves as new studies on the disease emerge. They must protect their patients from the disease and serve as promoters of correct knowledge and based on scientific evidence ⁽³⁴⁾. A practical example is magazines in a clinic waiting room that can act as a source of infection for patients. The health professional must pay attention to patient care in all areas

and possibilities of exposure and spread of the virus. In addition, give greater attention to the use of personal protective equipment (PPE's), as they are of great importance in controlling and fighting the new coronavirus.

CONCLUSION

In this work it was possible to conclude that even at the beginning of the dissemination and population isolation, the population of the North of Paraná was conscious about the importance of prevention, forms of contagion and symptoms related to the Pandemic caused by SARS-CoV-2; evidenced in the use of masks and basic knowledge about biosafety. In addition, individuals observe professional ethics regarding infection prevention. The mechanisms for seeking health services are not yet clear to the general population. Finally, information on health prevention should be better understood by the population, since health professionals have less infectious diseases.

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- OBSERVAÇÃO:** Os autores declaram não existir conflitos de interesse de qualquer natureza.