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Military Knowledge and Practices in Relation to Preventing and Combating COVID-19

Nivaldo Chirindza[1*], & Lucília Mangona[2]

[1]*Public Health, Department of Civic-Patriot Education, Army Command, Maputo, Mozambique*

[2]*Higher School of Sport (ESCIDE), Eduardo Mondlane University, Maputo, Mozambique*

[*]**Corresponding author:** Nivaldo Chirindza, Public Health, Department of Civic-Patriot Education, Army Command, Maputo, Mozambique

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Abstract

Coronavirus disease 2019 was first reported in the city of Wuhan in the Chinese province of Hubei in December 2019 and is caused by Severe Acute Respiratory Syndrome Coronavirus 2. According to the Ministry of Health Mozambique registered the first case of coronavirus on March 22, 2020 and, up to the date of production of this research, had about 230 thousand cases. The modus vivendi of the military, poses a high risk for COVID-19 infection. Hence, there is a need to increase knowledge and improve practices regard to the prevention. However, no study that addresses this issue in the Armed Forces of Defense of Mozambique was found. This study aims to analyze the knowledge and practices of the military in relation of preventing and combating COVID-19. It was carried out at the Army Command, with a sample of 162 subjects selected for convenience. The subjects were submitted to a questionnaire about knowledge and good practices of prevention of COVID-19. Most participants had a high level of knowledge about COVID-19. A little over half of the participants tend to practices conducive to disease prevention. A considerable number demonstrated to have deviant practices in relation to prevention measures recommended by health entities, suggesting health education interventions aimed at this population segment, in particular, especially with regard to daily practices.

Keywords: Knowledge, Practice, Prevention, Combat, Military, COVID-19

Introduction

Dispersed from Wuhan, in Chinese province of Hubei in December 2019, and already reached all continents of the world, the current pandemic of Coronavirus Disease 2019 (COVID-19), thus declared by the World Health Organization (WHO) in March 2020, is caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARSCoV 2) and represents one of the greatest challenges of the 21st century for Public Health and the international scientific community, due to its great and devastating impact not only on health but also in various social and economic areas of nations [1-3].

The new coronavirus (SARS-CoV-2) is the causative agent of COVID-19, a disease that affects the respiratory system, with signs compatible with those of the flu, with manifestations such as fever, cough, headaches and, in more severe cases, progress to dyspnea and bilateral pulmonary pneumonia, being more susceptible individuals with the presence of factors or comorbidities such as diabetes mellitus, arterial hypertension and coronary disease and/or immunocompromised individuals [4-6].

Since the beginning of the COVID-19 outbreak, there has been great concern about a disease that has spread so quickly in all regions of the world, having infected over 500 million people and killed over six million, until the date of production of this article [7].

Mozambique, according to the Ministry of Health, officially registered the first case of infection with the coronavirus on March 22, 2020 [8]. And, since then, although strategies have been promptly taken to contain the contamination and spread of the virus the number of infections has been increasing, having been reported throughout the country about 230 thousand positive cases and 2215 Death up to the date of production of this research, as well as some cases of infection in militaries have been reported.

Efforts are being undertaken in several laboratories and pharmaceutical companies worldwide, in order to produce specific and effective antiviral vaccines to prevent infection by SARS CoV-2, with several already approved and in use almost all over the world. However, infected people have been treated with drugs used to treat other viruses with similar symptoms and signs, such as antipyretics, analgesics, antitussives / expectorants and anti-

emetic, in order to alleviate such symptoms [8, 9].

However, even with the use of immunizing vaccines, while there is no specific treatment for the cure of COVID-19, health authorities recommend prevention strategies as the main way to combat this disease [7, 8].

As a way of reducing the risk of the spread of SARS-CoV-2, Mozambique declared a state of health emergency that was in force from April 1st to September 6th, 2020, which included reducing the mobility of citizens, reducing the number of users in public transport and workplaces, restrictions or prohibitions on leisure, sporting, cultural events, etc. [7].

In addition, many strategies contained in the protocol for preventing and combating COVID-19 are not applicable to the military due to the specificity of the regime of their work. On the other hand, the military live in a barracks model with activities that are usually carried out together, constituting an agglomeration, sharing the same spaces (dormitories, dining rooms, bathing, parades, etc.) and objects (crockery, weapons and other work items). Furthermore, the military has permanent contact with the world outside the barracks through its members who live with their families and other people who, for various reasons, may enter the barracks.

This movement of people in and out of the barracks, the frequent sharing of spaces and work material, knowing that the man is considered the main vehicle for the transmission of SARS-CoV-2 and, taking as an example the phenomenon that occurred in the camp of the oil company TOTAL, in Afunge, Cabo Delgado, where the virus spread very quickly among the workers, it can be considered that there is an imminent risk of propagation also accelerated among the militaries.

However, since COVID-19 is an emerging disease, several studies are being carried out in order to analyze, understand and educate people's behavior in relation to this new pandemic. Regarding Mozambique, studied the knowledge, attitudes and practices of public servants in Mozambique in relation to the prevention of COVID-19" and found that the majority showed a predisposition to behaviors conducive to prevention strategies and less than half were not able to put into practice the knowledge they claim to have in relation to these measures [10].

The military, being a very important and essential social stratum for development, especially at this moment of armed conflict in which the country finds itself, deserve great attention and is necessary to implement massive education campaigns, to increase the proportion of knowledge about COVID-19 in order to avoid an eventual outbreak within them, which would make them fragile [11]. Hence, it is necessary to know their level of preparation in terms of knowledge and their daily practices in relation to care to prevent and combat this pandemic. However, no study that about the situation of COVID-19 pandemic in the Mozambican Armed Defense Forces was found.

It is in this sense, thinking about the adoption of strategies that can help to minimize the risk of infection and/or spread of COVID-19 in the militaries, the present research was developed, with the objective of analyzing the knowledge and practices of the military in relation to the prevention and combat of COVID-19.

Methodology

An exploratory study of a descriptive nature, with a quantitative approach was carried out at Mozambican Army Command. The sample was of 162 subjects of both sexes, among officers, sergeants and enlisted men, intentionally selected from the universe of military personnel who perform their duties in the Army Command.

All participants was informed about the research objectives, as well as about the benefits and security regarding confidentiality and guarantee of anonymity. All participants consented in a written declaration to the use of the information provided by them as a set for the production of scientific articles on the subject.

For data collection, the subjects was submitted to a questionnaire consisting of seventeen multi-choice closed questions, consisted of two parts: Socio-demographic and knowledge and practices. Socio-demographic information included Age, sex, rank, education and residency the seventeen questions: 6 regarding the knowledge and 11 regarding the practices in relation to preventing and combating COVID-19. The questionnaire was designed based on the objectives of this research and also adapted from other models and studies Manjate, J. L. S. et al. [10]. It was previously tested, in a pilot study with a sample of 10 subjects who were recruited among the military belonging to the Army Command.

The protocol of the present research was approved by the National Bioethics Committee for Health of the Ministry of Health under reference number 490/CNBS/2020.
For data analysis, the answers obtained through the questionnaire was exported to the Excel database, after which the exploratory analysis was carried out, on the basis of which those who filled out the questionnaire incorrectly were excluded.

Then, descriptive statistics were performed, namely the calculation of frequencies and percentages related to the answers about knowledge and practices regarding the prevention and combat of COVID-19 by the military, which are included in the results that are presented below.

Results and Discussion

A total of 162 military were submitted to the questionnaire, 72.84% men and 27.16% women, and of these, 29.01% soldiers, 35.19% sergeants and 35.80% officers.

The description of basic knowledge about COVID-19 is distributed in table 1, where it can be seen that, when asked what the transmitting agent of COVID-19 was, 89.5% of the military responded that it was the new coronavirus, while 8.6% said who did not know and 1.9% answered that it was the mosquito.

Asked about the main symptoms of the disease, 96.3% answered correctly that they was high fevers, headaches, flu, cough, sore throat, respiratory failure, pneumonia and kidney failure, 2.5% said was stomach pains and 1.2% said that didn't know the symptoms.

Regarding the population at greater risk of developing severe symptoms of COVID-19, 83.3% of the participants had no doubts in stating that was elderly and people, with chronic diseases and immunocompromised, 8.1% responded that were young people, children and athletes and the remaining 8.6% said that did not know the population at greatest risk.

When asked about the actions that should be taken in case of suspicion of infection by COVID-19, 54.9% of the subjects said that they should go immediately to a health unit, 40.7% said that the most recommended thing is to call the emergency for COVID-19, 1.9% said that should take an anti-flu and 2.5% didn't know what to do in this situation.

Regarding the prevention of COVID-19, 98.1% of the participants assured that physical distancing, constant hand hygiene with soap or gray water, disinfection with alcohol-gel, social isolation, the use of masks and avoiding clusters were the effective ways and recommended and 1.9% said they did not know the prevention methods.

Asked if there was any risk of infection and/or spread of COVID-19 in the barracks, 87.7% of those surveyed responded positively, 10.5% said they did not feel any risk of infection within the barracks, while 1.9% said they had no idea of the existence of the risk or not.

Table 1: Regarding the answers on basic knowledge about COVID-19.

Knowledge about COVID-19		
	Number of responses (%)	
COVID-19 is a disease caused by		
Novo coronavirus	145	(89.5%)
Mosquito	3	(1.9%)
I don't know	14	(8.6%)
The symptoms of COVID-19 are		
High fevers, headaches, flu, cough, sore throat, respiratory failure, pneumonia, heart failure;	156	(96.6%)
Stomach pain	4	(2.5%)
I don't know	2	(1.2%(
Which population is most at risk of developing severe symptoms of COVID-19?		
Idosos, doentes crónicos, funcionários de Saúde	135	(83.3%)
Children, youth, and athletes	13	(8.1%)
I don't know	14	(8.6%)
If you suspect that you are infected with COVID-19, what should you do?		
Go immediately to a health unit	89	54.9%
Immediately call the hotline for COVID-19	66	(40.7%)
Take a flu medication	3	(1.9%)
I don't know	4	(2.5%)
How can we prevent ourselves from COVID-19?		
Distance, constant hand hygiene with water, soap or ash, disinfection with alcohol-gel, avoid clusters, stay in quarantine, social isolation, wear a mask whenever you leave the house.	159	(89.1%)
I don't know yet	3	(1.9%)
Do you think there is any risk of infection and spread of COVID-19 in the barracks?		
Yes	142	(87.7%)
No	17	(10.5%)
I have no idea	3	(1.9%)

Observing the responses regarding basic knowledge about COVID-19, 89.5% for the transmitting agent, 96.3% for the symptoms, 83.3% for the population at greater risk and 98.1%, forms of prevention, showed to have knowledge in line with the information given by health entities.

These results coincide with the findings by Manjate, J. L. S. et al., in their study on "knowledge, attitudes and practices of public servants in Mozambique in relation to the prevention of COVID-19" in which they found that most participants had basic knowledge about the disease, where 93.66% of their informants knew the causative agent of COVID-19, 98.42% answered correctly regarding the main symptoms, 88.33% knew the population group at greater risk for the disease and 84.96% gave a satisfactory answer regarding the forms of prevention against the disease. Also in a study by Rugarabamu, S. et al. with the population of Tanzania, found that a high number of participants (84.4%) had a good knowledge about COVID-19 [11,12].

Similar results were also found in the study by Al-Hanawi, M. K. et al. carried out in Saudi Arabia where most participants had accurate knowledge about COVID-19, reaching an average of 81.64% of respondents [13]. In another study on knowledge, attitudes and practices in relation to COVID-19, Asraf, H. et al. found knowledge among the people of Nepal satisfactory. Having found a percentage of 98.7% in men and 98.8% in women of correct answers[14].

Similarly in another study by Zhong B. et al. of Chinese residents during the period of rapid increase in the COVID-19 outbreak in a rapid cross-sectional online survey, 90% answered correctly regarding their knowledge of the disease [15].

This can show that in almost all the world and in different social classes, information about the disease was well disseminated by the health authorities, which made the populations have high levels of knowledge at all levels.

In the case of the present study should be noted that a good part of the results regard to knowledge about COVID-19, can be attributed to the efforts of the Army Command, through its Health Department, in holding lectures on the subject and posting informative pamphlets in military access areas.

Notwithstanding, health authorities recommend the use of the hotline (telephone call) in case of suspected infection by COVID-19, the present survey showed that the majority of respondents (54.9%) suggested that going to the medical center would be the way to go their first option, being antagonistic to the results found by Manjate, J. L. S. et al. [10], where 65.87% of respondents answered that the first measure to take would be to call the green line. The numbers referring to the present study may be due to the fact that the military has a health center in the workplace, hence they feel easier to access it.

Regarding the existence of the risk of contracting COVID-19, in the barracks, the results of this research (87.7%) are in agreement with the results of Manjate, J. L. S. et al. [10] in which most participants (80.95%) assumed that there is a possibility of contracting the disease in their communities.

Table 2 presents the results regarding the daily practices of the military, in relation to COVID-19. It can be observed that in terms of transport, the majority, 61.1% said that they used public transport daily as the main way to travel from home to work and vice versa, while 7.3% use personal transport, 3.7% commute usually on foot and 17.9% reported living in the barracks.

When asked about the number of times they washed their hands a day, 83.3% answered that they did it more than five times; 10.5% between three and five times, while 1.9% said they did not worry about washing or using alcohol in their hands and 0.6% only once a day.

Regarding the use of a protective mask, 40.1% of the sample stated that they used it throughout the day, 59.3% only in crowded places and one subject corresponding to 0.6% said that they did not use the mask because they did not have it.

Asked if they disinfected faucets before using them, 53.1% stated that they disinfect the faucets first and only then use them. However, 46.9% said they used the faucets without first disinfecting.

Regarding compliance with the distance at mealtimes, 44.4% reported that they complied with the recommendations of at least 1.5 meters away from their partners, 37% responded that they did not, because there were no conditions for them to do so, while 18.1% said they neglected to comply with the recommendations.

Regarding the distance in dormitories/barracks, it should be noted that this question was addressed only to military residing in the barracks, where 70.5% stated that they strictly complied with the recommendations of the health authorities, while 29.5% assumed that they sometimes stayed in the beds of the colleagues playing board games or cards, acts contrary to the recommendations issued by Ministry of Health, in the current times.

When asked about the fulfillment of distancing in free or leisure time, 69.8% of the subjects guaranteed that they kept talking, always respecting the recommended distance; 29.6% said that at the moment they did not pay much attention to respecting the recommendations for distancing and 0.6% answered that they stayed playing cards, checkers, etc.

And when asked about compliance with the distance during daily military parades, 49.4% stated that it was always enforced; 40.1% answered that it was complied with, however, sometimes it was not and 10.5% answered that the recommended distance was never respected.

With regard to COVID-19 prevention practices in offices, such as disinfection of door handles, office furniture, keyboards and computer mice, and distancing between the military, 36.4% responded that these measures were always complied with., 48.1% said that they were complied with sometimes and 15.4% reported that they were never complied with.

When asked if the strategies adopted by the command as ways of preventing and mitigating COVID-19 were sufficient, 34% responded positively, while 64.8% said they were not enough and 1.2% preferred not to respond.

Table 2: Regarding the daily practices of the military in relation to COVID-19.

Regarding Practices		
	Number of responses (%)	
What type of transport do you use to go to work and back home?		
Public/Semi-collective transport	99	(61.1%)
My own transport	28	(17.3%)

I always walk	6	(3.7%)
Not applicable as I live in the barracks	29	(17.9%)
During the day, how often do you wash or disinfect your hands?		
Once	1	(0.6%)
Between one and three times	6	(3.7%)
Between three and five times	17	(10.5%)
more than five times	135	(83.3%)
I don't care about hand hygiene	3	(1.9%)
You use the orinasal mask...		
All day long	65	(40.1%)
Only in clusters (parades, transport, market, etc.)	96	(59.3%)
I don't have a mask	1	(0.6%)
In the bathhouses		
I disinfect the faucets before use	86	(53.1%)
I use faucets without disinfecting	76	(46.9%)
In the cafeteria		
I respect the distance of 1.5 meters from my colleagues	72	(44.4%)
There are no conditions to respect the recommended distance	60	(37%)
There are conditions to comply with distancing, however many of us ignore the recommendations	30	(18.5%)
In the dormitories		
I comply with the distance and I just stay in my bed	74	(70.5%)
Sometimes I go to other colleagues' beds to talk or play cards or checkers	31	(29.5%)
On free moments		
We talk, respecting the distance of 1.5 meters	113	(69.8%)
We talk, but we don't remember to respect the distance of 1.5 meters	48	(29.65%)
We play cards, checkers, football, and other sports without respecting the recommendations of distancing.	1	(0.6%)
How many military parades have been made on average per day?		
Between one and three parades	135	(83.3%)
Between three and five parades	16	(9.9%)
More than five parades	11	(10.5%)
In military parades, is the distance of 1.5 meters respected?		
Always	80	(49.4%)
Sometimes	65	(40.1%)
Never	17	(10.5%)
Always	59	(36.4%)
Sometimes	78	(48.1%)
Never	25	(15.4%)
Do you think the strategies taken by the command are sufficient for the prevention of COVID-19?		
Yes	55	(34%)
No	105	(64.8%)
I prefer not to answer	2	(1.2%)
In the offices, the prevention of COVID-19, such as disinfection of doorknobs, furniture, keyboards and mice of computers, distancing, use of masks, etc., are fulfilled?		

These results show a discrepancy between the subjects' knowledge and what they say in some of their daily practices. It is possible to notice, for example, with regard mainly to prevention measures, that above 98% responded positively, but the same does not go according to their actions, in which in the use of the nasal-oral mask about 59.3% a use only when in clusters, ignoring the recommendations of the health authorities on the use of the mask whenever we leave the house. And, with regard to compliance with distancing, more than 25% reported not complying with the recommendations.

Similar results were found by Manjate, J. L. S. et al.stating the authors that this phenomenon is due to the widespread devaluation given to this pandemic, at least from a practical point of view. Manjate, J. L. S. et al. also state in their study that a considerable fraction of the participants lack safety practices, such as not going to crowded places, wearing masks, washing their hands with the WHO technique and strictly following the lockdown [10].

In contrast to the present findings, in the study of Al-Hanawi, M. K. et al.with the Saudi population, showed that over 92% of the participants adopted good and safe practices. And also from the study of Asraf, H. et al. where almost all avoided crowded places (96.4%) and always used masks when leaving home (98.0%) [13,14].

This difference in results in relation to daily practices may be due to the fact that underdeveloped countries, such as Mozambique, have few resources to provide educational and dissemination materials to broaden the understanding of the disease and influence in behavior change.

Conclusions

The main objective of this study was to analyze the knowledge and practices of the military in relation to the prevention and combat of COVID-19. In the analysis of the answers provided by the respondents, it can be concluded that the majority of the military presented a high level of knowledge about COVID-19. A little over half tend to have practices conducive to preventing the contamination and/or spread of COVID-19 infection.

However, there are still challenges in preventive health education aimed at this population segment, in particular, especially with regard to daily practices, since a considerable number demonstrates to have deviant practices in relation to the prevention measures recommended by health entities. Mainly because the lack of observance of these measures contributes to a possible risk of contamination and propagation of the disease, taking into account the “modus vivendi” of the military that does not allow, in most cases, to adapt all the prevention measures issued and an outbreak in the within the armed forces can also jeopardize the security of the country.

However, there are still challenges in preventive health education aimed at this particular population segment, especially with regard to daily practices, since a considerable number of participants demonstrate deviant practices in relation to the prevention measures recommended by health entities. Mainly because the lack of observance of these measures contributes to a possible risk of contamination and spread of the disease, taking into account the "modus vivendi" of the military that does not allow, in most cases, to adapt all the prevention measures issued. And an outbreak within the armed forces can also jeopardize the security of the country.

Ethics approval and consent to participate

The protocol of the present research was approved by the National Bioethics Committee for Health of the Ministry of Health under reference number 490/CNBS/2020.

Consent for publication

All human research procedures were followed in accordance with the ethical standards of the national committee responsible for human experimentation, and with the Helsinki Declaration of 1975, as revised in 2013. All participant signed informed consent.

Availability of data and materials

All data generated or analyzed during this study are included in this published article. Mozambique Army; Department of Health.

Competing interests

The authors declare no conflict of interest, financial or otherwise.

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Non

Authors' contributions - provide individual author contribution

NATC were primarily responsible for conceptualizing the study. NATC and LBMM were responsible for study implementation. NATC led the data analysis with support from LBMM. NATC prepared the first draft of the manuscript with the support from LBMM. All authors reviewed and approved the final version of the manuscript.

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