KNOWLEDGE, ATTITUDE AND PRACTICES TO COVID-19 IN PERI-URBAN COMMUNITY OF BAMAKO, MALI

Samba DIARRA
samba.diarra@icermali.org

Djouroukoro DIALLO
djouroukoro.diallo@unibe.ch

Cheick Oumar DOUMBIA
cheickoumar.doumbia@icermali.org

Founeke DEMBELE
founeke.dembele@icermali.org

Karine G Fouth TCHOS
karine.fouthtchos@nih.gov

Seydou DOUMBIA
sdoumbi@icermali.org

University Clinical Research Center (UCRC),
University of Sciences, Techniques and Technologies of Bamako

NIAID, Division of Clinical Research, CCRB

Center for the Study of Language and Society (CSLS), Universität Bern, Suisse

ABSTRACT

Introduction

Since the detection of COVID-19 in March, 2020 in Mali, the capital city of Bamako remains the epicenter and has recorded four waves of SARSCov-19 infection. Unawareness and misinformation may contribute to the noncompliance of the communities to the country recommended preventive measures.

Objective

The objective of this study is to assess knowledge, attitudes, and practices to COVID-19 in peri-urban neighborhoods of Bamako, where the highest number cases in the country have been recorded.

Methodology

This cross-sectional study was conducted two months after the first wave of COVID-19 epidemic in August 2020. Data were collected with a semi-structured questionnaire from 185 adult respondents selected using a systematic sampling technique. Frequency analysis and chi-square test were used, R statistical software was used for data analysis in this study.

Results

Only 17,3% of respondents had a good knowledge of COVID-19 preventive measures. Among them, 91,89% knew that washing hands with soap could prevent the disease, but nearly 80,0% did not know that avoiding to touch the mouth, nose, and eyes without washing hands was a preventive measure. Only 43,24% of respondents knew that coughing into the hollow of the elbow could reduce the risk of contamination from a third party. Also, age, occupation, level of education, source of information, and having a member of the community affected by COVID-19 were associated with knowledge level of preventive measures.

Keywords: COVID-19, Clinical trial, Prevention, Knowledge Level

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an acute respiratory disease caused by the novel coronavirus (nCoV) 2019 that mainly affects the lungs [1]. The virus is transmitted through droplets, contaminated objects, and close contacts. The source and progression of the disease of this new virus has not yet been fully understood and requires preventive measures until effective treatment and vaccine are available [1]. The disease first broke out in the city of Wuhan, Hubei Province, China [2]. It spread rapidly, leading to an epidemic throughout the country, followed by a pandemic with an increasing number of cases in several countries around the world [1,3]. The World Health Organization (WHO) announced a public health emergency of international concern (PHEIC) at the end of January 2020 and declared it a pandemic in March 2020 [4].

This pandemic has caused more than 6 million of deaths around the world [5]. WHO has recommended preventives measures against COVID-19 focused on (i) social distancing (maintaining a physical distance of at least one meter), (ii) washing hands with soap for at least 20 seconds or using hand sanitizers, (iii) avoid touching the nose, mouth, and eyes with dirty hands, (iv) staying home, (v) avoiding crowds, and so on [5,6].

Mali recorded its first two cases of COVID-19 on March 25, 2020, and the President decreed a state of emergency on March 26. Like many other countries in the subregion, Mali stepped forward and decreed a lockdown throughout the country to control the spread of the disease. This included closure of schools, universities, socio-cultural ceremonies and entertainment gatherings. All major media such as the national radio (ORTM) were mobilized in a communication campaign to raise general awareness on the disease prevention. The country has experienced 3 waves of COVID-19 infection and the fourth wave being in course. As of January 10, 2022, and a total of 25,735 were confirmed and 675 deaths have been recorded surge reported from many parts of the world [7].

Various investigations have described the challenges in complying with government preventive guidelines (Mohamed Ali Ag Ahmed, 2020, [8], [9], Nwagbara et al. PLoS One. 2021 Apr 19;16(4). These include ignorance and the spread of misinformation on COVID-19 in the communities. This study assesses people's knowledge and perception of the community on the disease and various measures undertaken to control the SARS-CoV-2 infection in Mali, particularly in peri-urban setting of the city of Bamako, the epicenter of the disease.

1. METHODS

1.1. Design and study population

We conducted a cross-sectional survey among the participants of the Partnership for Research on Ebola Vaccination study (PREVAC) in Mali (Badio M et al., Trials. 2021 Jan 23;22(1):86). The study involved 185 adult respondents randomly selected using a systematic sampling technique from PREVAC study cohort recruited from three peri-urban settings including Koulouba, Sogonafing and Point G. Data were collected in August 2020 through a semi-structured interview by trained Community Health Care Workers (CHCW) respecting the recommended preventive measures such as physical distancing and use of facial masks to avoid risk of contamination with SARS-CoV-2. The following types of information were collected: (i) socio-demographic characteristics (sex, age, level of literacy, etc.), and (ii) knowledge of COVID-19 disease including symptoms, mode of transmission, recommended preventive measures (physical distancing, wearing masks, hand washing after touching contaminated objects, avoid spread while coughing, sneezing, and awareness of the ministry of health emergency helpline for information on COVID-19. Respondents were divided into three groups based on their knowledge levels: (i) High , (ii) moderate , and (iii) low level of awareness on COVID-19. Socio-demographic factors such as having a member of the community affected by COVID-19 and the sources of information were also tested for association with the level of knowledge among respondents. Statistical analysis describes the frequency distribution of participants' responses to questions related to COVID-19 preventive measures, and the association between the level of knowledge

of COVID-19 disease and socio-demographic factors using chi-square test. The data were analyzed with R statistical software.

1.2. Results

1.2.1. Socio-demographic characteristics of the study participants:

Among the 185 study participants (Table 1), 59.0% were women and more than half (56.8%) were below 40 years of age while only 10.8% were 59 years and older (See Table 1). Nearly half of the respondents were married (48.65%) and half was single (38.4%) or widowed (11.4%). More than one third has high school or university level of education (36.7%) while 22.1% were illiterate. Nearly half were unemployed (48.7%), 43.2% were unformal employees and only 8.11% had a formal job. With regard to the ethnicity, more than half were Bambara (55,1%) followed by the Mandingo (16,2%).

Characteristics	Frequency N=185	Proportion (%)
Age (age)		
18-28	68	36.76
29-38	37	20
39-48	35	18.92
49-58	25	13.51
59 and over	20	10.81
Sex		
Female	109	58.91
Male	76	41.08
Marital Status		
Single	71	38.38
Married	90	48.65
Divorced	3	1.62
Widowed	21	11.35
Level of education		
University	12	6.49
Secondary	56	30.27
Primary	66	35.68
Koranic School	10	5.41
Illiterate	41	22.16
Profession		
Unemployed	90	48.65
Formal Work	15	8.11
Informal Work	80	43.24
Ethnic group		
Bambara	102	55.14
Madingo	30	16.22
Fulani	13	7.03
Sarakole	11	5.95
Other	29	15.68

Characteristics	Total (%)	Level of knowledge			Fisher test	Chi2 Test
		Poor	Moderate	High		
		Frequency (%)	Frequency (%)	Frequency (%)	p-value	p-value
Age (age)					0.006*	
18-28	68(100)	24(35.29)	39(57.35)	5(7.35)		
29-38	37(100)	5(13.51)	21(56.76)	11(29.73)		
39-48	35(100)	7(20.00)	20(57.14)	8(22.86)		
49-58	25(100)	4(16.00)	14(56.00)	7(28.00)		
59 and over	20(100)	2(10.00)	17(85.00)	1(5.00)		
Ethnic group					0.417	
Bambara	102(100)	25(24.51)	62(60.78)	15(14.71)		
Malinke	30(100)	4(13.33)	20(66.67)	6(20.00)		
Fulani	13(100)	4(30.77)	7(53.85)	2(15.38)		
Sarakole	11(100)	2(18.18)	4(36.36)	5(45.45)		
Other	29(100)	7(24.14)	18(62.07)	4(13.79)		
Marital status					0.113	
Single	71(100)	17(23.94)	45(63.38)	9(12.68)		
Married	90(100)	22(24.44)	46(51.11)	22(24.44)		
Divorced	3(100)	0(0.00)	3(100)	0(0.00)		
Widowed	21(100)	3(14.29)	17(80.95)	1(4.76)		
Sex						0.35
Female	109(100)	28(25.69)	65(59.63)	16(14.68)		
Male	76(100)	14(18.42)	46(60.53)	16(21.05)		
Profession					0.012*	
None	90(100)	19(21.11)	53(58.89)	18(20.00)		
Formal work	15(100)	0(0.00)	9(60.00)	6(40.00)		
Informal work	80(100)	23(28.75)	49(61.25)	8(10.00)		
Education					0.00*	
University	12(100)	1(8.33)	5(41.67)	6(50.00)		
Secondary	56(100)	19(33.93)	28(50.00)	9(16.07)		
Primary	66(100)	8(12.12)	43(65.15)	15(22.73)		
Koranic School	10(100)	0(0.00)	8(80.00)	2(20.00)		
None	41(100)	14(34.15)	27(65.85)	0(0.00)		
Information channel					0.001*	
TV	116(100)	18(15.52)	69(59.48)	29(25.00)		
Radio	49(100)	18(36.73)	30(61.22)	1(2.04)		
Health Care Workers	12(100)	4(33.33)	6(50.00)	2(16.67)		
Social Media	7(100)	1(14.29)	6(85.71)	0(0.00)		
Concerned					0.091	
Not	14(100)	6(42.86)	5(35.71)	3(21.43)		
Yes	171(100)	36(21.05)	106(61.99)	29(16.96)		
Member of the Community affected						0.015*
Not	130(100)	29(22.31)	85(65.38)	16(12.31)		
Yes	55(100)	13(23.64)	26(47.27)	16(29.09)		

Table 1: Socio-demographic characteristics

Participants by knowledge of COVID19 preventive measures, symptoms
*p-value < 0.05, are factor associated with the level of knowledge

Table 2: factors associated with the level of knowledge

With regard to key questions related to knowledge of measures recommended for COVID-19 prevention measures, wearing a mask was acknowledged by most of people (97.3), hand washing (87.6%), maintaining social distancing by 46.0%. About 20.0% of the participants were aware of avoiding touching the face (mouth, noses, and eyes) without washing the hands as preventive measure and only 2.1% acknowledged the recommendation of using the inside of the elbow or covering the mouth and nose with a tissue when coughing or sneezing.

The main symptoms of COVID-19 known to the participants are cough (25.0%=46/185??), fever (24%=44 / 185), sore throat (22.2%=40/185), and headache (22.2%=40 / 185). Other symptoms such as vomiting, diarrhea, and fatigue were rarely acknowledged by study participants (figure 1).
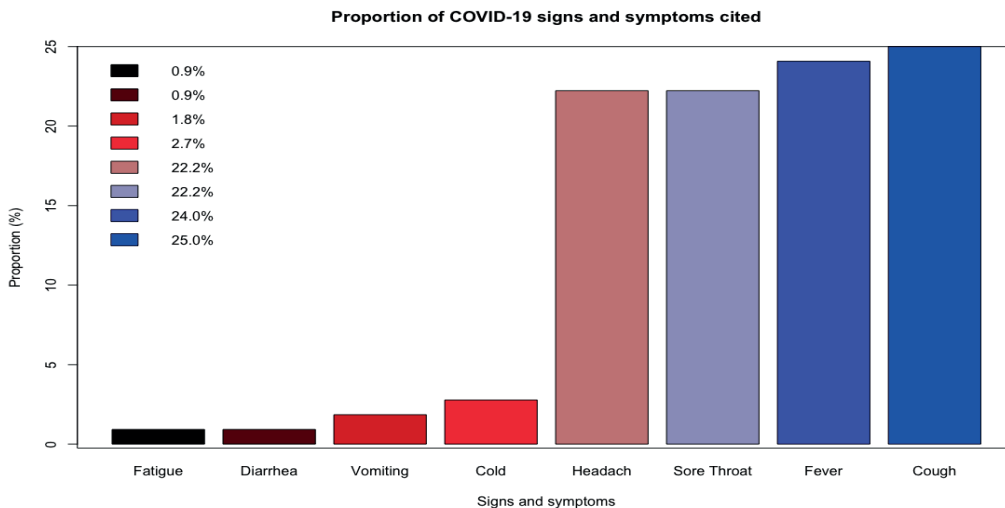

Figure 1: *Sign of COVID-19 data for participants*

With regard to the spread of the disease in the country, nearly one third of the participants (29.7%) were aware of a community member affected by COVID-19. Among the various mitigation strategies taken to slow down the rapid spread of COVID-19, only 17.3 % of the study participants have good knowledge of those measures while 78.7% of the respondents reported that they were aware of the emergency helpline for COVID-19 set up by the ministry of health to inform the population on COVID-19 symptoms, preventive measures. The main sources of information on COVID-19 include TV (63.04%) and the Radio (26.63%), see (figure 2). Very few reported health workers (6.5%) and social media (3.8%).
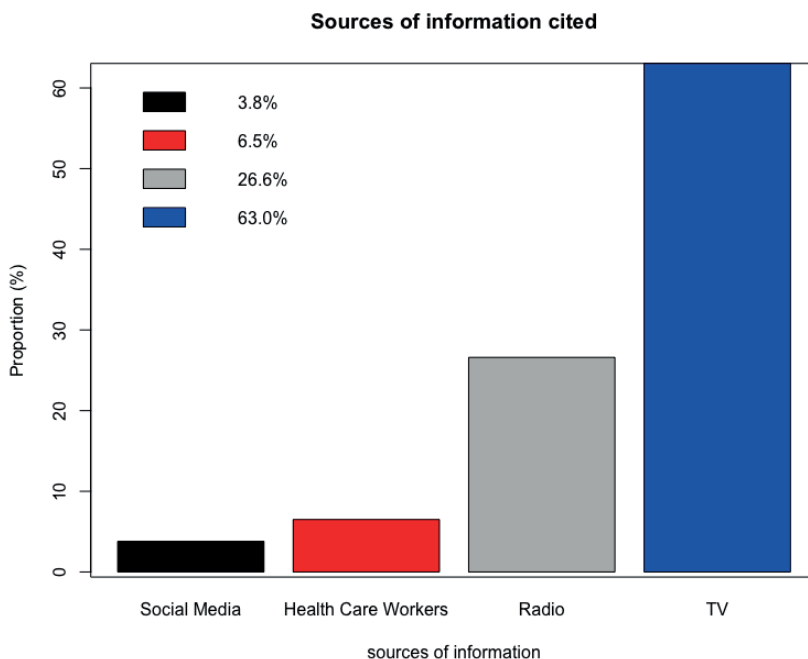

Figure 2: Source of COVID19 information cited by participants

Assessing for association between socio-demographic factors and knowledge of preventive measures (Figure 3), we found that the level of knowledge was significantly associated with age (young participants <30 years having the highest proportion of poor knowledge of Covid-19), profession (unemployed and informal employees in have higher rate of poor knowledge compared with formal employees) , level of education (with higher proportion of high level of knowledge among participants with university education) , information channel (participants whom source of information is TV have highest proportion of level of knowledge), and having a community member affected by COVID-19 ($p<0.001$).
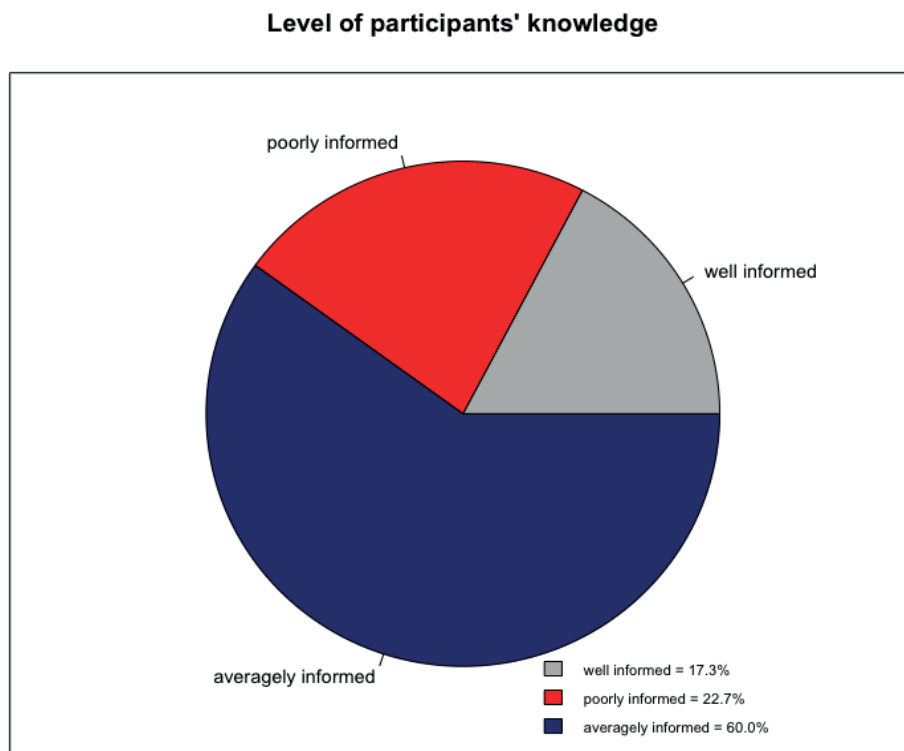

Figure 3: Level of participants' knowledge of preventive measures

DISCUSSION

This survey was conducted six months after the outbreak of the COVID-19 pandemic in Mali, particularly in peri-urban communities of Bamako. Faced with the lack of treatment and vaccine proven to be effective in treating or preventing COVID19[11], political authorities have developed information and awareness messages on preventive methods for populations. Several measures have been recommended ranging from hand washing and environmental hygiene, to wearing masks, physical distancing and a ban on gathering more than 50 people. Our study revealed a good mastery (97.3%) for the practice of wearing a mask to prevent the disease. This result is higher than that of Magawata, 2020 in Niger, which found that 92% of young people know preventive methods. TV and radio were the main sources of information on COVID-19 (89.67%) in our study. These results also are higher than those found (43%) by Magawata, 2020 in Niger. On the other hand, the latter found that social networks represented 20% of the sources of information used by young people in peri-urban districts of the city of Niamey against 3.8% in Bamako. In our study, only 20.0% of respondents knew that avoiding to touch the mouth, nose without washing your hands was a preventive measure against COVID-19. This result is lower than the one found by Essouga, 2020, which was 39% in Cameroon [12]. It emerged from our study that 78. 69% of our respondents knew the COVID-19 toll-free number, and it should be remembered that this call number is free of charge.

CONCLUSION

Preventive measures are important and essential in the fight against COVID-19. One thing is to have knowledge about the preventive measures, and another is to respect them. It was found that compliance is problematic in a precarious socioeconomic context as in Mali. A predominantly uneducated community working in the informal sector has difficulties complying with COVID-19 prevention measures. A larger part of the economy and income revolves around markets and local services. In spite of the social mitigation strategies deployed by governments, the lack of a policy of compliance with these measures puts a community at greater risk than does COVID-19.

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