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**TURPANJIAN COLLEGE of
HEALTH SCIENCES**



Knowledge, Attitude, and Practices on COVID-19 and Other Infectious Diseases in Armenia

Brief Report

November 2021

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American University of Armenia

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Project Description

The Support to Control COVID-19 and Other Infectious Disease Outbreaks Activity strengthens the national capacity to control COVID-19 and other communicable disease outbreaks and emergencies of potential public health concern, advancing the Public Health Emergency Preparedness and Response strategy in Armenia. The activity is funded by the United States Agency for International Development (USAID) and is implemented by the American University of Armenia Fund, in collaboration with the Ministry of Health (MoH) of Armenia.

The project focuses on the following spheres:

1. To strengthen the capacity of the Government of Armenia to formulate and implement public policies and services to prevent and respond to emergencies of potential public health concerns.
2. To advance the health sector capacity for the surveillance, detection, assessment, early notification, and response to disease outbreaks and other emergencies of potential public health concern.
3. *To improve literacy on COVID-19 and other communicable diseases among the Armenian population.*

Selected findings of the “Knowledge, Attitude, and Practices on COVID-19 and Other Infectious Diseases in Armenia and Prevalence of COVID-19 Antibodies, Chronic Hepatitis B and C Virus Infections and Associated Risk” survey

Background

The objective of this document is to present the preliminary findings of the “Knowledge, Attitude, and Practices on COVID-19 and Other Infectious Diseases in Armenia and Prevalence of COVID-19 Antibodies, Chronic Hepatitis B and C Virus Infections and Associated Risk” study. The study was conducted in the scope of the USAID-funded “Support to control COVID-19 and other infectious disease outbreaks” project in May-September 2021 by the Turpanjian School of Public Health of the American University of Armenia. The two objectives of the study were to estimate the seroprevalence of antibodies against SARS-CoV-2 and assess the population’s knowledge, attitude, and practices (KAP) regarding infectious disease transmission, manifestation, and treatment among adults in Armenia. The study had two main components: laboratory testing and phone-call survey.

The preliminary findings reported here are limited to selected questions of interest explored by the KAP survey, including vaccination against COVID-19, COVID-19-related preventive behaviors (mask-wearing, hand washing, and maintaining social distance), trust in COVID-19-related information obtained from different sources, and conspiracy beliefs.

Brief methodology

The target population included the adult population (≥ 18 years old) living in Armenia, regardless of their citizenship or country of origin. The research team applied a cross-sectional, population-based, stratified two-stage cluster sampling methodology to select the study participants. The survey was stratified by 11 areas: Yerevan, the capital city, and 10 marzes. Systematic random sampling was performed to select 1/3 of the PHCs in each stratum. The random selection of PHC facilities within the regions was adjusted for the population size served by the PHC facility. In stage 2, random selection of the study participants was performed with the help of the ARMED e-health national team. The ARMED representative provided the list of the sampled population to the PHC facility representatives who contacted and recruited the participants. As soon as the recruited participant reached the PHC facility for blood sampling, the research team took the responsibility for the next steps of the data collection, including obtaining the written informed consent, providing brief pre-testing counselling, conducting blood sampling, completing the phone-survey and informing the participants about their test results. The phone survey was conducted by ten trained interviewers in from May 27 –September 14, 2021.

Selected results of the KAP phone survey

Overall, 3483 people from Yerevan and 10 marzes participated in the survey (Table 1). The response rate was 93.5%. The majority of the respondents were female (71.7%). The mean age of the respondents was 49.5.

In total, 11.6% (n=393) of the respondents in the sample received Covid-19 vaccine, of which about 50% received two vaccine doses. The national estimate of vaccination rate was 10.3% (weighted by age and sex). About half of the vaccinated respondents reported some side-effects due to vaccination. Those who did not receive Covid-19 vaccination were asked about their intention to take Covid-19 vaccine when it becomes available to them. About 53% of 2838 respondents said they were very likely or likely to get vaccinated.

When asked about the extent to which they agree or disagree that the vaccination should be mandatory for everyone who is able to have it, 8.1 % strongly agreed, 43.8% agreed, 39.1% disagreed and 9.0 % strongly disagreed with this statement.

Overall, 67.2% of respondents reported that they always washed their hands with soap and water for 20 minutes in the past 14 days; 24.0% were doing so usually, 5.5% sometimes, 1.9% rarely and 1.3% never.

Only 31% of respondents reported always wearing masks in the past 14 days. About 21% were wearing masks usually, 18.0% sometimes, and 14.9% rarely, while 15.4 never wore a mask in public places.

The respondents reported maintaining social distance of at least 1.5 meters in the past 14 days always (18.6%), usually (23.3%), sometimes (22.3%) and rarely (15.9%). Almost 20% of the respondents never maintained social distance in the past 14 days.

The study participants were asked to assess on a scale from 1 to 7 how much they trust information about COVID-19 from different sources, where 1 meant “very little trust “ and 7 meant “a great deal of trust”. The highest mean trust scores were recorded for health care providers (5.44), Ministry of Health (5.07), and World Health Organization (4.96). The mean trust score for the National Center for Disease Control and Prevention was 4.61, while for the COVID-19 Hotlines it was 4.53. Celebrities and social media influencers were the least trusted source of information on COVID-19 (2.99).

The respondents were asked about how much confidence they have (on a scale from 1 to 7) that the MOH can handle COVID-19 challenge well. The recorded mean score was 5.02. The mean scores for the hospitals (5.41) and polyclinics (5.11) were the highest. The confidence scores for the Center for Disease Control and Prevention (4.74), schools, universities and other educational institutions (4.64), the Government (4.58), and the police (4.18) were moderately low. The lowest mean confidence score was obtained for public transportation companies (3.04).

The respondents were asked to what extent they agree or disagree with the statements representing COVID-19 conspiracy theories. From 2803 respondents the majority strongly agreed (15.8%) or agreed (60.7%) that the COVID-19 virus is manmade, while the rest disagreed (20.4%) or strongly disagreed (3.0%) with this statement. More than 70% of the respondents agreed (60.2%) or strongly agreed (12.4%) with the statement that COVID-19 virus is produced by powerful organizations. About 70% of the respondents agreed (59.6%) or strongly agreed (11.0%) that the spread of the COVID-19 virus is a deliberate attempt to reduce the size of the global population. Almost half of the respondents agreed or strongly agreed (45.7% and 5.4%,

respectively) that the spread of the COVID-19 virus is a deliberate attempt by governments to gain political control.

Only 22.7% of 3399 participants reported that they have been diagnosed with COVID-19 by PCR test, of which 25% were hospitalized due to COVID-19. The national SARS-CoV-2 seroprevalence estimate was 66.4% (unweighted proportion was 68.8%).

Table 2 presents cross-tabulation of reported survey variables by age categories (18-64 years old vs 65 years old and above), education categories (less than 10 years to 12-13 years versus higher education and above) and gender (male vs female).

Table 1. Geographical distribution of survey respondents

Marz	N (%)
Yerevan	1246 (35.8)
Shirak	268 (7.7)
Armavir	310 (8.9)
Gegharkunik	274 (7.9)
Kotayk	287 (8.2)
Syunik	162 (4.7)
Aragatsotn	163 (4.7)
Ararat	304 (8.7)
Vayots dzor	63 (1.8)
Lori	253 (7.3)
Tavush	153 (4.4)

Table 2. Distribution of responses to selected survey questions by age, education, and gender

	Age			Education			Gender		
Variable	Total (n=3477)	Age 18-64 (n=2877)	Age 65+ (n=600)	Total (n=3464)	<10 years to 12-13 years (n=2111)	Higher education and above (n=1353)	Total (n=3483)	Males (n=984)	Females (n=2499)
	N (%) or M (SD)			N (%) or M (SD)			N (%) or M (SD)		
How often have you done the following in the past 14 days: Washed your hands with soap and water for about 20 seconds?									
<i>Always, Usually</i>	3143 (91.2)	2589 (90.7)	554 (93.9)	3131 (91.2)	1892 (90.7)	1239 (92.1)	3147 (91.2)	870 (89.8)	2277 (91.8)
<i>Sometimes, rarely, never</i>	303 (8.8)	267 (9.3)	36 (6.1)	301 (8.8)	195 (9.3)	106 (7.9)	303 (8.8)	99 (10.2)	204 (8.2)
How often have you done the following in the past 14 days: Wore a mask in public areas?									
<i>Always, Usually</i>	1777 (51.7)	1402 (49.2)	375 (64.1)	1775 (51.9)	1097 (52.8)	678 (50.4)	1780 (51.8)	468 (48.5)	1312 (53.0)
<i>Sometimes, rarely, never</i>	1658 (48.3)	1448 (50.8)	210 (35.9)	1646 (48.1)	980 (47.2)	666 (49.6)	1659 (48.2)	497 (51.5)	1162 (47.0)
How often have you done the following in the past 14 days: Maintained social distance of at least 1.5 meters?									
<i>Always, Usually</i>	1435 (41.9)	1140 (40.2)	295 (50.3)	1433 (42.0)	880 (42.4)	553 (41.5)	1438 (42.0)	410 (42.9)	1028 (41.6)
<i>Sometimes, rarely, never</i>	1988 (58.1)	1696 (59.8)	292 (49.7)	1976 (58.0)	1196 (57.6)	780 (58.5)	1989 (58.0)	546 (57.1)	1443 (58.4)
On a scale from 1 to 7, how much do you trust information about COVID-19 from the following sources? (where 1= Very little trust and 7= A great deal of trust)									
<i>Ministry of Health</i>	5.07 (1.94)	5.13 (1.90)	4.77 (2.11)	5.07 (1.94)	5.17 (1.95)	4.92 (1.92)	5.07 (1.94)	4.98 (1.98)	5.10 (1.92)
<i>National Center for Disease Control and Prevention</i>	4.61 (2.18)	4.69 (2.14)	4.13(2.35)	4.61 (2.18)	4.64 (2.22)	4.57 (2.11)	4.61 (2.18)	4.43 (2.21)	4.67 (2.16)

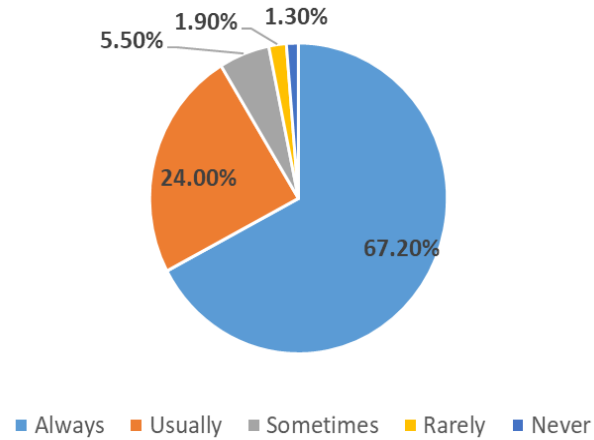
Variable	Age			Education			Gender		
	Total (n=3477)	Age 18-64 (n=2877)	Age 65+ (n=600)	Total (n=3464)	<10 years to 12-13 years (n=2111)	Higher education and above (n=1353)	Total (n=3483)	Males (n=984)	Females (n=2499)
	N (%) or M (SD)			N (%) or M (SD)			N (%) or M (SD)		
<i>Health care providers</i>	5.44 (1.68)	5.45 (1.65)	5.36 (1.84)	5.44 (1.69)	5.50 (1.72)	5.33 (1.62)	5.44 (1.68)	5.31 (1.77)	5.48 (1.65)
<i>Celebrities and social media influencers</i>	2.99 (2.07)	2.99 (2.04)	2.94 (2.20)	2.98 (2.07)	3.02 (2.14)	2.92 (1.96)	2.99 (2.07)	2.84 (2.03)	3.04 (2.08)
<i>World Health Organization (WHO)</i>	4.96 (2.04)	5.02 (2.01)	4.62 (2.18)	4.95 (2.05)	5.06 (2.04)	4.80 (2.04)	4.95 (2.04)	4.66 (2.11)	5.06 (2.01)
<i>COVID-19 Hotlines</i>	4.53 (2.27)	4.60 (2.25)	4.11 (2.39)	4.53 (2.27)	4.63 (2.28)	4.37 (2.26)	4.53 (2.27)	4.29 (2.30)	4.62 (2.26)
On a scale from 1 to 7, how much confidence do you have that the following can handle the COVID-19 challenge well?									
<i>Government</i>	4.58 (2.04)	4.57 (2.02)	4.63 (2.14)	4.58 (2.04)	4.81 (2.05)	4.24 (1.99)	4.58 (2.04)	4.64 (2.07)	4.56 (2.04)
<i>Ministry of Health</i>	5.02 (1.96)	5.05 (1.94)	4.85 (2.08)	5.02 (1.96)	5.24 (1.94)	4.70 (1.95)	5.02 (1.96)	4.93 (2.00)	5.05 (1.94)
<i>Hospitals</i>	5.41 (1.70)	5.43 (1.67)	5.40 (1.80)	5.42 (1.70)	5.54 (1.71)	5.23 (1.70)	5.41 (1.70)	5.32 (1.78)	5.45 (1.66)
<i>Polyclinics</i>	5.11 (1.81)	5.10 (1.80)	5.20 (1.85)	5.11 (1.82)	5.32 (1.81)	4.81 (1.78)	5.11 (1.82)	5.05 (1.84)	5.14 (1.81)
<i>Center for Disease Control and Prevention</i>	4.74 (2.09)	4.82 (2.05)	4.25 (2.28)	4.74 (2.09)	4.86 (2.15)	4.56 (2.00)	4.74 (2.09)	4.50 (2.14)	4.83 (2.07)
<i>Schools, universities and other educational institutions</i>	4.64 (1.90)	4.65 (1.89)	4.59 (1.95)	4.64 (1.90)	4.79 (1.97)	4.42 (1.78)	4.64 (1.90)	4.44 (1.92)	4.71 (1.89)
<i>Public transportation companies</i>	3.04 (1.97)	3.02 (1.98)	3.18 (1.95)	3.04 (1.97)	3.35 (2.09)	2.61 (1.71)	3.04 (1.97)	3.13 (2.06)	3.01 (1.94)
<i>Police</i>	4.18 (2.10)	4.19 (2.10)	4.10 (2.15)	4.18 (2.11)	4.48 (2.13)	3.74 (2.10)	4.18 (2.10)	4.17 (2.16)	4.18 (2.10)
Please indicate the extent to which you agree or disagree with the following statements:									

Variable	Age			Education			Gender		
	Total (n=3477)	Age 18-64 (n=2877)	Age 65+ (n=600)	Total (n=3464)	<10 years to 12-13 years (n=2111)	Higher education and above (n=1353)	Total (n=3483)	Males (n=984)	Females (n=2499)
	N (%) or M (SD)			N (%) or M (SD)			N (%) or M (SD)		
The virus is manmade.									
<i>Strongly agree</i>	443 (15.8)	376 (16.1)	67 (14.6)	440 (15.8)	251 (15.1)	189 (16.8)	444 (15.8)	149 (19.1)	295 (14.6)
<i>Agree</i>	1699 (60.7)	1431 (61.1)	268 (58.5)	1694 (60.7)	989 (59.5)	705 (62.6)	1702 (60.7)	455 (58.3)	1247 (61.7)
<i>Disagree</i>	572 (20.4)	462 (19.7)	110 (24.0)	570 (20.4)	369 (22.2)	201 (17.9)	572 (20.4)	149 (19.1)	423 (20.9)
<i>Strongly disagree</i>	85 (3.0)	72 (3.1)	13 (2.8)	85 (3.0)	54 (3.2)	31 (2.8)	85 (3.0)	28 (3.6)	57 (2.8)
The virus is produced by powerful organizations (e.g. government, military).									
<i>Strongly agree</i>	329 (12.4)	276 (12.4)	53 (12.2)	327 (12.3)	176 (11.1)	151 (14.1)	330 (12.4)	114 (15.3)	216 (11.3)
<i>Agree</i>	1601 (60.2)	1348 (60.6)	253 (58.0)	1596 (60.2)	948 (60.0)	648 (60.6)	1603 (60.2)	440 (59.1)	1163 (60.6)
<i>Disagree</i>	659 (24.8)	543 (24.4)	116 (26.6)	657 (24.8)	413 (26.2)	244 (22.8)	660 (24.8)	164 (22.0)	496 (25.8)
<i>Strongly disagree</i>	70 (2.6)	56 (2.5)	14 (3.2)	70 (2.6)	44 (2.8)	26 (2.4)	70 (2.6)	26 (3.5)	44 (2.3)
The spread of the virus is a deliberate attempt to reduce the size of the global population.									
<i>Strongly agree</i>	295 (11.0)	249 (11.1)	46 (10.4)	292 (10.9)	168 (10.5)	124 (11.5)	295 (11.0)	91 (12.3)	204 (10.5)
<i>Agree</i>	1602 (59.6)	1348 (60.0)	254 (57.6)	1601 (59.8)	981 (61.2)	620 (57.6)	1604 (59.6)	404 (54.5)	1200 (61.5)
<i>Disagree</i>	723 (26.9)	594 (26.4)	129 (29.3)	718 (26.8)	411 (25.6)	307 (28.5)	725 (26.9)	220 (29.7)	505 (25.9)
<i>Strongly disagree</i>	68 (2.5)	56 (2.5)	12 (2.7)	68 (2.5)	43 (2.7)	25 (2.3)	68 (2.5)	26 (3.5)	42 (2.2)
The spread of the virus is a deliberate attempt by governments to gain political control.									
<i>Strongly agree</i>	135 (5.4)	111 (5.3)	24 (6.1)	134 (5.4)	65 (4.4)	69 (6.8)	136 (5.5)	45 (6.6)	91 (5.0)
<i>Agree</i>	1136 (45.7)	964 (46.1)	172 (43.5)	1134 (45.7)	691 (47.3)	443 (43.6)	1138 (45.7)	309 (45.3)	829 (45.8)
<i>Disagree</i>	1093 (43.9)	911 (43.5)	182 (46.1)	1089 (43.9)	629 (43.0)	460 (45.2)	1094 (43.9)	292 (42.8)	802 (44.3)
<i>Strongly disagree</i>	123 (4.9)	106 (5.1)	17 (4.3)	122 (4.9)	77 (5.3)	45 (4.4)	123 (4.9)	36 (5.3)	87 (4.8)
The virus is most likely to have originated from									

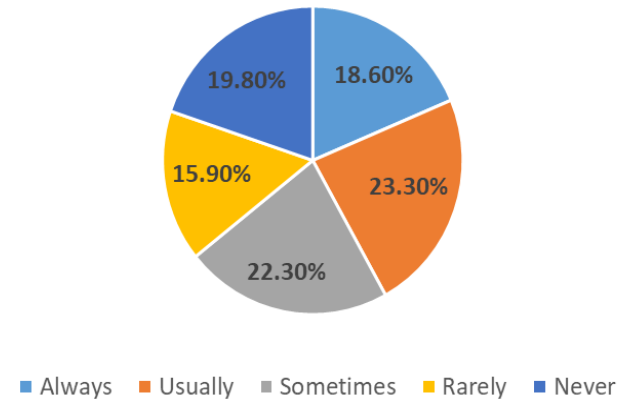
	Age			Education			Gender		
Variable	Total (n=3477)	Age 18-64 (n=2877)	Age 65+ (n=600)	Total (n=3464)	<10 years to 12-13 years (n=2111)	Higher education and above (n=1353)	Total (n=3483)	Males (n=984)	Females (n=2499)
	N (%) or M (SD)			N (%) or M (SD)			N (%) or M (SD)		
bats.									
<i>Strongly agree</i>	33 (1.3)	28 (1.3)	5 (1.2)	33 (1.3)	22 (1.5)	11 (1.1)	33 (1.3)	10 (1.5)	23 (1.3)
<i>Agree</i>	1105 (44.3)	891 (42.7)	214 (53.0)	1104 (44.5)	727 (48.7)	377 (38.1)	1107 (44.4)	271 (40.3)	836 (45.9)
<i>Disagree</i>	1260 (50.6)	1088 (52.1)	172 (42.6)	1252 (50.4)	693 (46.4)	559 (56.5)	1262 (50.6)	357 (53.0)	905 (49.6)
<i>Strongly disagree</i>	94 (3.8)	81 (3.9)	13 (3.2)	93 (3.7)	50 (3.4)	43 (4.3)	94 (3.8)	35 (5.2)	59 (3.2)
The virus is naturally occurring.									
<i>Strongly agree</i>	89 (3.2)	72 (3.1)	17 (3.8)	88 (3.2)	51 (3.1)	37 (3.3)	89 (3.2)	34 (4.4)	55 (2.7)
<i>Agree</i>	1026 (36.8)	833 (35.7)	193 (42.8)	1026 (37.0)	683 (41.2)	343 (30.7)	1029 (36.9)	275 (35.7)	754 (37.3)
<i>Disagree</i>	1437 (51.6)	1229 (52.7)	208 (46.1)	1429 (51.5)	799 (48.2)	630 (56.4)	1438 (51.6)	391 (50.8)	1047 (51.9)
<i>Strongly disagree</i>	233 (8.4)	200 (8.6)	33 (7.3)	232 (8.4)	124 (7.5)	108 (9.7)	233 (8.4)	70 (9.1)	163 (8.1)
Have you been vaccinated against COVID-19?									
<i>Yes</i>	393 (11.6)	333 (11.9)	60 (10.4)	393 (11.7)	210 (10.3)	183 (13.8)	393 (11.6)	108 (11.5)	285 (11.7)
<i>No</i>	2989 (88.4)	2470 (88.1)	519 (89.6)	2977 (88.3)	1837 (89.7)	1140 (86.2)	2993 (88.4)	833 (88.5)	2160 (88.3)
How many doses did you receive?									
<i>1 dose</i>	197 (50.1)	163 (48.9)	34 (56.7)	197 (50.1)	90 (42.9)	107 (58.5)	197 (50.1)	58 (53.7)	139 (48.8)
<i>2 doses</i>	196 (49.9)	170 (51.1)	26 (43.3)	196 (49.9)	120 (57.1)	76 (41.5)	196 (49.9)	50 (46.3)	146 (51.2)
Have you had any side effects?									
<i>Yes</i>	192 (49.1)	173 (52.3)	19 (31.7)	192 (49.1)	114 (54.5)	78 (42.9)	192 (49.1)	37 (34.9)	155 (54.4)
<i>No</i>	199 (50.9)	158 (47.7)	41 (68.3)	199 (50.9)	95 (45.5)	104 (57.1)	199 (50.9)	69 (65.1)	130 (45.6)
A coronavirus vaccination should be mandatory for everyone who is able to have it.									
<i>Strongly agree</i>	254 (8.2)	201 (7.7)	53 (10.3)	253 (8.1)	153 (8.2)	100 (8.0)	254 (8.1)	83 (9.6)	171 (7.6)
<i>Agree</i>	1363 (43.7)	1087 (41.8)	276 (53.4)	1357 (43.7)	847 (45.6)	510 (40.9)	1366 (43.8)	413 (47.7)	953 (42.3)
<i>Disagree</i>	1218 (39.1)	1062 (40.9)	156 (30.2)	1215 (39.1)	708 (38.1)	507 (40.7)	1219 (39.1)	305 (35.3)	914 (40.5)

Variable	Age			Education			Gender		
	Total (n=3477)	Age 18-64 (n=2877)	Age 65+ (n=600)	Total (n=3464)	<10 years to 12-13 years (n=2111)	Higher education and above (n=1353)	Total (n=3483)	Males (n=984)	Females (n=2499)
	N (%) or M (SD)			N (%) or M (SD)			N (%) or M (SD)		
<i>Strongly disagree</i>	281 (9.0)	249 (9.6)	32 (6.2)	280 (9.0)	150 (8.1)	130 (10.4)	281 (9.0)	64 (7.4)	217 (9.6)
When a coronavirus vaccination becomes available to you, how likely is it you will take it?									
<i>Very likely</i>	243 (8.6)	198 (8.5)	45 (9.2)	241 (8.5)	134 (7.7)	107 (9.8)	244 (8.6)	89 (11.4)	155 (7.5)
<i>Likely</i>	1271 (44.8)	1065 (45.5)	206 (42.0)	1267 (44.9)	737 (42.6)	530 (48.5)	1272 (44.8)	392 (50.1)	880 (42.8)
<i>Unlikely</i>	990 (34.9)	815 (34.8)	175 (35.6)	985 (34.9)	639 (36.9)	346 (31.7)	992 (35.0)	213 (27.2)	779 (37.9)
<i>Very unlikely</i>	330 (11.6)	265 (11.3)	65 (13.2)	329 (11.7)	220 (12.7)	109 (10.0)	330 (11.6)	89 (11.4)	241 (11.7)
Have you ever been diagnosed with COVID-19 by PCR test?									
<i>Yes</i>	772 (22.7)	619 (22.0)	153 (26.5)	767 (22.7)	378 (18.4)	389 (29.3)	772 (22.7)	202 (21.4)	570 (23.2)
<i>No</i>	2623 (77.3)	2199 (78.0)	424 (73.5)	2616 (77.3)	1677 (81.6)	939 (70.7)	2627 (77.3)	742 (78.6)	1885 (76.8)
Have you been hospitalized due to COVID-19?									
<i>Yes</i>	193 (25.0)	134 (21.6)	59 (38.6)	191 (24.9)	116 (30.7)	75 (19.3)	193 (25.0)	55 (27.2)	138 (24.2)
<i>No</i>	579 (75.0)	485 (78.4)	94 (61.4)	576 (75.1)	262 (69.3)	314 (80.7)	579 (75.0)	147 (72.8)	432 (75.8)

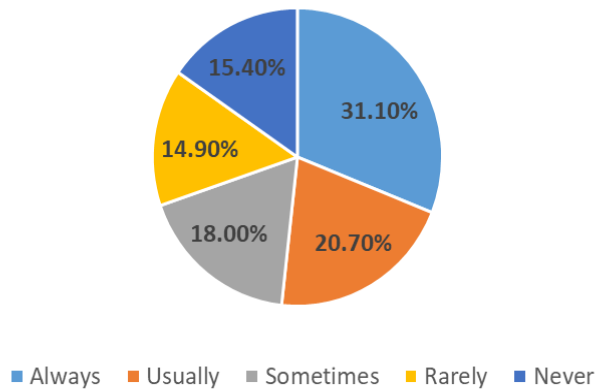
How often have you done the following in the past 14 days: Washed your hands with soap and water for about 20 seconds?



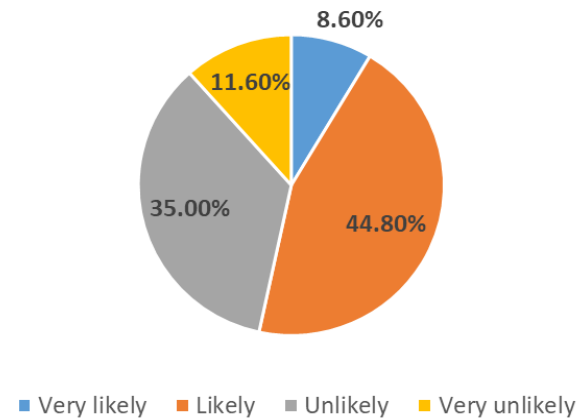
How often have you done the following in the past 14 days: Maintained social distance of at least 1.5 meters?



How often have you done the following in the past 14 days: Wore a mask in public areas?



When a coronavirus vaccination becomes available to you, how likely is it you will take it?



On a scale from 1 to 7, how much confidence do you have that the following can handle the COVID-19 challenge well?

