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The Assessment of Knowledge, Attitudes, and Practices of University's Students Towards Covid-19

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Abstract

Introduction: The COVID - 19 has been a global public health concern from day one till now.

The Aim is to assess students' knowledge, attitudes, and practices towards COVID-19.

Material and Methods: This is a cross-sectional study. A validated, structured, anonymous, self-administered online questionnaire was used. The inclusion criteria were voluntary students from each Luigj Gurakuqi University faculty member.

Two hundred fifty-seven students completed the questionnaire, which was created with the Microsoft Forms Office program and distributed via WhatsApp. Data were calculated through the SPSS program. Pearson correlation, ANOVA test, and simple independent test –T were applied to elaborate on the data collected. The study period is April-May 2022.

Results: In this study, 257 students participated. Most of the participants were female (N=223; 87%). More than 86% of students responded positively regarding their knowledge about the symptoms of COVID-19. Regarding attitude and practice, 90% of students agreed that hand washing is necessary to prevent infection, while 98% believed wearing a mask would prevent disease.

Conclusions: In general, they show positive attitudes and practices regarding COVID-19. Many say they would not hide it as information; they would seek medical help.

Keywords: COVID-19, knowledge, attitudes, practices, students, university.

Introduction

COVID-19 is a highly infectious disease with symptoms similar to pneumonia caused by the SARS-CoV-2 virus. In December 2019, the Coronavirus Disease (COVID-19) was first reported in Wuhan, Hubei Province, China. The disease has spread globally since 2019, and on March 11, 2020, the World Health Organization declared it a worldwide pandemic.

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In Albania, from January 3, 2020, to April 22, 2022, 274,685 confirmed cases of COVID-19, with 3,496 deaths, were reported to the WHO. Until April 10, 2022, 2,815,381 vaccine doses have been administered. (WHO 2020)

Coronaviruses (CoV) are a large family of Coronaviridae viruses that cause mild to severe disease. They are widespread in many animal species and rarely evolve, transmit, infect humans, and then spread among them. (Su S et.al.2016)

Given the high incidence of COVID-19, one of the communicable diseases, increasing health knowledge about infectious diseases is critical to controlling pandemics and effectively reducing the spread of infectious diseases. Adopting measures is essential in improving contagious disease control and prevention, while attitudes and knowledge practices are crucial for health education. (Wang M. et.al., 2018)

On January 9, 2020, a new coronavirus, later named SARS-CoV-2, the virus behind Covid-19, was found to be the cause of pneumonia. A day later, the genome of SARS-CoV-2 was sequenced and made publicly available

by Chinese scientists. On January 11, a 61-year-old man became the first person to die from this mysterious new disease. At the time, authorities said there was no evidence of human-to-human transmission. Two weeks later, on January 23, Wuhan, home to more than 11 million people, was locked down. At this moment, 17 people had died. To slow the spread of Covid-19, billions of people were quarantined. (Li Q. 2020, WHO. 2020)

The rapid spread of COVID-19 has drastically changed people's lives and many aspects of the global economy, public and private. On March 8, 2020, Albania confirmed the first two cases of Coronavirus, a father and a son who had come to the country from Florence, Italy.

About 300 cases and 10 deaths were recorded per million inhabitants two and a half months later. The data show that Albania had the lowest cumulative number of cases in the Western Balkans, with 131,517 cases (45,953 per million inhabitants). (OECD 2021, Budani, B. 2021)

Considering university students as providers of information for their families and the surrounding communities, the "Luigj Gurakuqi" university professors in February 2020 started information sessions with students about this pandemic. Thus, student education was expected to positively influence knowledge, attitudes, and behavior toward COVID-19 for them and their community. This paper explores and assesses university students' knowledge, attitudes, and practices towards COVID-19 at "Luigj Gurakuqi" University, Shkodër.

Methodology

Study Design

This is a transversal cross-sectional study. Primary literature was studied about Covid-19, and details were provided to provide the proper knowledge. Using a validated, structured, self-administered online questionnaire, the knowledge, attitudes, and practices about Covid-19 were explored. The research is focused on "Luigj Gurakuqi" University, Shkodër, for bachelor and master program students. All faculties are included. The inclusion criteria were students from each faculty member of Luigj Gurakuqi University who agreed to participate in this study and completed the questionnaire.

They were informed that this is research on knowledge, attitudes, and practices about COVID-19. Participants were told that their participation was voluntary and were guaranteed the privacy and confidentiality of all information provided, which was used for research purposes only. A total of 257 students completed the questionnaire.

The standardized questionnaire checks and assesses students' knowledge about the etiological cause, extent, symptoms, and preventive measures of COVID-19 and their understanding of the treatment measures. It was created with the Microsoft Forms Office program and distributed with WhatsApp.

Data analysis

Data were calculated through the SPSS program. Pearson correlation, ANOVA test, and simple independent test –T were applied to elaborate on the data collected. The study period is April-May 2022.

The questionnaire assessing knowledge consists of seven items described in Table 1 above. The participants were asked to choose whether each statement was true or false. Except for the K6 and K7, 'true' answers were correct. When this study was conducted, other antivirals and antibiotics were still the mainstays of COVID-19 treatment. Meanwhile, the COVID-19 vaccine has not passed clinical trials. Every correct answer was scored 1, and the wrong answer was scored 0. Thus, the maximum score would be 7. Questionnaire items for attitude consist of four items with a 5-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree). The seven question items of practice also had a 5-point Likert scale related to frequency (always, often, sometimes, seldom, and never). The maximum score for attitude was 20, while for practice was 35. Then, the scores for knowledge, attitude, and training were classified into three categories: good (>75%), moderate (50-75%), and poor (<50%). Research ethics were respected. The collected data is used only for this research and is not published or viewed by anyone unauthorized. This study obtained ethical approval from the Research Ethics Committee, F.N.S. University of Shkodra" Luigj Gurakuqi," Shkoder, Albania (No. prot. 8/2, 07/02/ 2022).

Results

Demographic data and descriptive of the sample

52% of students live in the city, while the rest live in the countryside. The average age of the respondents is 22.8 years, where the minimum age is 18 years, and the maximum is 54 years. SDEV= ±4.88. in this study, 223 participants, or 87%, were female, and only 34, or 13%, were male.

Participants' characteristics	**No (%)**
Gender	
Female	223 (87)
Male	34 (13)
Age	
18-21	176 (68.48)
22-25	63 (24.52)
>25	18 (7.0)
Faculty	
Natural Sciences	138 (53.69)
Non-Natural Sciences	119 (46.31)
Residence	
Rural	123 (48)
Urban	134 (52)

Table 1. Socio-demographic characteristics of participants

	No	Minimum	Maximum	Mean		Std. Dev
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Age	257	18	54	22.00778	0.3049423	4.888597
Knowledge	257	0	7	5.805447	0.0847246	1.358239
Attitudes	257	5	18	12.98833	0.1287712	2.06436
Practices	257	7	35	19.1323	0.3511269	5.628992

Table 2. Descriptive Statistic of sample

According to the results, 43% of participants were in the third year of their bachelor's study, 23% in the second year, 6% in the first year, and 28% in the master's study.

In this study, 53.69% of students were part of the Faculty of Natural Sciences, 25% of the Economic Faculty, 18% of the Faculty of Education Sciences, 2.31% of the Faculty of Law Sciences, and Faculty of Social Sciences, and 1% were part of the Faculty of Foreign Languages.

Knowledge

The mean knowledge, attitude, and practice scores were 5.8±1.3, 12.98±2.06, and 19.13±5.62, respectively. (See Table No 2).

Most students are informed about the etiological cause of this infectious disease because 89% answered positively that COVID-19 is a virus.

From the survey results, it is noted that most students, 95% of them, know the clinical signs of COVID-19, namely fever, cough, and difficulty in breathing.

Muscle pain, sore throat, and diarrhea are other signs of COVID-19. As can be seen from the questionnaire results, 86% of the students know these symptoms, while 14% do not. (see table 3)

Attitudes

Observing hygienic rules to prevent infection with COVID-19 or other microorganisms is critical, as it can prevent illness and disease. About 90% of respondents agree that hand washing can help prevent infection. Regarding wearing a mask, 98% of students see it as an effective preventive strategy.

Over 60% of respondents know that specific medications are available for the disease. Meanwhile, 69% believe that vaccines have already been tested.

The majority of students need a firm attitude or agree about the possibility of treating COVID-19 at home. This may be because of known cases with severe respiratory symptoms such as persistent respiratory distress, because

Item	**Question knowledge**	**Yes(1 point)**	**No (0 point)**
K1	COVID-19 is caused by virus	228 (89)	29(11)
K2	Fever, cough, and breath difficulties are COVID-19 symptoms	244(95)	13(5)
K3	Myalgia (muscle pain), sore throat, and diarrhea are also COVID-19 symptoms	220 (86)	37(14)
K4	Washing hands with soap and water can help prevent COVID-19 transmission	232(90)	25(10)
K5	Wearing masks is one of effective prevention strategies against COVID-19	229(98)	28(2)
K6	Currently, the specific drug for COVID-19 is already available	162(63)	95(37)
K7	Currently, there is COVID-19 vaccine passed clinical trials	177(69)	80(31)

Table 3. The results of the knowledge

Item	**Question attitudes**	**Strongly agree 1point**	**Agree 2 points**	**Neutral 3 points**	**Disagree 4 points**	**Strongly disagree 5 points**
A1	COVID-19 patients can be treated at home without any medical help	15(5.8)	42(16.3)	95 (37)	78 (30.4)	27 (30.4)
A2	If I were a COVID-19 patient, I could not conceal the information	13(5.1)	6(2.3)	31 (12.1)	71 (27.6)	136 (52.9)
A3	If I contract COVID-19, I will go to the hospital to get treatment	60 (23)	80(31.5)	76 (29.6)	16 (6.2)	25 (9.7)
A4	I will self-isolate after local traveling	29 (11.3)	60 (23.3)	70 (27.2)	62 (24.1)	36 (14.1)

Table 4. The results of the attitudes

severe pneumonia with a poor prognosis may have developed, or because of other complications.

It is a fact that 80.5% of students present a positive attitude, as they disagree with hiding the symptoms.

A significant number of the respondents agreed to receive health care in the hospital to control the disease. This is students' positive attitude regarding the treatment of the coronavirus disease.

Our study observed that 38.1% of students answered that they would not self-isolate after traveling. This can be considered a wrong belief because the possibility of spreading the infection is high, and even healthy carriers can transmit it. The possibility of infection should never be underestimated. *(see table 4)*

Practice

The most significant percentage of students state that they do not, in all cases, follow the protocols to prevent infection and limit the spread. However, they often or always show caution to prevent contamination through hands.

According to the answers to question 19, students present a negative practice, as a significant number of them have categorically stated that they have never self-isolated after local trips. This can pose a risk of spreading infections picked up from other areas.

Most respondents said they often take personal items to protect themselves from infection. 10.9% of them always take things and 13.2% use disinfectants. They present a correct behavior regarding these two preventive measures.

About 86% of students say they wash their hands after performing activities or touching something, whereas 54.1% say they always wash their hands. This is a critical point since hand hygiene is the primary measure for reducing infections and is the simplest and most effective way to prevent the spread of bacteria.

Wearing a mask is another significant measure. The mask is an essential protective barrier, especially in crowds where the possibility of spreading the virus is high. 9.7% of students say that they always use the mask, and another large part say that they often or sometimes use it. *(See table 5)*

K.A.P. profile of participants and correlation between K.A.P. and demographic profile

This study comprehensively assessed students' knowledge, attitudes, and practices from different fields of study at a public university. The overall score of students' knowledge about COVID-19 was 86%, indicating that most students knew about COVID-19. Table 6 shows that 68.9% of students understand well, and 24.1% have moderate knowledge. Regarding the attitudes, 7.78% of students have good attitudes, 86.38% have moderate attitudes, and only 5.84% have poor attitudes. About 60% of students are aware of the treatment methods and vaccines. (See table 6)

Students represent the average level of knowledge, 82.9%, with a Std dev ±19. A positive correlation exists between level of expertise and age (coefficient of Pearson r =0.033, p=0.603), but it is not statistically significant.

Variable	No	Percentage (%)
Knowledge		
Good	177	68.9
Moderate	62	24.1
Poor	18	7
Attitude		
Good	20	7.78
Moderate	222	86.38
Poor	15	5.84
Practice		
Good	117	45.53
Moderate	29	11.28
Poor	111	43.19

Table 6. K.A.P. profile of participants

Item	Question practice	Always	Often	Sometimes	Seldom	Never
P1	I gather as usual without following COVID-19 protocol	14 (5.4)	74 (28.8)	91(35.4)	54 (21)	24 (9.4)
P2	I avoid touching my face (eyes, nose, or mouth) with contaminated hands	92 (35.8)	77 (30)	50 (19.5)	27 (10.5)	11 (4.2)
P3	I self-isolate after getting back from local traveling	13 (5.1)	33 (12.8)	72 (28)	55 (21.4)	84 (32.7)
P4	I bring hand sanitizer if I go outside	34 (13.2)	76 (29.6)	81 (31.5)	43 (16.7)	23(8.9)
P5	I bring personal belongings to prevent COVID-19	28(10.9)	83 (32.3)	60 (23.3)	55 (21.4)	31 (12.1)
P6	I wash my hands after doing activities or touching anything	139 (54.1)	82 (31.9)	23 (8.9)	7 (2.7)	6 (2.3)
P7	I wear masks when I am in a crowd	25 (9.7)	71 (27.6)	84 (32.7)	47(18.3)	30 (11.7)

Table 5. The results of the practice

Students represent the average level of attitudes at 64.9% with a Std dev= 10.32, and there exists a negative correlation between the age of students and their level of attitudes, with a coefficient of Pearson r =-0.05341, p=0.394, but it is not statistically significant.

Regarding the practices, students represent an average level of training of 54.6% with a Std dev = 16.082, and there exists a negative correlation between the age of students and level of training; Pearson correlation r =-0.075, p=0.229, but it is not statistically significant.

In all these components, there is no statistically significant relationship between age and level of knowledge, behaviors, or practices. *(See table 7)*

There is a statistically significant positive relationship between faculty and knowledge. Pearson correlation r = -0.125, p=0.046. Also, between faculty and attitudes, the Pearson correlation was r = 0.131, p=0.036. There is a statistically significant negative relationship between the year of study and practices. Pearson correlation r = -0.127, p=0.042. (See table 7).

From the Independent Samples Test, Levene's Test for Equality of Variances, and the t-test for Equality of Means, none of the differences in the average values of points for the knowledge, behaviors, or practices observed between women and men are statistically significant. (See table 8)

Variable	Correlations	knowledge	attitude	practices
Gender	Pearson Correlation	-0.098	-0.041	-0.060
	Sig. (2-tailed)	0.116	0.511	0.336
	N	257	257	257
Age	Pearson Correlation	0.033	-0.053	-0.075
	Sig. (2-tailed)	**0.603**	**0.394**	**0.229**
	N	257	257	257
Faculty	Pearson Correlation	0.125	0.131	-0.088
	Sig. (2-tailed)	**0.046**	**0.036**	0.161
	N	257	257	257
Year of Study	Pearson Correlation	0.113	0.102	-0.127
	Sig. (2-tailed)	0.070	0.103	**0.042**
	N	257	257	257

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

Table 7. The correlation between gender, age, year, faculty of study and knowledge, attitudes, practices

		F	Sig.	t	df	Sig. (2-tailed)	Mean Diff	Std.Error Diff	95% CI of the Diff Lower	Upper
Knowledge	Equal variances assumed	0.230	0.632	1.579	255.00	**0.116**	0.394	0.249	-0.097	0.885
	Equal variances are not assumed.			1.679	45.74	**0.100**	0.394	0.234	-0.078	0.866
Attitudes	Equal variances assumed	0.122	0.727	0.659	255.00	**0.511**	0.251	0.380	-0.499	1.000
	Equal variances are not assumed.			0.650	43.27	**0.519**	0.251	0.386	-0.527	1.028
Practices	Equal variances assumed	0.007	0.934	0.965	255.00	**0.336**	1.000	1.036	-1.041	3.041
	Equal variances are not assumed.			0.966	43.70	**0.340**	1.000	1.036	-1.088	3.088

Table 8. Independent Samples Test, Levene's Test for Equality of Variances, and t-test for Equality of Means

Items	**Faculty**	N	Mean	Std. Dev	Std. Error
Knowledge	NO Nat Sci	120	**5.625**	1.551	0.142
	F Nat Sci	137	**5.964**	1.147	0.098
	Total	257	5.805	1.358	0.085
Attitudes	NO Nat Sci	120	**12.700**	2.019	0.184
	F Nat Sci	137	**13.241**	2.078	0.178
	Total	257	12.988	2.064	0.129
Practices	F NO Nat Sci	120	**19.658**	5.876	0.536
	F Nat Sci	137	**18.672**	5.383	0.460
	Total	257	19.132	5.629	0.351

Table 9. Descriptive sample according to the faculty of study

Items		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Knowledge	Between Groups	7.382	3.0	2.461	1.339	**0.262**
	Within Groups	464.890	253.0	1.838		
	Total	472.272	256.0			
Attitudes	Between Groups	17.684	3.0	5.895	1.390	**0.246**
	Within Groups	1073.281	253.0	4.242		
	Total	1090.965	256.0			
Practices	Between Groups	152.233	3.0	50.744	1.613	**0.187**
	Within Groups	7959.269	253.0	31.460		
	Total	8111.502	256.0			

Table 10. ANOVA test value

The changes in the average values of the collected points regarding the faculty of study grouping Faculty of Natural Sciences and No Natural Sciences are significant for knowledge and behaviors and not statistically significant for practices.

From the ANOVA test, the changes in the average values of the collected points regarding the grouping according to the year of study are statistically insignificant for knowledge, behaviors, and practices. (*See table 10)*

Discussions

The Knowledge, Attitude, and Practices for a particular infectious illness can be influenced by various factors, namely, the gravity of the illness, the severity of its spread, and the fatality rate. Ever since the announcement of COVID-19 as a pandemic by the WHO16, the knowledge, attitude, and practices toward COVID-19 have been growing daily. (WHO 2020) Recent studies have shown different levels of knowledge, attitudes, and practices toward COVID-19 among different target groups. A survey among pharmacy students in Saudi Arabia showed that pharmacy students had good knowledge, positive attitudes, and good practices towards COVID-19 and preventive measures. (Alrasheedy, A. et.al. 2021) Also, a study among international students in China found that social media platforms contributed enormously towards information dissemination and were commended for their continuous notifications on COVID-19, which helped students have full knowledge. (Wu, X. L et.al. 2021)

Another study among students in Bangladesh about knowledge, attitude, practice, and perception regarding COVID-19 needed to be more satisfactory. (Wadood, M. A. et. al. 2020).

A study was conducted among the medical students from a government medical college in Uttarakhand from March 22 to March 25, 2020, the week before India's lockdown. Most students had good knowledge, a positive attitude, and sufficient practice. Females and males have significantly different practices. (Maheshwari S. et al., 2020)

Also, the study among medical and non-medical university students in Jordan revealed good knowledge and practice and a high attitude among the study population toward COVID-19. (Alzoubi et al.,2020)

Another study in Oman revealed that nursing students had good knowledge and a positive attitude toward the COVID-19 pandemic. On the other hand, nursing students have shown a moderate performance in preventive behaviors, most notably, not wearing masks when going outside. (Alshdefat, A., et al. 2021).

Conclusions

This study showed good knowledge about COVID-19 among 257 students of the University of Shkodra "Luigj

Gurakuqi," with an overall knowledge score of 86%. Students understood most questions about general information, etiology, symptoms, and preventive measures for COVID-19. About 60% of students are aware of the treatment methods and vaccines. They generally show positive attitudes regarding COVID-19, as many of them state that they would not hide it as information; they would seek medical help. Students also demonstrated good practice behaviors based on COVID-19 protocols.

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Declaration of Conflicting Interests

The Authors declare that there is no conflict of interest.

Ethics Approval and Consent to Participate

This study was conducted by the Declaration of Helsinki and approved by the Ethics Committee F.N.S. University of Shkodra" Luigj Gurakuqi," Shkoder, Albania (No. prot. 8/2, 07/02/ 2022).

Human and Animal Rights

No animals were used in this research. All procedures performed in studies involving human participants were according to the standards of institutional and research committees and the 1975 Declaration of Helsinki, as revised in 2013.

Consent for Publication

Informed consent was obtained from all participants.

Availability of Data and Materials

The data supporting the article's findings is available by request from the primary author, [A.P.G.].

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