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The Extent of Adherence to the Precautionary Measures Among University Students in Palestine During COVID-19 Pandemic

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Abstract: (COVID-19) pandemic has rapidly spread across the globe causing massive disruptions to everyday life. This study aimed to assess the extent of adherence to the Precautionary measures among university students in Palestine during COVID-19 Pandemic. Research design: A cross-sectional sample survey consisted of 2094 male and female university students. Setting: the study was conducted at Modern University College, An-Najah National University, Palestine Polytechnic University, Al-Quds Open University, Ibn Sina College of Health Sciences and Arab American of University /West Bank / Palestine. The data collected was from the participant university students and started in first November 2020 to late November 2020 Subjects: A convenience sample consisted of 2094 female and male students with different Bachelor degree programs. Tools: A self-designed questionnaire was used for data collection and included the following parts. Part 1: demographic particulars of the university students, Part II. Knowledge of university students about Coronavirus, knowledge among isolation for patient with COVID-19 at home, also their knowledge regarding following for Precautionary measures outside home, Part III: precaution practices were assessed for university students outside home Part IV: assessed University student attitude toward COVID-19. Results: the current study reveals that 80.2% of the studied sample of students had a satisfactory total knowledge regarding precaution measures outside home, 91% of them had a satisfactory total knowledge regarding precaution measures inside home among patient with COVID-19, and 95.5% of them had a satisfactory total knowledge regarding COVID-19 disease. There was a statistically highly significant relation between total knowledge and total practices outside home (p-value<0.001), and statistically significant relation between total knowledge and total attitudes (p-value 0.005). Conclusion: based on the current study, students were observed to have substantial knowledge, practices for precautionary measures, and a positive attitude toward COVID-19. Recommendation: continuing Government programs should aim to educate individuals from other sectors of the society to ensure the proper dissemination of knowledge on preventive safety measures, as this will help restrict and control the pandemic.

Keywords: Precautionary Measures, COVID-19 Pandemic, Palestine University Students

1. Introduction

The pandemic coronavirus disease (COVID-19) is a highly infectious disease, the first to be reported in Wuhan city of China and is still swiftly spreading and infecting public all over the world. It is caused by a virus known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [17]. On December 31st of 2020, WHO declared this outbreak as a Public Health Emergency of International Concern and

publicized a name for the new coronavirus disease as COVID-19 and on 11th of March 2020, WHO confirmed COVID-19 as pandemic [25].

According to the Palestinian Ministry of Health (MOH), the first cases had been detected at a hotel in Bethlehem area, where a group of Greek tourists had visited the hotel in late February 2020, with two later diagnosed with the virus [27].

According to The United Nations Relief and Works Agency (UNRWA), the prolonged blockade imposed has severely impacted the socioeconomic and health conditions of the Occupied Palestinian Territories and Gaza strip [29]. The longstanding movement restrictions have undermined Gaza's economy and the checkpoints in West Bank to high levels of unemployment, food insecurity, aid dependency, and poor standards of hygiene and sanitation [3]. Consequently, the government response was swift and immediate, started by launching a social media campaign encouraging people to stay at home and to follow the ministry of health instructions.

Coronavirus disease 2019 which is abbreviated "COVID-19" is a developing respiratory disease that is triggered by a new coronavirus. The newest member of the coronavirus family (COVID-19) has been recently identified as acute and severe respiratory syndrome in humans. It was established that in China, 18.5% of the patients with COVID-19 developed to the severe stage, which is characterized by acute respiratory distress syndrome, septic shock, difficult-to-tackle metabolic acidosis, and bleeding and coagulation dysfunction [5]. Some of the unparalleled measures adopted to control the COVID-19 transmission in Hubei and other provinces of China and other parts of the world, including the suspension of public transportation, the closing of public places, management of communities, and isolation and care for infected people and suspected cases [22].

The symptoms of COVID-19, some infected people may asymptomatic, whereas others may have mild symptoms. Around 80% of patients recover without treatment, while one out of six patients develop more severe symptoms, not limited to difficulty breathing. These patients are most likely to be elderly or with underlying medical conditions, such as hypertension, heart problems or diabetes [20]. Additionally, young people are not invincible against coronavirus; world data have shown that a large number of the patients were young, among which many needed hospitalization [5, 4, 7].

Globally, a total of 8,236,326 cases were identified with 40,598 new cases in more than 170 countries till 1st April 2020. The European region is more affected than the rest of the continents. About 464,212 cases were reported with 30,089 deaths in European region, followed by Regions of America with 188,751 cases along with 3,400 causalities. The cases of Western Pacific region, Eastern Mediterranean region, South-East Asia region and African regions are 106,422 cases (3,701 deaths), 54.281 cases (3,115 deaths), 5,175 (195 deaths) and 4,073 cases (91 deaths) respectively [28]. Highest no. of cases was reported in United State (163,199 cases), followed by Italy, Spain, China, France and Germany. However, the mortality rate is greater in Italy (11.7%), followed by Spain (8.7%), United Kingdom (7.11) and France (6.8%). As a result of traveling, an outbreak occurred in several countries especially the European regions are more affected than the rest of world. [24].

The use of face masks and hand sanitizers, a ban on social events, and working from home, etc., were among the measures that were followed to curb the spread of COVID-19. Taiwanese people panic-bought nearly all available mask and hand sanitizer stocks within 2 weeks of the first case in Taiwan 21 January 2020. Movie theatres, restaurants, and malls had diminishing crowds [21].

The awareness and knowledge of health literacy skills permit patients to manage their own well-being by improving their communication with doctors, and making smart healthcare decisions [16, 19]. Nevertheless, public adherence to control COVID-19 is influenced greatly by their knowledge, attitudes, and practices (KAP). Therefore, the present study was aimed to explore the KAP (knowledge, attitude and practice) adopted by the university students of Madhya Pradesh (India) towards prevention of COVID-19 pandemic [20].

2. Subjects and Methods

Aim: the aim of this study is to assess the extent of adherence to the Precautionary measures among University Students in Palestine during COVID -19 Pandemic.

Research Design: A cross-sectional sample survey consisted of (2094) male and female university students (aged from 18 >20 years) freshman and sophomore. Using online electronic data collection, the survey method was used because the study wanted to assess the knowledge level, attitude, practices and preventive measures of COVID -19 among Palestinian University Students.

Setting: The study was conducted at Modern University College, An-Najah National University, Palestine Polytechnic University, Al-Quds Open University, Ibn Sina College of Health Sciences and Arab American of University /West Bank / Palestine.

Sample: A convenience sample. The study included 2094 participants with different Bachelor degree programs, from six previous mentioned university and divided into 965 from health sciences, 382 financial and administrational sciences, 249 engineering, and 498 participated from social sciences. All participants responded to the online Google form link sent to their Whats-App groups. The study was conducted between November and December, 2020. University students used a Google form shared through email and mobile messages.

Tools for data collection:

Tool I.: A self-designed questionnaire was used for data collection and included the following parts:

Part I.-: Demographic particulars of the participant. The demographic variables consist of age, gender, speciality, place of residence, family income and number of family.

Part II. Knowledge was assessed for university student

using a 20-item questionnaire adapted from [14] and [15] slightly customized to suit college students. The items were attributed to knowledge about Coronavirus pandemic disease (10 Questions), knowledge among isolation for patient with COVID-19 at home (7 Questions), knowledge regarding following for Precautionary measures outside home (3 Questions). 3-point scale were fixed as complete correct= (3), incomplete correct = (2) and incorrect= (1). The total score was recorded as satisfactory> 85%, unsatisfactory < 85%. All knowledge questions were based on Centers for Disease Control and Prevention (CDC) fact sheets.

Part III: Precautionary measures were assessed for practices university students outside home like hand washing, mask wearing, avoiding crowded places; keeping social distance and avoiding unnecessary travelling etc. The questionnaire was constructed on the basis of the published literature from the WHO (2020) (https://main.icmr.nic.in/) for prevention of SARS-Cov-2 transmission. The responses were fixed as always= (2), occasional= (1), and never= (0) respectively. The total score was recorded as satisfactory> 85%, unsatisfactory < 85%.

Part IV: Assessed the University students' attitude toward COVID-19: approximately eleven items from a previous survey were used to assess the student's attitude. The questions were related to agree that successfully controlled in elimination of COVID-19 changed for someone if affected with COVID-19. Do you: ask for consult from responsible authorities in the event of emergency symptoms, think the local authorities will succeed in reducing the spread of disease, think the preventive measures of the government are early, think the preventive measures of the government were enough, think you do not get off the COVID-19, think it is not necessary to take precautionary measures for children and older. Isolation of affected people is an effective way to reduce the spread of the COVID-19, and early treatment is the effective way to control the prevalence of COVID-19 as well. The scoring choice is the option "agree" which added two points, the option "not agree" added one, while zero was added for the "don't know" option in each behaviour-related question.

Content Validity & reliability:
Content validity was done to identify the degree to which the tools measure what was supposed to be measured. The translated tools were examined by a panel of three experts in the field of community who agreed that it is valid and relevant with the aim of the study. Internal consistency was measured to identify the extent to which the items of the tools measure the same concept and the extent to which the items are correlated with each other. The internal consistency which estimated reliability by Cronbach's Alpha was 0.862.

Statistical analysis: descriptive statistical measures including frequency, percentage, and mean score were used to report the findings. The chi-square test was used to determine the association between the categories. Statistical analysis was performed using SPSS (IBM SPSS Statistics for Windows, Version 25.0; IBM Corp., Armonk, NY). P-value < 0.05 was considered not statistically significant& P-value

<0.001 was considered statistically highly significant.

Ethical consideration: Ethical approval was obtained from the previous six mentioned Universities to conduct the study. All participants provided informed consent before participating in the study by using a Google form shared through email, mobile messages, and in print with students from the previous mentioned setting.

3. Result

Table 1. *Distribution of university students according to their demographic characteristics (n= 2094).*

Demographic Characteristics	No	%
Age (years)		
1) 18- <19	420	20.1
2) 19- <20	670	32
3) >20	1004	47.9
Mean± SD= (19.56±3.069)		
Gender		
1) Male	1119	53.4
2) Female	975	46.6
Place of residence		
1) City	564	26.9
2) Village	967	46.2
3) Camps	563	26.9
Family income		
1) Enough	1920	91.7
2) Not enough	174	8.3
Number of family		
1) 2 – 4	743	35.5
2) 5 – 7	1000	47.8
3) > 7	351	19.7
University		
Modern University College	606	28.9
Arab American University	331	15.8
An-Najah National University	297	14.2
Palestinian Polytechnic University	308	14.7
Ibn-Sina College for Nursing and Midwife	224	10.8
Al-Quds Open University		
	328	15.6
Programs		
Health Sciences	965	46.1
Financial and Administrational Sciences	382	18.2
Engineering	249	11.9
Social Sciences	498	23.8

Table 1: A total of 2094 students completed the online questionnaire. The mean/average age was (20.56±3.069) years and 53.3% were male. 46.1 Health Sciences, 18.2 Financial and Administrational Sciences, 11.9 Engineering, 23.8 Social Sciences**.** Regarding residence, results show that 46.2% resided in village, while 26.9% in city and campus residents. 47.8% of the students live with their family consisting of 5-7 members. Additionally, 91.7% of the students have enough family income.

Table 2. *Distribution of university students according to their knowledge about COVID-19 pandemic (n=2094).*

Items	Correct		Incomplete correct		Incorrect	
	N	%	N	%	N	%
*Meaning of COVID-19	2074	99.0	20	1.0	0	0.0
*Causes of COVID-19	2016	96.3	78	3.7	0	0.0
*Methods of transmission	2094	100.0	0.0	0.0	0.0	0.0
*Signs & symptoms of disease	1858	88.7	224	10.7	12	0.6
*How can you protect yourself and others from infection	1787	85.3	202	9.6	105	5.1
*Time for repetition tests of abnormal results	1179	56.3	242	11.6	673	32.1
*Medical tests to discover the virus of COVID-19	1526	72.8	482	27.2	86	4.0
*Prophylactic anticoagulation drugs used	1542	73.6	368	17.6	184	8.8
* Time to give anticoagulant to prevent blood Clotting	1359	64.9	490	23.4	245	11.7
*Treatment of COVID-19	1963	93.7	131	6.3	0	0.0

Table 2: shows that the great majority of the studied students (99%, 96% & 93.7) have a correct answer about the meaning of COVID-19, its causes & the treatment respectively. All of them have a correct answer about transmission of COVID; also, the majority (88.7 & 85.3) have correct answers regarding signs and symptoms & protection methods from infection respectively. While, 56.3% of them know the time for repetition tests, 11.6% have incomplete answers, and 32.1% did not know the time. Regarding test to discover the virus & anticoagulation drugs 72.8% & 73.6% have correct answers, 27.2% & 17.6% have incomplete answers, and only 4%& 8.8% did not know, respectively. In addition, 64.9 have correct answers, 23.4% have incomplete answers & 11.7% have incorrect answers about timing to give anticoagulation.

Table 3. *Distribution of university students according to their knowledge among isolation for patient with COVID-19 at home (n=2094).*

Items	Correct		Incomplete correct		Incorrect	
	N	%	N	%	N	%
*What is patient isolation at home	1994	95.2	100	4.8	0	0.0
*Meaning of self-quarantine	2071	98.9	23	1.1	0	0.0
*Type of medication during home isolation	1957	93.5	115	5.5	22	1.0
* Information about Precautions measures for patients with COVID-19 isolation	1981	94.6	100	4.8	13	0.6
* Information to deal with visitors for patients with COVID-19 isolation	1954	93.3	100	4.8	40	1.9
*Information for environmental cleaning to prevent COVID-19	1883	89.9	177	8.4	34	1.6
* Who are the precautionary measures to disinfect and clean upholstery to prevent infection with COVID-19?	1647	78.7	315	15.0	132	6,3

Table 3: reveals that the great majority (95.2%, 98.9%, 93.5 & 94.6%) respectively of studied students have correct answers regarding the determination of the patient who needs isolation at home, meaning self-quarantine, type of medication used during isolation, precaution with visitors, and Precautions measures for patients with COVID-19 isolation. Furthermore, 89.9% & 78.7% respectively have correct answers regarding information for environmental cleaning to prevent COVID-19 & the precautionary measures to disinfect and clean upholstery to prevent infection with COVID-19. While, limited number of them have incomplete & incorrect answers towards precautionary measures to deal with a patient with COVID-19 at home.

Table 4. *Distribution of university students' knowledge regarding followed Precautionary Measures outside home (n=2094).*

Items	Correct		Incomplete correct		Incorrect	
	N	%	N	%	N	%
* The precautionary measures that must be followed to avoid close contact with others	1908	91.1	124	5.9	62	3.0
* The precautionary measures for respiratory hygiene to protect from COVID-19	1769	84.5	232	11.0	93	4.5
* What is personal protective tool used to protect from COVID-19	1750	83.6	243	11.6	101	4.8

Table 4: clarifies that 91.1% of studied students have correct answers regarding followed the precautionary measures outside home and 4.5% have incorrect answers regarding followed the precautionary measures for respiratory hygiene to protect from COVID-19. Also, 83.6% of them have correct answers regarding using personal protective equipment.

Figure 1: illustrates that 80.2% of the studied students have a satisfactory total knowledge regarding followed the precaution measures outside home, 91% of them had a satisfactory total knowledge regarding isolation of patient affected with COVID-19 inside home and 95.5% of them have a satisfactory total knowledge regarding COVID-19 disease.
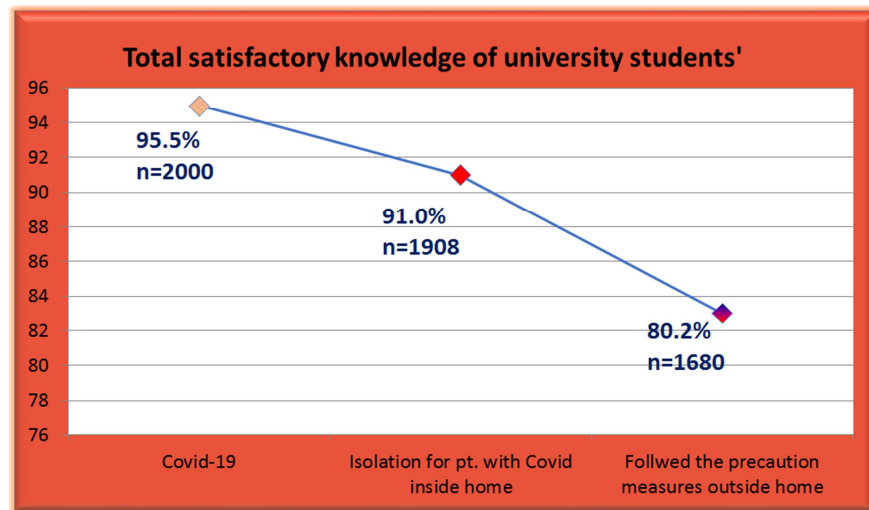
Figure 1. *Distribution of studied students according to their total satisfactory knowledge (n=2094).*

Table 5. *Distribution of university students according to their practices for the Precautionary Measures regarding COVID-19 disease outside home (n=2094).*

Items	Always		Occasional		Never	
	N	%	N	%	N	%
*Avoiding being in crowded places	1788	85.4	230	11.0	76	3.6
*Wearing the face mask when leaving the house	1240	59.2	820	39.2	34	1.6
*Practicing carefully cleaned hands using an antiseptic	1197	57.2	710	33.9	187	8.9
*Using tissue papers to cover mouth and nose during sneezing or coughing	1169	55.8	806	38.5	119	5.7
*Avoiding unnecessary travel during spread of COVID-19	1180	56.4	632	30.2	282	13.0
*Avoiding visiting relatives during spread of COVID-19	1523	72.7	408	19.5	163	7.8
* Using specialized personalized equipment	1288	61.5	806	38.5	0	0.0
*Using the appropriate methods in hand-washing	1077	51.4	982	46.9	35	1.7
* Using the appropriate methods in mask-wearing	1494	71.3	600	28.7	0	0.0

Table 5: this table shows that 85.4% of studied students are always not found in crowded places, 11% occasional while 3.6% are rarely found. 59.2% of them always wear facemasks outside home, 39.2% occasional and 1.6% never wear mask. Furthermore, 57.2% always clean their hands by antiseptic, 33.9 were occasional and only 5.7% never. Also, 55.8% of the studied students always use tissue papers to cover mouth and nose during sneezing or coughing, 38.5% occasional and 5.7% never. 72.7% always don't visit their relatives during spread of COVID-19, 19.5% occasional and 7.8% ever. In addition, 38.5% of the studied students occasionally use specialized personalized equipment, 46.9% of them occasionally use the appropriate methods in hand washing and 28.7% use the appropriate methods in mask-wearing.
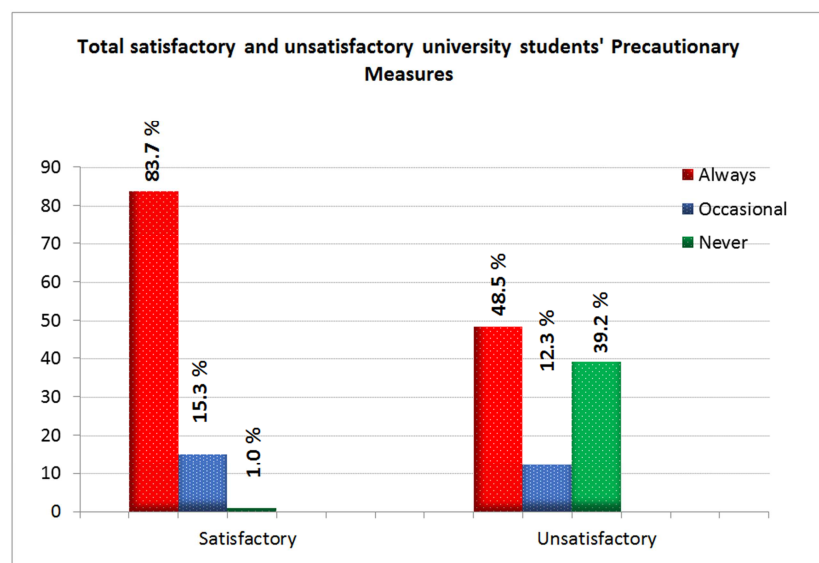

Figure 2. *Distribution of studied university students according to their total satisfactory & unsatisfactory Precautionary Measures (n=2094).*

Figure 2: as regards total satisfactory precautionary measures of university students this figure illustrated that 83.7% of the studied students had always, 15.3% of them had occasional and only 1.0 % of them never regarding adherence to the precautionary measures regarding COVID-19 disease outside the home. While, unsatisfactory practices the results clarified that, 48.5% had always, 12.3% had occasional, and 39.2 never adherence to the precautionary measures regarding COVID-19 disease.

Table 6. *Distribution of university students according to their attitudes regarding COVID-19 disease (n=2094).*

Items	Agree		Not agree		Don't know	
	N	%	N	%	N	%
*Do you agree that the governorate successfully controlled in elimination of COVID?	1287	61.5	586	28.0	220	10.5
*Social communication platforms are our fears	1188	56.7	735	35.1	171	8.2
*I'm changed for someone if they are affected with COVID-19	1261	60.2	675	32.2	158	7.5
*I will ask for consult from responsible authorities in the event of emergency symptoms	1694	80.9	62	3.0	338	16.1
*Do you think the local authorities will succeed in reducing the spread of disease	1237	59.1	718	34.3	139	6.6
* Do you think the preventive measures of the government were early-produced	1359	64.9	652	31.1	83	4.0
* Do you think the preventive measures of the government were enough	1424	68.0	549	26.2	121	5.8
* Do you think the COVID-19 will last for a long time	1126	53.8	826	39.4	142	6.8
*It is not necessary to take precautionary measures for children and older	1240	59.2	682	32.6	172	8.2
*Isolation of affected people is an effective way to reduce the spread of the COVID-19	1240	59.2	590	28.2	264	12.6
* Isolation and early treatment are the effective ways to control the prevalence of COVID-19	1221	58.3	676	32.3	197	9.4

As seen in table 6, 61.5% of the studied students agree that Palestinian governorate successfully controlled the in-elimination of COVID-19, 28% do not agree and 10.5% do not know, 56.7% agree that social communication platforms are our fears, a higher percentage of students 80.9% would seek assistance from the authorities' responsible if the person or a family member develops symptoms of COVID-19. 68% of students considered that the preventative measures taken by the Palestinian government at the beginning were sufficient and on a timely manner. 53.8% were worried toward COVID-19. 59.2% of them remarkably agree that precautionary measures for children and older are not necessary & thought that COVID-19 preventative measures should be applied by everyone to reduce spread the COVID-19. In addition, 58.3% of the students would seek assistance from the authorities' responsible if the person or a family member develops symptoms of COVID-19.

Table 7. *Correlation between total knowledge, precautionary measures and attitudes regarding COVID-19 disease (n=2094).*

Items	Total students' knowledge				X^2	P
	Satisfactory >60 (n=1890)		Unsatisfactory <60 (n=204)			
	No.	%	No.	%		
Total precautionary measures outside home						
Always 80.2% (n=1680)	1581	83.7	99	48.5	63.73	<0.001**
Occasional 15% (n= 315)	290	15.3	25	12.3		
Never 4.8% (n=99)	19	1.0	80	39.2		
Total attitudes of studied students						
Positive 78.3% (n=1640)	1460	77.2	180	88.2	16.457	0.005*
Negative 21.7% (n= 454)	430	22.8	24	11.8		

* Statistically significant P < 0.05 ** highly statistically significant P < 0.001.

Table 7: there was a statistically highly significant relation between total knowledge and total practices outside home P-value<0.001, and statistically significant relation between total knowledge and total attitudes P-value 0.005.

4. Discussion

University students play an important role in the community. During the COVID-19 pandemic crisis, university students are expected to spread attentiveness of key health and hygiene messages amongst communities. Even staying at home, retaining social distance, wearing face masks, washing hands, etc. are quite a few measures that the governments' health department propagate. So, it is so important that university students across the country have many knowledge and awareness about all aspects of the disease including prevention strategies [18]. Therefore, the study aimed to assess the extent of adherence to the Precautionary measures among University Students in Palestine during COVID-19 Pandemic. [9]

Regarding socio-demographic characteristics of the studied university students, the results of the current study showed that, near to one third of them were in age group 17 to less than 19 years; with the average age 19.56 ± 3.069 years. This finding was similar with the result of [12] in the study about the impact of the COVID-19 epidemic on mental health of undergraduate students in New Jersey, who reported that average age was 19.18 ± 2.9 years old. The finding of the present study illustrated that more than half of studied students were male students, this finding was unsupported by

[18], found that more than three quarter of the studied students were female.

In accordance to knowledge of university students about COVID-19, the current study showed that the great majority of the studied students have correct answers about the meaning of COVID-19, its causes & the treatment. All of them have correct answers about transmission of COVID-19; also, the majority of them have correct answers regarding signs and symptoms & protection methods from infection. A similar study conducted on a Chinese population reported an overall knowledge of 90% [26]. The same table also reported 56.3% of students only know the time for repetition tests, more than one-tenth has incomplete answers, and more than one-third did not know the time. Regarding test to discover the virus & anticoagulation drugs showed that more than three-third of university student have correct answers. In addition, more than two-third have correct answers about timing to give anticoagulation. This result agrees with another study conducted on an Egyptian population comprising 559 participants reported the mean and standard deviation of knowledge score as 16.39±2.63, ranging from 7 to 22, which corresponds to approximately 74.5% overall knowledge among participants regarding COVID-19 Ahmed [2].

Concerning to knowledge of university students according isolation the patients with COVID-19 at home this result reveals that the great majority of studied students have correct answers regarding the determination of the patient who needs isolation at home, meaning of home isolation, types of medication used during isolation, precaution for visitors, and precautions measures for patients with COVID-19 isolation. Furthermore, environmental cleaning & with 80.2% of the studied students had a satisfactory total knowledge regarding followed the precaution measures outside home. Our findings may be the current state of public health awareness and to determine the need for proper dissemination of knowledge and awareness. In addition, the easy access to highly recommended mass media, medical articles and journals available at the university's library which is the major source of information about COVID-19 epidemics.

Regarding knowledge of university students followed precautionary measures outside home, the current study found that the majority of students had a correct answer regarding following the precautionary measures outside home and negligible number of them had incorrect answers regarding followed the precautionary measures for respiratory hygiene to protect from COVID-19. Also, great number of them has correct answers regarding using personal protective equipment. This results was confirmed with Hussain [10], who studied knowledge, attitudes and practices towards COVID-19, and found positive and cautious knowledge towards the COVID-19 epidemic were the vast majority of participants knew the precaution measures for respiratory hygiene and using the personal protective equipment, and avoid contact with others during the rapid rise period of the COVID-19.

In accordance to students' practices for precautionary measures regarding COVID-19 disease outside home, the current study denoted that majority of them always are not found in crowded places, two-third always wear the face mask outside home, Furthermore, more than half of them always clean their hands with antiseptic solutions. Also, more than half of the studied students always use tissue papers to cover mouth and nose during sneezing or coughing, near to three quarter of them always do not visit their relatives during spread of COVID-19. In addition, more than one third of the studied students occasionally use specialized personalized equipment. This result agrees with [13] who said in his study, throughout COVID-19 outbreak, results have shown that two-third of participants did not wear face masks when out in public, whereas fifth did not maintain physical distancing. Compliance with the pandemic restrictions is essential and crucial in this phase, and failure to adhere to preventive measures-even if by a minority-would only lead to uncontrolled spreading of the disease. Positive practices towards COVID -19 pandemic were found to be significantly associated with the gender and major of the precipitant. This suggests may be that the students have a slightly positive preventive behaviour and attitude toward COVID -19. [9]

Regarding the attitudes of university students among COVID-19 pandemic disease, the current study showed that more than two third of the sample agree that Palestinian governorate successfully controlled in-elimination of COVID-19, more than quarter did not agree, approximately two third agree that social communication platforms are our fears, a higher percentage of students would seek assistance from the authorities' responsible if the person or a family member develops symptoms of COVID-19. 68% of students considered that the preventative measures taken by the Palestinian government at the beginning were sufficient and on a timely manner. More than half were worried toward \ COVID-19 and two third of them remarkably thought that precautionary measures for children and older are not necessary & thought that COVID-19 preventative measures should be applied by everyone to reduce spread the COVID-19. As for the preventive measures applied by the government, showed that approximately two third of the students would seek assistance from the authorities' responsible if the person or a family member develops symptoms of COVID-19. Concerning the performance of the local authorities, two thirds of participants considered the authorities' attempts successful in controlling the spread of COVID-19, and around half of them thought that the preventative measures were sufficient. Furthermore, less than a quarter of the participants believed that local authorities have sufficient tools to deal with the suspected cases of COVID-19. These findings disagree with other studies among different communities [26, 17, 3], that might be due to the lack of economic and medical resources and the shortage within the health system compared to developed countries. This indicates the importance of continuous health education that could improve the prevention behaviour toward COVID-19 in society.

5. Conclusion

Based on the current study, the university students have substantial knowledge, practices for precautionary measures, and a positive attitude toward COVID -19. A majority of them also expressed their optimism regarding the control of COVID -19. In addition, there was a statistically highly significant relation between total knowledge and total practices outside home p-value <0.001, and statistically significant relation between total knowledge and total attitudes p-value 0.005.

6. Recommendation

These study findings supported the study research question. Based on the findings of the present study, it was recommended that:

1) The primary action to create awareness among the population can be undertaken through social media, electronic media and other possible means.
2) Continuing Government programs should aim to educate individuals from other sectors of the society to ensure the proper dissemination of knowledge on preventive safety measures, as this will help restrict and control the pandemic.
3) It is the responsibility of the state to take all precautionary measures for the safety of the community and public. There is an urgent need for research to address burden of the COVID-19 pandemic on college students.

Competing Interests

The authors declare no competing interests.

Authors' Contributions

Each author took part in the design of the study, contributed to data collections, participated in writing the manuscript and the authors agree to accept equal responsibility for the accuracy of this paper. All authors approved the final article.

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