University of Kerbala

College of Medicine

Department of Family and Community Medicine

Knowledge, Practice, and Perception about COVID-19 mong Secondary School Students in Kerbala, 2022

A Thesis

Submitted to the Council of College of Medicine -University of Kerbala as Partial Fulfilment for the Degree of Higher Diploma in Family Medicine

By

Kholood Jasim Mohammed Ali

M.B.Ch. B

Supervised by

Asst. Prof. Dr.

Basheer Akeel Al-Ali

Community Medicine Specialist

M.B.Ch. B, A.B.H.S(C/M)

Dr.

Muntather Kasim Mahmood

Family Medicine Specialist

M.B.Ch.B., FABHS. (F.M)

2022 -1444

بِسْمِ اللَّـهِ الرَّحْمَـٰنِ الرَّحِيمِ

(وَقُلِ اعْمَلُوا فَسَيَرَى اللَّهُ عَمَلَكُمْ وَرَسُولُهُ وَالْمُؤْمِنُونَ ۖ وَسَتُرَدُّونَ إِلَىٰ عَالِمِ الْغَيْبِ وَالشَّهَادَةِ فَيُنَبِّئُكُمْ بِمَا كُنْتُمْ تَعْمَلُونَ)

صدق الله العليّ العظيم

(التوبة - 105)

Supervisors Certification

We certify that this thesis titled:-

Assessment of Preventive Measures against Covid 19 among Secondary Schools Students in Kerbala City 2022

Was prepared under our supervision as a partial requirement for the Degree of High Diploma in Family Medicine

Asst. Prof. Dr.

Basheer Akeel Al-Ali

Community Medicine Specialist

M.B.Ch.B.,A.B.H.S(C/M)

Dr.

Muntather Kasim Mahmood

Family Medicine Specialist

M.B.Ch.B.,FABHS.(F.M)

Given the available recommendation, I forward this thesis for debate by the examining committee

Dr. Shahrazad S.Al-Jobori

Head of Family and Community Medicine Department

College of Medicine – University of Kerbala

Committee Certification

We, the examining committee, certify that we have read this thesis and have examined the student (**Kholood Jasim Mohammed Ali**) in its content and, in our opinion, it is adequate as a thesis for the degree of Higher Diploma (2 calendar years)in Family Medicine.

Asst. Prof. Dr.

Shaimaa Abd Al-Latif Khalil
M.B.Ch.B.,A.B.H.S(F/M)

(Member)

Asst. Prof.

Saad Ibrahim Al- Ghabban
M.B.Ch.B, M. Sc (C/M)

(Member)

Asst. Prof. Dr.

Basheer Akeel Al-Ali
M.B.Ch.B.,A.B.H.S(C/M)

(Supervisor/Member)

Dr.

Muntather Kasim Mahmood
M.B.Ch.B.,FABHS.(F/M)

(Supervisor/Member)

Asst. Prof. Dr.

Shahrazad S. Al jobori

M.B.Ch.B., F.I.C.M.S (C/M)

(Chairman)

Approved by

College of Medicine /University of Kerbala

As a thesis for the degree of Higher Diploma in Family Medicine

Prof. Dr. Riyadh Al-Zubaidy

Dean of College of Medicine / University of Kerbala

ACKNOWLEDGEMENTS

"In the name of Allah, the most gracious, the most merciful"

First of all, praise is to God who gave me the strength and health for starting a higher diploma study and enabled me to finish it with this thesis.

Great thanks and gratitude extend to my supervisor, Asst. Prof. ***Dr. Basheer Akeel Al-Ali*** *for his efforts in presenting this thesis in the best possible way by providing valuable advice and scientific information.*

My thanks and gratitude are to my second supervisor, ***Dr. Muntather Kasim Mahmood*** *who provided me with advice and assistance.*

My deepest thank goes to all students who participated in this study, and great thanks to their teachers for making the work much easier.

Dedication

To

My husband, my children,

and

to all looking after my success

List of contents

List of Tables

List of Figures

List of abbreviations

COVID 19	Coronavirus disease 2019
IHCHNS	Iraqi Higher Committee for Health and National Safety
IMOH	Iraqi Ministry of Health
KAP	Knowledge, Attitude, and Practice
SARS	Severe acute respiratory syndrome
WHO	World Health Organization

Abstract

Background: A variety of measures have been put in place in Iraq to slow the rapid spread of the Coronavirus pandemic. However, there is still little information available about students' knowledge and practices during the pandemic of the virus. Therefore, the purpose of this study was to evaluate the knowledge, and practice of students at secondary schools in Kerbala, Iraq toward Covid 19.

Subject and Methods: A cross-sectional study was conducted from the 3rd of February 2022 to the 29th of March 2022, using a self-administrated structured questionnaire among secondary students in their classes, from the center and peripheral, private, and governmental schools in Kerbala. The relationship between students' general knowledge and practices with their demographic characteristics was evaluated using an unpaired t-test and a one-way ANOVA test.

Results: The total percentage of student's accurate knowledge was (72.94%), a higher percentage (81.3%) believed that the infection can be prevented, and a lower percentage goes to the importance of the vaccine, only (50.8%) believed that the corona vaccine can decrease the severity of the infection, (63.5%) of the participants had effective preventive practices in place to avoid COVID-19 infections, and (36.5%) of the study subjects had unfavorable habits regarding COVID-19 infection. Private schools ranked first among the three schools in terms of providing the necessary protection against the virus.

Conclusions: According to study findings, the majority of students have a high level of knowledge and have demonstrated good behavior and proactive preventive behaviors against COVID-19.

The following suggestions are put in light of the study's findings:

Education, simulation, and counseling campaign for secondary school students should be adequate.

Training programs for teachers to ensure that they are well-equipped to instruct students on the prevention and control of the virus.

Chapter One

Introduction

An emerging infectious disease known as Coronavirus was discovered in Wuhan, China, in December 2019. It is a novel coronavirus infection. (Zhu et al., 2020) . Coronaviruses are major human and animal viruses. They can infect humans, livestock, birds, bats, mice, and a variety of other wild species. Coronaviruses can impact the respiratory, gastrointestinal, and hepatic systems, as well as create neurological problems (Bai et al., 2020). The rapid spread of the infection has allowed it to reach every nation on earth. The most prevalent clinical signs of infection are fever and a dry cough. In addition, patients may exhibit myalgia, fatigue, and dyspnea (Chen et al., 2020, Hussein et al., 2020). The infection may be highly contagious before the onset of clinical symptoms and for days after the patients become ill (Yu et al., 2020).

The two primary methods by which COVID-19 is transmitted from person to person are through respiratory transmission and contact with infected surfaces. The virus primarily spreads through saliva droplets or discharge from an infected person's nose during coughing or sneezing (Sharma, 2020). Older adults and those with other medical conditions are more likely to experience serious signs and symptoms (WHO, 2020). Most infected people may have mild or no symptoms, but a small number of people may experience a serious illness, such as acute respiratory distress syndrome or acute myocardial injury (Wu et al., 2020, Team, 2020). The major concern is that asymptomatic and mildly affected patients might remain undiagnosed and yet most easily keep spreading the virus (Carlos et al., 2020, Getachew et al., 2022).

During infection, the viral load changes significantly (Li et al., 2020, Cevik et al., 2021). Viral genome abundance rapidly increases the following infection, and patients can become infectious and begin shedding viral particles 3–5 days before the development of COVID-19 symptoms (Kissler et al., 2020). During these early

stages of infection, the sample from the back of the nasal cavity, known as a nasopharyngeal sample because it requires a long swab to collect, typically yields the highest viral RNA abundance levels (Pan et al., 2020, Wang et al., 2020). However, other, less invasive options, like saliva tests, nasal swabs, or oral swabs, also have detectable levels of viral analytes and can reduce the exposure of the medical staff conducting the sampling (Vogels et al., 2021).

Reverse transcription-quantitative polymerase chain reaction (RT-qPCR) tests, for example, can directly detect the SARS-CoV-2 RNA genome, whereas antigen tests can detect the presence of viral proteins (Mercer and Salit, 2021).

The viral load usually declines gradually after appearing of symptoms. In the later stages of infection, samples from the lower respiratory tract, such as sputum, bronchoalveolar lavage fluid, or tracheal secretions, can produce high viral titers. Even after all symptoms have disappeared for a few weeks, residual viral RNA can still be found. Because it has proven impossible to separate replication-competent viruses from this persistent RNA, these recovered individuals are typically regarded as non-infectious (van Kampen et al., 2021).

Before 2020, no known vaccine or treatment was obtained to prevent the virus (Pandit, 2020). The release of Covid 19 vaccines was announced by the World Health Organization (WHO) in September 2020 (Kaur and Gupta, 2020). The extent to which vaccines protect not only against disease but also against infection and transmission is still being studied, so being immunized does not guarantee complete protection against the disease. The global spread of the new coronal virus strain is the other difficulty. Avoiding exposure is the best way to prevent the condition (Pandit, 2020).

Clinical data from China show that the infection's case fatality rate was 2.3 %. This is less than what was observed for SARS (9.5%), Methicillin-resistant

Staphylococcus aureus, MERS (34.5%), and Influenza A virus subtype H7N9 infection (39%) (Munster et al., 2020).

The WHO states that being knowledgeable about the virus, the illness it causes, and the mode of transmission is the best way to prevent and slow the spread of the infection. To stay healthy, people are also counseled to refrain from touching their faces, mouths, noses, or eyes with unwashed or non-sanitized hands, maintain social distancing, and remain at home. To prevent the virus from spreading, people should also use respiratory etiquette, such as flexing their elbows when coughing and sneezing, covering their mouth and nose with handkerchiefs or tissue paper, and wearing masks (Sharma, 2020, Wadood et al., 2020).

Another way to spread Covid 19, which can remain on surfaces for several hours or days, is by touching surfaces that have been exposed to the virus (Wadood et al., 2021, Wadood et al., 2020).

The WHO classified the coronavirus illness as a worldwide pandemic on March 11, 2020 (Handebo et al., 2021). The WHO advised everyone to assume responsibility and adopt protective behaviors during such a pandemic (Organization, 2018). One of the most frequent reasons for poor adoption of COVID-19 preventative methods is a lack of information about the disease, which may also lead to an increase in both the number of new cases and its dissemination (Zegarra-Valdivia et al., 2020, Handebo et al., 2021).

In Iraq, the first case of COVID-19 was identified in an Iranian resident student in Najaf City on February 24, 2020, according to the Iraqi Ministry of Health (IMOH, 2020). The number of confirmed cases transmitted locally began to increase day by day in other Iraqi cities, including Baghdad, as more cases were subsequently recorded among Iraqis, especially those who had visited Iran (WHO: EMRO, 2020a) (2020) (Khalil et al., 2020).

Accordingly, several decisions have been instituted by the Iraqi Government and Ministry of Health with Kurdistan Regional Government representatives by Committee for Health and National Safety as an attempt to stem the outbreak spread including closing schools, universities, general shopping centers, cinema houses, and banning gathering in public places including all major religious gatherings as well as banned entry of traveler from infected regions, additionally, stricter measures have been implemented, including the closure of all commercial establishments with Iran and Kuwait, the imposition of a curfew in all of Iraq's governorates, restrictions on roaming between governorates, and the suspension of all airport operations (Khalil et al., 2020).

Unfortunately, people were unaware of how serious the situation was until the pandemic reached their homes. Lack of health awareness was a prominent feature of the Iraqi people. Many infected people have avoided treatment due to the social stigma associated with coronavirus and the prevailing belief that health institutions have become a host for transmission. Others held the opinion that the coronavirus pandemic was the result of a political game. As a result, many patients present to hospitals with critical respiratory conditions (Rubin, 2020).

The Iraqi Higher Committee for Health and National Safety (IHCHNS) decided to loosen restrictions on fighting the coronavirus despite the pandemic's ongoing spread by permitting interprovincial travel and reopening borders and crossings in addition to tourist attractions and sporting events (Jadoo et al., 2020).

Knowledge, Attitude, and Practice (KAP) surveys can gather data on what a particular population knows, beliefs, and practices (Hassali et al., 2012). Such information is required because conflicting information and a community's unfavorable attitude toward infectious diseases could cause anxiety and distress (Lin et al., 2011).

Understanding the public's level of awareness regarding knowledge, attitude, and practice toward COVID-19 during this time of crisis requires research on KAP (Zhong et al., 2020, Puspitasari et al., 2020). Community health prevention programs cannot be successful without health education initiatives that increase commitment to preventative actions (Tachfouti et al., 2012, Ajilore et al., 2017).

Initiatives for community-based education have been shown to have a major impact that can help to reduce the population's exposure to illnesses (Person et al., 2004, Bell, 2004).

Infectious disease outbreaks may spread within communities through schools. In the early stages of the outbreak, some nations took drastic action by closing schools (Kuguyo et al., 2020). Teachers are more likely to contract the virus than workers in other occupations because they engage in a disproportionately high number of social interactions (Barrero et al., 2020).

One out of four teachers has a higher risk of contracting COVID-19 infection, according to a previous research study, which found that educational workers were infected with the virus (Kuguyo et al., 2020).

As schools reopen, strict precautionary measures are in place to protect students, teachers, and non-teaching staff within the school and community from COVID-19. In such cases, the reopening of schools brings an opportunity to empower students as agents of change to adopt the recommended positive behaviors to prevent the spread of COVID-19 (Olaniyan et al., 2022, Handebo et al., 2021).

Results of a study conducted among secondary school students on the COVID-19 epidemic in Italy suggested a fairly high level of perception about the risk of contracting the disease. The COVID-19 virus is well-known to most members of the general public (Souli and Dilucca, 2020).

In different studies of secondary school students in Gondar, Northwest Ethiopia 86.3 percent of participants had good knowledge of COVID-19. More than 3/4 (76.5%) of the study participants agreed that the effects of COVID-19 illness are serious when it comes to students' attitudes toward the illness. The majority of participants (71.1%) believed that everyone, regardless of status, should practice COVID-19 prevention measures. Sixty-three percent of the participants took good precautions to avoid getting COVID-19 infections. The majority of the students (76.5%) and those who wore masks when leaving the home (64.8%) agreed that good hygiene practices against COVID-19 included routine hand washing with soap and water (Getawa et al., 2022).

According to a study conducted in Iran, more than 90% of students knew that COVID-19 could manifest itself as a cough and dyspnea, while 98 percent were aware that worsening dyspnea could be a warning sign, and only 68 percent thought the persistent fever was dangerous. 4.6% and 3.8% of respondents said they were unsure of the symptoms and warning signs of a severe illness, respectively. Preventive Measures for COVID-19 (91.5%) Students reported staying at home, (90.6%) using hand sanitizer, (66.8%) maintaining a safe physical distance, (73.4%) donning gloves, (72.7%) donning a facemask, (33.8%) taking vitamin supplements, (23.3%) consuming herbal tea, (1.8%) ingesting Imam-Kazem-drug, and (0.7%) engaging in wet cupping (Hatami et al., 2021).

In a study of students in Bangladesh, more than half (49.78%) had a greater level of understanding about the COVID-19 guidelines, compared to 26.67% who had a moderate level and 23.55% who had a lower level. More pupils (64.27 percent) than other students showed favorable opinions toward the COVID-19 guidelines. This conclusion about students' adherence to COVID-19 criteria is concerning, just like the preceding ones. Only 0.22 percent of the pupils fully complied with the

COVID-19 recommendations. However, the majority of pupils (60.54%) continued to follow COVID-19 recommendations at a lower level (Kumar et al., 2021).

In a study conducted in Beijing, China, students' overall knowledge accuracy rate was 74.1 percent, but their understanding of COVID-19 was not thorough. Only 61.1 percent and 55.1 percent of students knew the virus transmission routes and the susceptible populations, although 95.9 percent of them had learned that asymptomatic virus carriers are contagious. More than 95% of the students had a positive attitude and thought the epidemic would eventually be contained. however, more than 50% of the students were concerned about contracting the disease, and more than 95% of them thought that once affected, the consequences would be severe (Wen et al., 2020).

In Iraq, a study of medical undergraduate students in Baghdad City in 2020 found that more than 90% and three-quarters of students have a positive attitude and practice preventive measures toward COVID-19. More than 50% of students are happy with the contributions local health authorities have made to the fight against COVID-19. Significant differences were seen between the bulk of the demographic characteristics and students' KAP satisfaction (Khalil et al., 2020).

In 2020, a similar study was also carried out among University students in the Kurdistan area. The overall correct answer percentage for the COVID-19 knowledge questions was 75.8%. Students showed a considerable increase in their understanding of infection prevention as compared to the route of transmission, and among females, unmarried individuals, medical students, and those with higher education (Hussein et al., 2020).

Objectives of the study:

1. To examine the knowledge of students enrolled in secondary schools regarding the COVID-19 virus.
2. Identify how the students practice after this world hazard (COVID-19).

Chapter Two

(Subjects and Methods)

2.1. Study design, setting, and time:

A cross-sectional study was conducted from the 3rd of February 2022 to the 29th of March 2022, using a self-administrated structured questionnaire conducted on secondary school students in Kerbala face-to-face in their classes.

2.2. Sample size and sampling technique:

A random sample was used on selecting students from different schools, which were four Governmental schools in the periphery of Holly Kerbala city (Okaz intermediate school for girls, AL-Hussaniaa secondary school for boys, AL-Rabab medium school for girls, Buratha secondary school for girls), three Governmental schools in the center of the city (Ghadat Kerbala secondary school for girls, Abdullah ben Abbas intermediate school for boys, Babel secondary school for boys) & two private schools which belong to Imam Hussain holy shrine (Asbat Al-Warith secondary school for boys, Alrayhana secondary school for girls), these schools are chosen by simple random technique.

Data collection was conducted depending on the days of each grade present because during the pandemic not all grades are available on the same day, so we increased the number of visits to the same school, randomly choosing the class and in each class taken by simple random sampling every 3rd student.

The sample size was measured by using the Raosoft website. Setting a margin of error of 5%, a confidence level of 95%, with a total sample size of 384.

2.3. Inclusion criteria:

Students from grade 7 to grade 12 including all ages and for both genders considered the total sample size needed.

2.4. Exclusion criteria:

1. Students who had an exam at the time of data collection.
2. Students who handed over the questionnaire without answers.

2.5. Ethical consideration:

The survey was conducted after ethical approval from the research ethical committee at the College of Medicine – University of Kerbala and Kerbala Health Directorate, dated (2 February 2022). Verbal consent was obtained from students by signing up on the questionnaire without names to answer freely, in addition to the approval of the institution and they were assured that all data is confidential before administering the survey.

2.6. Data collection:

After providing informed consent to 384 students from the center and peripheral schools, private and governmental, each participant received an anonymous questionnaire sheet. There are some students (n = 45) who were disqualified from the final analysis because their survey forms were not complete or they did not fit the search criteria. The response rate was 89.5%.

The questionnaire that was prepared for this study contains demographic data, knowledge, and practice data besides the preventive measures data of schools(appendix). The data were collected by using a pretested self-administered questionnaire adapted from different kinds of literature (Handebo et al., 2021, Kundu et al., 2021, Jadoo et al., 2020). The questionnaire was reused and corrected

by three experts (appendix). The interview was done in the classes and kept social distance due to the corona pandemic. The internal consistency (Cronbach's alpha) test was used to assess the reliability of the questionnaire items. The survey questionnaire has an interface and four sections with a total of 26 questions. The questionnaire's first section focused on the demographics of the students which included (age, gender, grade, income status of the parents, the education level of the father, and the education level of the mother).

The second section focused on the students' knowledge of COVID-19. It consisted of seven questions, including ones about disease transmission, its symptoms, knowledge of prevention, and opinions regarding vaccination. Responses were given on a Likert scale with five possible outcomes: strongly agree, agree, uncertain, disagree, and strongly disagree, for this score (5,4,3,2,1) respectively, only question 4 the scores to the scale were controversial, the total scores for this section range from (7-35).

The third section is composed of 7 questions related to students' practice of preventive behaviors to protect themselves from being infected includes (intensive hand washing, frequent surface disinfection, wearing a mask, avoiding touching their face, and reinforcing the social distance procedure by avoiding close contact with suspected people and staying at home, taking corona vaccines). This section responds (yes, sometimes, no) with scores (2,1,0) respectively, so the total scores for the third section range from (0 – 14), and the last question responds only yes or no.

The fourth section is composed of 5 questions related to students' satisfaction regarding the preventive measures followed by the teaching staff, the administration staff, and the institution in the dealing with COVID-19 pandemic, those questions included (the number of students in the class, the number of windows, availability of soap, disinfectants, and free masks, cleanliness of the

place). sections responses (yes, sometimes, no) with scores (2,1,0) respectively, the total score ranging from (0-10). To ensure item accuracy and significance, The Arabic translation of the developed English questionnaire came after the English translation.

2.7. Pilot study:

A pilot study has been conducted in one of the periphery schools of Kerbala city, we interviewed 39 students in December 2021, to assess the feasibility of the questionnaire and to overcome any difficult issues that may arise during data collection As a result of this pretest, any suggested changes to the questionnaire were considered accordingly. The average time needs to complete the interview with each participant is about 7-10 minutes.

2.8. Statistical analysis:

Version 24 of the statistical package for social sciences (SPSS) program was used to conduct the statistical analysis. Numbers and percentages were used to represent categorical variables, the mean and standard deviation were used to represent continuous variables. The average Likert scale scores related to student's general knowledge and practice, were computed using the unpaired t-test and one-way ANOVA test, which were the statistical tests used in the current study. Statistical significance was considered as a P value of 0.05 or less.

Chapter Three

(Results)

Results:

A cross-sectional study of 384 students. Their mean age is (15.5 ± 2) years, ranging from 12-21 Years .51% of students are males and 49% of them are females, as in (figure 1).

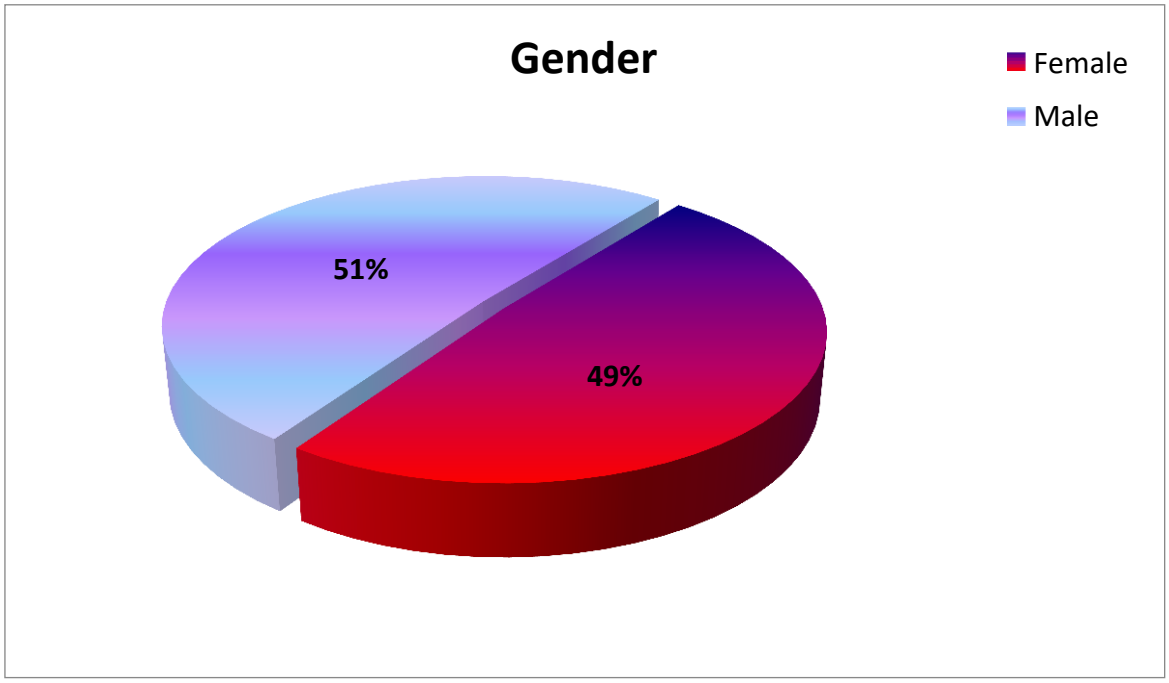

Figure 1: Gender percentage of the study students

51.8% of students are aged 15 and below, 65.6% of them are reported accepted income, 26.3% of students are in the 8th stage and 24.7% are in the 10th stage, 33.3% of students are taken from private, central governmental, and peripheral governmental schools equally. (32%, 31%) of students, their mothers, and fathers with secondary education respectively, as shown in table1.

Table 1: Distribution of students according to their demographic characteristics

Variable	Group	Frequency	Percentage
Income status	Poor	24	6.3
	Accepted	252	65.6
	Good	108	28.1
Stage	7^{th}	53	13.8
	8^{th}	101	26.3
	9^{th}	33	8.6
	10^{th}	95	24.7
	11^{th}	87	22.7
	12^{th}	15	3.9
School types	Private	128	33.33
	Government center	128	33.33
	Government periphery	128	33.33
Father educational level	Illiterate	31	8.1
	Read and write	44	11.5
	Primary	70	18.2
	Secondary	123	32
	College	71	18.5
	Higher education	45	11.7
Mother educational level	Illiterate	15	3.9
	Read and write	40	10.4
	Primary	36	9.4
	Secondary	119	31
	College	110	28.6
	Higher education	64	16.7

Knowledge scores:

According to the baseline responses of students and their scores, the mean total knowledge score was (25.53 ± 3.99), the minimum reported score was 14 and the maximum score was 35. The rate of correct responses for each question ranged from 50.8% (Q2) to 81.3% (Q1) as shown in table 2.

Table 2: Respondents' Answers to COVID-19 Knowledge Items

Knowledge Questions	Strongly not agree	Not Agree	Neutral	Agree	Strongly Agree
Coronavirus can be prevented	12(3.1%)	25(6.5%)	35(9.1%)	173(45.1%)	139(36.2%)
The corona vaccine is an element of prevention	31(8.1%)	75(19.5%)	83(21.6%)	106(27.6%)	89(23.2%)
Coughing, fatigue, and high temperatures are symptoms of coronavirus infection	21(5.5%)	44(11.5%)	80(20.8%)	136(35.4%)	103(26.8%)
An infected person without a high temperature is unable to transmit the infection	21(5.5%)	63(16.4%)	92(24%)	136(35.4%)	72(18.8%)
Crowded places are one of the reasons for the spread of the epidemic	17(4.4%)	27(7%)	33(8.6%)	119(31%)	188(49%)
The necessity of leaving the habit of shaking hands and kissing, using tissues when sneezing, and using hand sanitizer and masks to reduce the transmission of infection	1(4.2%)	25(6.5%)	46(12%)	99(25.8%)	198(51.6%)
I advise others to take the Corona vaccine	33(8.6%)	48(12.5%)	105(27.3%)	121(31.5%)	77(20.1%)

By comparing the mean scores across the baseline characteristics of students, performing an ANOVA test revealed a significant difference in mean knowledge

score within the educational stage, (P=< 0.001), and post hoc tests revealed that the total knowledge of students in the 7th stage was significantly lower than those with other stages, 23.15±4.77.

No significant differences had been found in the mean total knowledge score across all other baseline characteristics of the students, (P>0.05), table 3.

Table 3: Comparison of baseline mean total knowledge score according to baselinecharacteristics of students (n=384)

baseline characteristics of students		*Total Knowledge Score*		*statistical test*	*P value*
		Mean	*standard deviation*		
Age group	< 15 years	25.2	4.17	t =1.66 *df* = 382	0.098
	≥ 15 years	25.88	3.78		
Sex	Male	25.24	4.31	t =1.424 *df* = 382	0.155
	Female	25.82	3.64		
Father education	Illiterate	25.44	3.73	ANOVA F= 0.329 *df* = 5	0.895
	Read and Write	25.33	4.54		
	Primary school	26.01	4.39		
	Secondary school	25.46	4.06		
	College	25.23	3.59		
	Higher education	25.69	3.52		
Mother education	Illiterate	24.13	4.84	ANOVA F= 0.86 *df* = 5	0.508
	Read and Write	25.38	4.44		
	Primary school	26.35	3.55		
	Secondary school	25.77	3.35		
	College	25.39	4.26		
	Higher education	25.25	4.40		
Income	Inadequate	23.84	5.34	ANOVA F= 2.654 *df* = 2	0.072
	Accepted	25.74	3.78		
	Good	25.42	4.07		
Educational stage	7^{th}	23.15	4.77	ANOVA F= 5.66 *df* = 5	**< 0.001***
	8^{th}	25.97	3.75		
	9^{th}	25.85	3.41		
	10^{th}	26.14	4.04		
	11^{th}	25.28	3.49		
	12^{th}	27.67	3.31		
School types	Private	25.70	3.44	ANOVA F= 0.458 *df* = 2	0.633
	Government center	25.26	4.49		
	Government periphery	25.64	4.00		

Students practice score:`

According to the baseline responses of students and their scores, the mean total student practice was (8.89 ± 2.65), the minimum reported score was 1 and the maximum score was 13, table 4.

Table 4: Respondents' Answers to the student practice Items

Student Practice Questions	No	Sometime	Yes
Do you keep wearing a mask in school and crowded areas?	46(12%)	106(27.6%)	229(59.6%)
Do you use hand sanitizer or paws when touching suspicious surfaces?	126(32.8%)	96(25%)	162(42.2%)
Do you Wash your hands with soap for 20 seconds after using the toilet and before and after eating food	41(10.7%)	62(16.1%)	281(73.2%)
Do you avoid student gatherings?	125(32.6%)	118(30.7%)	141(36.7%)
Do you try to stay at home if you have a cough or a high temperature?	57(14.8%)	70(18.2%)	257(66.9%)
Do you cover your mouth or nose with a tissue or your elbow when coughing or sneezing?	26(6.8%)	39(10.2%)	319(83.1%)
Have you been vaccinated against the Coronavirus?	285(74.2%)	-	99(25.8%)

By comparing the mean scores across the baseline characteristics of students, it had been found that female students had higher preventive scores than males, (P= 0.001).

ANOVA test revealed a significant difference in the mean total practice score of the students with the father's education (P=< 0.001), post hoc tests revealed that total practice scores of students with illiterate, read and write was significantly higher than those with other levels, (9.34±2.65, 10.29±1.98) respectively.

A significant difference in the mean total practice score of students within the mother education (P=0.001), post hoc tests revealed that total practice scores of students with the illiterate, read and write was significantly higher than those with other levels, (9.67±2.94, 10.05±2.46) respectively.

Also, a significant difference in the mean total practice score of students within the educational stages (P=0.025), and post hoc tests revealed that the total practice scores of students in the 12^{th} stage were significantly higher than those with other stages, (10.13±2.64). Lastly significant difference in the mean total practice score of the student within the school types (P= <0.001), post hoc tests revealed that the total practice scores of students with the government periphery, was significantly higher than those with other schools types,(9.95±2.19), as shown in table5.

Table 5: Comparison of baseline mean total student practice score according to baselinecharacteristics of students (n=384)

baseline characteristics of students		*Total Students practice score*		*statistical test*	*P value*
		Mean	*standard deviation*		
Age group	< 15 years	8.97	2.58	t =0.603 *df* = 382	0.547
	≥ 15 years	8.8	2.74		
Sex	Male	8.44	2.82	t =3.383 *df* = 382	**0.001***
	Female	9.34	2.4		
Father education	Illiterate	9.34	2.65	ANOVA F= 7.681 *df* = 5	**<0.001***
	Read and Write	10.29	1.98		
	Primary school	9.56	2.29		
	Secondary school	8.83	2.75		
	College	8.19	2.75		
	Higher education	7.44	2.37		
Mother education	Illiterate	9.67	2.94	ANOVA F= 4.02 *df* = 5	**0.001***
	Read and Write	10.05	2.46		
	Primary school	9.68	2.39		
	Secondary school	8.88	2.66		
	College	8.35	2.57		
	Higher education	8.38	2.69		
Income	Inadequate	8.7	2.48	ANOVA F= 0.237 *df* = 2	0.789
	Accepted	8.8	2.7		
	Good	9.03	2.6		
Educationalstage	7^{th}	9.42	1.98	ANOVA F= 2.594 *df* = 5	**0.025***
	8^{th}	8.91	2.73		
	9^{th}	8.70	2.60		
	10^{th}	9.09	2.84		
	11^{th}	8.16	2.60		
	12^{th}	10.13	2.64		
School types	Private	7.59	2.44	ANOVA F= 30.117 *df* = 2	**<0.001***
	Government center	9.12	2.75		
	Government periphery	9.95	2.19		

School preventive practice score:

According to baseline responses of students about school preventive practice and their scores, the mean total school preventive practice was (6.22 ± 2.81), the

minimum reported score was 0 and the maximum score was 10 out of 10 (table 6).

Table 6: Respondents' Answers to school preventive practice Items

School Preventive Practice	No	Sometime	Yes
Is the number of students in a class acceptable within the social distancing plan?	128(33.3%)	66(17.2%)	190(49.5%)
Is there a good number of ventilation outlets inside the classroom	54(14.1%)	50(13%)	280(72.9%)
Does the school administration provide masks or hand sanitizer for free for students?	132(34.4%)	75(19.5%)	177(46.1%)
Is there daily cleaning of the classroom and containers for throwing dirt inside the classroom	83(21.6%)	89(23.2%)	212(55.2%)
Is soap or hand washing liquid available inside the water cycle?	163(42.4%)	41(10.7%)	180(46.9%)

A significant difference in the mean total school practice score of the student within the school types (P= <0.001), post hoc tests revealed total practice scores of students in the private school, was significantly higher than those with other schools types, (7.77±2.19), as shown in table7.

Table 7: Comparison between School types according to providing an appropriate protective environment against the virus

		Total school practice score		*statistical test*	*P value*
		Mean	*standard deviation*		
School types	Private	7.77	2.19	ANOVA F= 34.308 *df* = 2	**<0.001***
	Government canter	5.38	2.92		
	Government periphery	5.50	2.62		

Chapter Four

(Discussion)

Discussion:

The COVID-19 pandemic contributes to significant global challenges and burdens, including the need to close schools, political and economic crises, a burden on healthcare providers, and significant public outcry (Getawa et al., 2022). Adolescents represent one-third of the Iraqi population and in a pandemic such as COVID-19, the knowledge, and practices of this population can affect the future spread of the disease.

In this study, the level of knowledge about COVID-19 was assessed regarding the mode of transmission, clinical manifestations, and preventive measures of a sample of students. A higher percentage (81.3%) believes that the infection can be prevented, and the lower percentage goes to the importance of the vaccine, only (50.8%) believed that the Covid 19 vaccine can decrease the severity of the infection, (51.6%) advise others to take the vaccine. We also found that there is an association between the knowledge and the grade of the student, the total knowledge of students in the first stage was significantly lower than those in other stages, and the knowledge increase gradual with the progress of the stages of education; for stage(1) the knowledge percentage was (66.14%) while for stage (6) was (79.05%).

In the current study, the total percentage of student's knowledge is (72.94%), found to be lower than studies conducted in china (Wen et al., 2020) and Ethiopia (Getawa et al., 2022) which showed 74.1 percent and 86.3 percent of students, respectively, had good knowledge about COVID-19. However, this knowledge level is regarded as acceptable and may have been attained because there was enough time to learn about the disease. Additionally, the WHO's designation of the illness as a pandemic may have also improved the students' knowledge (Thompson, 2020).

There are no differences between the knowledge of the students from the two areas (urban, and rural), this is because the internet and social media spread information and the news easily to everyone and anywhere. This result is considered a piece of good news to us because this means that our countryside is thriving and evolving, not seen by another research done in Ethiopia (Getawa et al., 2022) found that the highest knowledge level among the study participants was significantly correlated with an urban residence.

Compared to the study conducted in Ethiopia, a higher percentage of participants (63.5%) had effective preventive practices in place to avoid COVID-19 infections(Getawa et al., 2022), the majority of the students agreed to practice good hygiene against COVID-19, such as routine hand washing with soap and water (73.2%) and wearing masks when leaving the house (59.6%).

This research supports population-based studies conducted in Beijing (Wen et al., 2020), and Italy(Souli and Dilucca, 2020).

The WHO's recommendations may be responsible for this efficient preventive measure, the WHO has suggested routine hand washing, donning a face mask, and avoiding social contact as ways to stop the spread of the COVID-19 infection. (Guinan et al., 2002, Cheng and Khan, 2020). Wearing a face mask is highly recommended to prevent infection, according to some evidence (Feng et al., 2020).

In the meantime, (36.5%) of the study subjects had unfavorable habits regarding COVID-19 infection. (74.2%) of the participants who do not vaccinate against the virus, and (32.6%) do not avoid student gatherings or overcrowded places only (36.7%) do. This supports the previous research indicating that adolescents are more likely to engage in risk-taking behaviors (Leather, 2009).

There is a significant association between practice and students' gender; (60.28%) of good practice students are females. Our finding is consistent with that of a study conducted in China (Zhong et al., 2020) and a study conducted in Indonesia

(Muslih et al., 2021) that discovered a significant correlation between men and potentially risky COVID-19 behavior, such as visiting a crowded area during the pandemic or forgoing the use of a mask when leaving the house.

There is a significant difference in the mean total practice score of students regarding their fathers' and mothers' education. The total practice scores of the students whose parents were illiterate or just read and write were significantly higher than those students whose parents had high education levels. There were many rumors in Iraq, and most of them say that Corona is a hoax and a political game that illiterate people spend most of their time earning their living away from social media and its rays, and as we know, children are mirrors of their parents, especially at the time of the imposed ban, so they became less affected and more committed.

The total practice scores of students within the sixth stage are (72.35%), which was significantly higher than those with other stages, this finding is expected because the older age group is more aware of the seriousness of the disease, and its complications, which can distinguish rumors.

lastly, we found that students within the government periphery schools significantly have higher practice scores than those with other school types, (71.07%). This is a possibility because of rural areas where customs and traditions abound, so we see children more obedient and respectful to their parents at home and the teaching staff inside the school.

Concerning the preventive methods used by the teaching staff and teaching institutions, we found that private schools ranked first among the three schools in terms of providing the necessary protection against the virus, with a rate of 77.7%, governmental schools in the periphery rankled second at 53.8%, and the third one is the governmental schools in the center of the city 55%. This is due to the intense competition among Kerbala schools. Private schools are trying to attract students

through cleanliness, arrangement, organization, and attention to the scientific, educational, and health aspects, so they win first place with the satisfaction of students.

The findings of the study could show that students have adequate expertise to serve as significant consultants to the community's efforts to support regional health authorities to stop the ongoing COVID-19 outbreak from spreading for at least inside the city of Kerbala.

Limitations of the study:

1. The time for data collection was short before the mid-year exams, so we had to stop for a month until the exams and the holiday ended.
2. Because of Covid-19, not all the stages exist, so it requires more effort and time to collect data, and sometimes the students are busy with celebrations or daily exams.
3. There is a problem within private schools. They were not satisfied with the approvals of the Ministry of Education, but rather required work on new approvals from their owners and headmasters, and this required additional effort and time.

Chapter Five

(Conclusions and Recommendations)

Conclusions:

1. According to study findings, the majority of students have a high level of knowledge and have demonstrated good behavior and proactive preventive behaviors against COVID-19. The students, however, have a moderate level of risk perception and satisfaction with the defeating role played by the educational institutions, teaching staff, and local health authorities.
2. Private schools are better than other schools in terms of cleanliness and provision of protective means. Peripheral governmental school students are better in terms of following and adhering to preventive measures.
3. We also found that the knowledge of students with the 7^{th} stage was significantly lower than those with other stages.
4. Females gender and students with illiterate or read-and-write parents are more use of preventive measures.
5. We noticed that there's little information about Covid 19 vaccine, in terms of its importance, and in terms of taking the vaccine.

Recommendations:

The following suggestions are put forth in light of the study's findings:

1. COVID-19 education, simulation, and counseling campaign for secondary school students should be adequate.
2. Training programs for teachers to ensure that they are well-equipped to instruct students on the prevention and control of COVID-19
3. A training program for nurses and other health care providers will prepare them to impart COVID-19 knowledge and skills to secondary school students both orally and in writing.
4. Promoting collaboration between educational institutions, healthcare professionals, and health personnel is crucial for teaching secondary school students about COVID-19, which will help raise awareness, stop the spread of the disease, and aid in prevention and control.

Chapter Six

(References)

References:

AJILORE, K., ATAKITI, I. & ONYENANKEYA, K. 2017. College students' knowledge, attitudes and adherence to public service announcements on Ebola in Nigeria: Suggestions for improving future Ebola prevention education programmes. *Health Education Journal,* 76**,** 648-660.

BAI, Y., YAO, L., WEI, T., TIAN, F., JIN, D.-Y., CHEN, L. & WANG, M. 2020. Presumed asymptomatic carrier transmission of COVID-19. *Jama,* 323**,** 1406-1407.

BARRERO, J. M., BLOOM, N. & DAVIS, S. J. 2020. COVID-19 is also a reallocation shock. National Bureau of Economic Research.

BELL, D. M. 2004. Public health interventions and SARS spread, 2003. *Emerging infectious diseases,* 10**,** 1900.

CARLOS, W. G., DELA CRUZ, C. S., CAO, B., PASNICK, S. & JAMIL, S. 2020. Novel Wuhan (2019-nCoV) Coronavirus. *Am J Respir Crit Care Med***,** P7-P8.

CEVIK, M., TATE, M., LLOYD, O., MARAOLO, A. E., SCHAFERS, J. & HO, A. 2021. SARS-CoV-2, SARS-CoV, and MERS-CoV viral load dynamics, duration of viral shedding, and infectiousness: a systematic review and meta-analysis. *The lancet microbe,* 2**,** e13-e22.

CHEN, N., ZHOU, M., DONG, X., QU, J., GONG, F., HAN, Y., QIU, Y., WANG, J., LIU, Y. & WEI, Y. 2020. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. *The lancet,* 395**,** 507-513.

CHENG, S. O. & KHAN, S. 2020. Europe's response to COVID-19 in March and April 2020-A letter to the editor on "World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19)"(Int J Surg 2020; 76: 71-6). *International Journal of Surgery (London, England),* 78**,** 3.

FENG, S., SHEN, C., XIA, N., SONG, W., FAN, M. & COWLING, B. J. 2020. Rational use of face masks in the COVID-19 pandemic. *The Lancet Respiratory Medicine,* 8**,** 434-436.

GETACHEW, T., GIRMA, E., SHEWANGIZAW, M., CHURKO, C., GLAGN, M. & GETAHUN, F. 2022. Risk Perception and Behavioral Response of Teachers to COVID-19 in Southern Ethiopia, 2021. *Psychology Research and Behavior Management,* 15**,** 623.

GETAWA, S., AYNALEM, M., BAYLEYEGN, B. & ADANE, T. 2022. Knowledge, attitude and practice towards COVID-19 among secondary school students in Gondar town, Northwest Ethiopia. *PloS one,* 17**,** e0268084.

GUINAN, M., MCGUCKIN, M. & ALI, Y. 2002. The effect of a comprehensive handwashing program on absenteeism in elementary schools. *American journal of infection control,* 30**,** 217-220.

HANDEBO, S., ADUGNA, A., KASSIE, A. & SHITU, K. 2021. Determinants of COVID-19-related knowledge and preventive behaviours among students in reopened secondary schools: cross-sectional study. *BMJ open,* 11**,** e050189.

HASSALI, M. A., SHAFIE, A. A., SALEEM, F., FAROOQUI, M. & ALJADHEY, H. 2012. A cross sectional assessment of knowledge, attitude and practice towards Hepatitis B among healthy population of Quetta, Pakistan. *BMC Public Health,* 12**,** 1-8.

HATAMI, H., ABBASI-KANGEVARI, M., MALEKPOUR, M.-R. & KOLAHI, A.-A. 2021. Knowledge, attitudes, and safety practices about COVID-19 among high school students in iran during the first wave of the pandemic. *Frontiers in Public Health,* 9.

HUSSEIN, N. R., NAQID, I. A., JACKSI, K. & ABDI, B. A. 2020. Assessment of knowledge, attitudes, and practices toward COVID-19 virus among university students in Kurdistan region, Iraq: Online cross-sectional study. *Journal of family medicine and primary care,* 9**,** 4809.

JADOO, S. A. A., ALHUSSEINY, A. H., YASEEN, S. M., AL-SAMARRAI, M. A. M., AL-DELAIMY, A. K., ABED, M. W. & HASSOONI, H. R. 2020. Knowledge, attitude, and practice toward COVID-19 among Iraqi people: a web-based cross-sectional study. *Journal of Ideas in Health,* 3**,** 258-265.

KAUR, S. P. & GUPTA, V. 2020. COVID-19 Vaccine: A comprehensive status report. *Virus research,* 288**,** 198114.

KHALIL, N. S., AL-YUZBAKI, D. B. & TAWFEEQ, R. S. 2020. COVID-19 knowledge, attitude and practice among medical undergraduate students in Baghdad City. *EurAsian Journal of BioSciences,* 14**,** 4179-4186.

KISSLER, S. M., TEDIJANTO, C., GOLDSTEIN, E., GRAD, Y. H. & LIPSITCH, M. 2020. Projecting the transmission dynamics of SARS-CoV-2 through the postpandemic period. *Science,* 368**,** 860-868.

KUGUYO, O., KENGNE, A. P. & DANDARA, C. 2020. Singapore COVID-19 pandemic response as a successful model framework for low-resource health care settings in Africa? *Omics: a journal of integrative biology,* 24**,** 470-478.

KUMAR, B., PINKY, S. D. & NURUDDEN, A. M. 2021. Knowledge, attitudes and practices towards COVID-19 guidelines among students in Bangladesh. *Social Sciences & Humanities Open,* 4**,** 100194.

KUNDU, S., AL BANNA, M., SAYEED, A., BEGUM, M. R., BRAZENDALE, K., HASAN, M. T., HABIBA, S. J., ABID, M. T., KHAN, M. & CHOWDHURY, S. 2021. Knowledge, attitudes, and preventive practices toward the COVID-

19 pandemic: an online survey among Bangladeshi residents. *Journal of Public Health*, 1-15.

LEATHER, N. C. 2009. Risk-taking behaviour in adolescence: a literature review. *Journal of Child Health Care,* 13**,** 295-304.

LI, Q., GUAN, X., WU, P., WANG, X., ZHOU, L., TONG, Y., REN, R., LEUNG, K. S., LAU, E. H. & WONG, J. Y. 2020. Early transmission dynamics in Wuhan, China, of novel coronavirus–infected pneumonia. *New England journal of medicine*.

LIN, Y., HUANG, L., NIE, S., LIU, Z., YU, H., YAN, W. & XU, Y. 2011. Knowledge, attitudes and practices (KAP) related to the pandemic (H1N1) 2009 among Chinese general population: a telephone survey. *BMC infectious diseases,* 11**,** 1-9.

MERCER, T. R. & SALIT, M. 2021. Testing at scale during the COVID-19 pandemic. *Nature Reviews Genetics,* 22**,** 415-426.

MUNSTER, V. J., KOOPMANS, M., VAN DOREMALEN, N., VAN RIEL, D. & DE WIT, E. 2020. A novel coronavirus emerging in China—key questions for impact assessment. *New England Journal of Medicine,* 382**,** 692-694.

MUSLIH, M., SUSANTI, H. D., RIAS, Y. A. & CHUNG, M.-H. 2021. Knowledge, attitude, and practice of indonesian residents toward covid-19: A cross-sectional survey. *International journal of environmental research and public health,* 18**,** 4473.

OLANIYAN, O. T., DARE, A., OKOLI, B., ADETUNJI, C. O., IBITOYE, B. O., OKOTIE, G. E. & EWEOYA, O. 2022. Increase in SARS-CoV-2 infected biomedical waste among low middle-income countries: environmental sustainability and impact with health implications. *Journal of basic and clinical physiology and pharmacology,* 33**,** 27-44.

ORGANIZATION, W. H. 2018. *Managing epidemics: key facts about major deadly diseases*, World Health Organization.

PAN, Y., ZHANG, D., YANG, P., POON, L. L. & WANG, Q. 2020. Viral load of SARS-CoV-2 in clinical samples. *The Lancet infectious diseases,* 20**,** 411-412.

PANDIT, R. 2020. Basic protective measures against the new coronavirus pandemic–COVID-19. *J Manag Res Anal,* 7**,** 1-2.

PERSON, B., SY, F., HOLTON, K., GOVERT, B. & LIANG, A. 2004. Fear and stigma: the epidemic within the SARS outbreak. *Emerging infectious diseases,* 10**,** 358.

PUSPITASARI, I. M., YUSUF, L., SINURAYA, R. K., ABDULAH, R. & KOYAMA, H. 2020. Knowledge, attitude, and practice during the COVID-19 pandemic: a review. *Journal of multidisciplinary healthcare,* 13**,** 727.

RUBIN, A. J. 2020. Stigma hampers Iraqi efforts to fight the coronavirus. *The New York Times*.

SHARMA, A. K. 2020. Novel coronavirus disease (COVID-19). *Resonance,* 25**,** 647-668.

SOULI, D. & DILUCCA, M. 2020. Knowledge, attitude and practice of secondary school students toward COVID-19 epidemic in Italy: a cross selectional study. *BioRxiv*.

TACHFOUTI, N., SLAMA, K., BERRAHO, M. & NEJJARI, C. 2012. The impact of knowledge and attitudes on adherence to tuberculosis treatment: a case-control study in a Moroccan region. *Pan African Medical Journal*, 12.

TEAM, E. 2020. The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19)—China, 2020. *China CDC Weekly,* 2**,** 113.

THOMPSON, R. 2020. Pandemic potential of 2019-nCoV. *The Lancet Infectious Diseases,* 20**,** 280.

VAN KAMPEN, J. J., VAN DE VIJVER, D. A., FRAAIJ, P. L., HAAGMANS, B. L., LAMERS, M. M., OKBA, N., VAN DEN AKKER, J. P., ENDEMAN, H., GOMMERS, D. A. & CORNELISSEN, J. J. 2021. Duration and key determinants of infectious virus shedding in hospitalized patients with coronavirus disease-2019 (COVID-19). *Nature communications,* 12**,** 1-6.

VOGELS, C. B., WATKINS, A. E., HARDEN, C. A., BRACKNEY, D. E., SHAFER, J., WANG, J., CARABALLO, C., KALINICH, C. C., OTT, I. M. & FAUVER, J. R. 2021. SalivaDirect: A simplified and flexible platform to enhance SARS-CoV-2 testing capacity. *Med,* 2**,** 263-280. e6.

WADOOD, M. A., MAMUN, A., RAFI, M. A., ISLAM, M. K., MOHD, S., LEE, L. L., AIK, S. & HOSSAIN, M. G. 2021. Survey on Knowledge, Attitude, Perception and Practice among University Students during the COVID-19 Pandemic. *SciMedicine Journal,* 3**,** 67-79.

WADOOD, M. A., MAMUN, A., RAFI, M. A., KAMRUL ISLAM, M., MOHD, S., LEE, L. L. & HOSSAIN, M. G. 2020. Knowledge, attitude, practice and perception regarding COVID-19 among students in Bangladesh: Survey in Rajshahi University. *Medrxiv*.

WANG, W., XU, Y., GAO, R., LU, R., HAN, K., WU, G. & TAN, W. 2020. Detection of SARS-CoV-2 in different types of clinical specimens. *Jama,* 323**,** 1843-1844.

WEN, F., MENG, Y., CAO, H., XIA, J., LI, H., QI, H., MENG, K. & ZHANG, L. 2020. Knowledge, attitudes, practices of primary and middle school students at the outbreak of COVID-19 in Beijing: A cross-sectional online study. *medRxiv*.

WHO, C. O. 2020. World health organization. *Responding to Community Spread of COVID-19. Reference WHO/COVID-19/Community_Transmission/2020.1*.

WU, D., WU, T., LIU, Q. & YANG, Z. 2020. The SARS-CoV-2 outbreak: what we know. *International Journal of Infectious Diseases*, 94**,** 44-48.

YU, P., ZHU, J., ZHANG, Z. & HAN, Y. 2020. A familial cluster of infection associated with the 2019 novel coronavirus indicating possible person-to-person transmission during the incubation period. *The Journal of infectious diseases*, 221**,** 1757-1761.

ZEGARRA-VALDIVIA, J., VILCA, B. N. C. & GUERRERO, R. J. A. 2020. Knowledge, perception and attitudes in Regard to COVID-19 Pandemic in Peruvian Population.

ZHONG, B.-L., LUO, W., LI, H.-M., ZHANG, Q.-Q., LIU, X.-G., LI, W.-T. & LI, Y. 2020. Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *International journal of biological sciences*, 16**,** 1745.

ZHU, N., ZHANG, D., WANG, W., LI, X., YANG, B., SONG, J., ZHAO, X., HUANG, B., SHI, W. & LU, R. 2020. A novel coronavirus from patients with pneumonia in China, 2019. *New England journal of medicine*.

Appendix

جامعة كربلاء
كلية الطب
فرع طب الأسرة المجتمع

إلى / الدكتور احمد مهدي حسن المحترم

م/ تقييم استبانة

تحية طيبة

نظرا للمكانة العلمية والخبرة التي تتمتعون بها نرفق لكم استمارة استبانة مقترحة لرسالة طالبة الدبلوم العالي في طب الاسرة د. خلود جاسم محمد علي المبين عنوانها في ادناه، راجين من جنابكم الاطلاع عليها واعطاء ملاحظاتكم القيمة بشأنها ... مع فائق التقدير

Assessment of Preventive Measures against Covid 19 among Secondary Schools Students in Kerbala City ,in 2022

أ.م. د.علي عبد الرضا أبو طحين
استشاري طب الاسرة
2022 / ٣/١٦

عنوان الرسالة:

Assessment of Preventive Measures against Covid 19 among Secondary Schools Students in Kerbala City ,in 2022

اهداف الرسالة:

1- Is to identify how students react after this world hazard (COVID-19).
2- To identify how they behaviors changed, if they become more educated? more use of preventable measurement and depends on it to pass this pandemic rather than seek only treatment.
3- Assessment the level of knowledge they reached, copy the update or not.

الملاحظات:

اسم الخبير :.....

اللقب العلمي :.....

مكان العمل :.....

عدد سنوات الخبرة :.....

التوقيع :.....

جامعة كربلاء
كلية الطب
فرع طب الأسرة المجتمع

إلى / الدكتور ستار جبار المحترم

م/ تقييم استبانة

تحية طيبة

نظرا للمكانة العلمية والخبرة التي تتمتعون بها نرفق لكم استمارة استبانة مقترحة لرسالة طالبة الدبلوم العالي في طب الاسرة د. خلود جاسم محمد علي المبين عنوانها في ادناه، راجين من جنابكم الاطلاع عليها واعطاء ملاحظاتكم القيمة بشأنها ... مع فائق التقدير

Assessment of Preventive Measures against Covid 19 among Secondary Schools Students in Kerbala City ,in 2022

أ.م. د.علي عبد الرضا أبو طحين
استشاري طب الاسرة
2022 / 3 / 9

جامعة كربلاء
كلية الطب
فرع طب الأسرة المجتمع

إلى / الدكتور هيثم رؤوف المحترم

م/ تقييم استبانة

تحية طيبة

نظرا للمكانة العلمية والخبرة التي تتمتعون بها نرفق لكم استمارة استبانة مقترحة لرسالة طالبة الدبلوم العالي في طب الاسرة د. خلود جاسم محمد علي المبين عنوانها في ادناه، راجين من جنابكم الاطلاع عليها واعطاء ملاحظاتكم القيمة بشأنها ... مع فائق التقدير

Assessment of Preventive Measures against Covid 19 among Secondary Schools Students in Kerbala City ,in 2022

أ.م. د.علي عبد الرضا أبو طحين
استشاري طب الاسرة
2022 / 3/9

عنوان الرسالة:

Assessment of Preventive Measures against Covid 19 among Secondary Schools Students in Kerbala City ,in 2022

اهداف الرسالة:

1- Is to identify how students react after this world hazard (COVID-19).
2- To identify how they behaviors changed, if they become more educated? more use of preventable measurement and depends on it to pass this pandemic rather than seek only treatment.
3- Assessment the level of knowledge they reached, copy the update or not.

الملاحظات:

اسم الخبير :.....

اللقب العلمي :.....

مكان العمل :.....

عدد سنوات الخبرة :.....

التوقيع :.....

٢٠٢٢/٧/٩

Republic of Iraq
The Province of Holy Karbala
Directorate General of Education
in Holy Karbala Province

جمهورية العراق
محافظة كربلاء المقدسة
المديرية العامة للتربية
في محافظة كربلاء المقدسة
القسم/ الاعداد والتدريب/ البحوث والدراسات

العـــــــدد/ ١٢٨٦٩
التـــاريـــــخ/ ٣/ ١ /٢٠٢٢

الى إدارات المدارس الثانوية الحكومية والاهلية في المحافظة كافة

م/ تسهيل مهمة

يرجى تسهيل مهمة طالبة الدبلوم العالي (**خلود جاسم محمد علي**) في جامعة كربلاء/ كلية الطب لإنجاز متطلبات بحثها الموسوم (assessment of preventive measures towards covid-19 among secondary schools students in Kerbela , 2022)

خدمة للعلم والمعرفة

مع التقديـــــر

سليم احمد عبد الكريم
معاون المدير العام للشؤون الادارية

نسخه منه إلى :-

- مكتب السيد المدير العام/ للتفضل بالعلم.....مع التقدير
- السيد المعاون الفني/ للتفضل بالعلم.....مع التقدير
- قسم الاعداد والتدريب / شعبة البحوث والدراسات/ ب ٢ نسخ مع المرفق
- قسم التخطيط التربوي/ للغرض نفسه أعلاه .....مع التقدير
- الأرشيف الالكتروني وبريد المدارس
- الملفة العامة

استبرق ٢٠٢٢/٣/١

www.karbalaedu.org
karbala_education@yahoo.com
العنوان / كربلاء المقدسة – حي البلدية
هـ -(٣١٠٠٢٩ – ٣١٠٠٢٧)

البيانات الشخصية

الجنس : انثى ○ ذكر ○

العمر : ○

المستوى التعليمي : صف اول متوسط ○ ثاني ○ ثالث ○ رابع ○ خامس ○ سادس ○

الحالة الاقتصادية : ضعيف ○ متوسط ○ جيد ○

مستوى تعليم الام : امي ○ يقرا ويكتب ○ ابتدائي ○ ثانوي ○ كليه ○ دراسات عليا ○

مستوى تعليم الاب: امي ○ يقرا ويكتب ○ ابتدائي ○ ثانوي ○ كليه ○ دراسات عليا ○

المدارس التي تنتمي لها هي : مدرسة أهلية ○ مدرسة حكومية في مركز المدينة ○ مدرسة حكومية في أطراف المدينة ○

بيانات حول مدى معرفة الطلبة حول وباء كورونا المستجد

ان فيروس كورونا يمكن الوقاية منه أوافق بشده ○ اوافق ○ محايد ○ لا اوافق ○ لا ا أوافق بشده ○

ان لقاح كورونا هو من عناصر الوقاية اوافق بشده ○ اوافق ○ محايد ○ لا اوافق ○ لا أوافق بشده ○

ان السعال والذحول وارتفاع درجات الحرارة من اعراض الإصابة بفيروس كورونا

اوافق بشده ○ اوافق ○ محايد ○ لا اوافق ○ لا أوافق بشده ○

ان الشخص المصاب بدون ارتفاع درجة الحرارة هو غير قادر على نقل العدوى

اوافق بشده ○ اوافق ○ محايد ○ لا اوافق ○ لا أوافق بشده ○

ان الأماكن المزدحمة هيه سبب من أسباب انتشار الوباء اوافق بشده ○ اوافق ○ محايد ○ لا اوافق ○ لا أوافق بشده ○

ضرورة ترك عادة التصافح والتقبيل واستخدام المناديل عند العطاس واستخدام معقم اليدين والكمامة للحد من نقل العدوى

اوافق بشده ○ اوافق ○ محايد ○ لا اوافق ○ لا أوافق بشده ○

انا انصح الاخرين بإخذ لقاح كورونا اوافق بشده ○ اوافق ○ محايد ○ لا اوافق ○ لا أوافق بشده ○

بيانات حول الطرق الوقائية المدرسية المتبعة من قبل الطلبة للحد من الوباء

هل تواظب على لبس الكمامة في المدرسة والمناطق المزدحمة نعم ○ كلا ○ نوعا ما ○

هل تستخدم معقم اليدين او الكفوف عند لمس الاسطح المشبوهة نعم ○ كلا ○ نوعا ما ○

أواظب على غسل اليدين بالصابون لمدة 20 ثانية بعد استخدام المرحاض وقبل وبعد اكل الطعام نعم ○ كلا ○ نوعا ما ○

هل تتجنب التجمعات الطلابية نعم ○ كلا ○ نوعا ما ○

هل تحاول البقاء في المنزل إذا تعرضت للسعال او ارتفاع في درجة الحرارة نعم ○ كلا ○ نوعا ما ○

هل تغطي فمك او انفك بمنديل او مرفق اليد عند السعال او العطاس نعم ○ كلا ○ نوعا ما ○

هل لقحت ضد وباء كورونا نعم ○ كلا ○

بيانات حول الطرق الوقائية المدرسية المتبعة من قبل الكادر التدريسي والإداري للحد من الوباء

هل عدد الطلاب داخل الصف يعتبر مقبول ضمن خطة التباعد الاجتماعي	نعم ◯	كلا ◯	نوعا ما ◯
هل يوجد عدد منافذ تهوية جيد داخل الصف	نعم ◯	كلا ◯	نوعا ما ◯
هل توفر إدارة المدرسة الكمامات او مادة تعقيم الايدي مجانا للطلبة	نعم ◯	كلا ◯	نوعا ما ◯
هل يوجد تنظيف يومي للصفوف وحاويات لرمي الأوساخ داخل الصف	نعم ◯	كلا ◯	نوعا ما ◯
هل تتوفر مادة الصابون او سائل غسل الايدي داخل الصحيات	نعم ◯	كلا ◯	نوعا ما ◯

هل لديك أي تعليق او مقترح؟

شكرا جزيلا

الملخص

الخلفية: تم اتخاذ مجموعة متنوعة من الإجراءات في العراق لإبطاء الانتشار السريع لوباء كورونا. ومع ذلك ، لا يزال هناك القليل من المعلومات المتاحة حول معرفة الطلاب وممارساتهم تجاه جائحة كورونا. لذلك ، كان الغرض من هذه الدراسة هو تقييم المعرفة والسلوك والعوامل ذات الصلة ، بين طلاب المدارس الثانوية في مدينة كربلاء العراق ، تجاه وباء كورونا

الطريقة: أجريت دراسة مقطعية في الفترة من 3 فبراير 2022 إلى 29 مارس 2022 ، باستخدام استبيان منظم ذاتياً وتم ملؤه من قبل طلاب المرحلة الثانوية في فصولهم. تم تقييم العلاقة بين المعرفة العامة للطلاب وممارستهم وعلاقتها ب خصائصهم الديموغرافية باستخدام اختبار t غير مزدوج واختبار ANOVA أحادي الاتجاه.

النتائج: النسبة الإجمالية لمعرفة الطالب (72.94٪) ، ونسبة أعلى (81.3٪) تعتقد أنه يمكن الوقاية من العدوى ، ونسبة أقل حول أهمية اللقاح ، فقط (50.8٪) يعتقدون أن لقاح كورونا يمكن أن تقلل من شدة العدوى ، (63.5 ٪) من المشاركين لديهم ممارسات وقائية فعالة في المكان لتجنب عدوى كورونا ، (36.5 ٪) من المشاركين في الدراسة لديهم عادات غير مواتية فيما يتعلق بعدوى كورونا. المدارس الخاصة احتلت المرتبة الأولى بين المدارس الثلاث من حيث توفير الحماية اللازمة ضد الفيروس.

الخلاصة: يتمتع معظم الطلاب بمستوى أعلى من المعرفة. ومع ذلك ، كان لدى الطلاب مستوى معتدل من إدراك المخاطر والرضا عن الدور الدفاعي الذي لعبته المؤسسات التعليمية وأعضاء هيئة التدريس والسلطات الصحية المحلية.

المدارس الخاصة أفضل من المدارس الأخرى من حيث النظافة وتوفير وسائل الحماية. طلاب المدارس الحكومية الطرفية أفضل من حيث اتباع التدابير الوقائية والالتزام بها. كانت معرفة الطلاب بالمرحلة السابعة أقل بكثير من معرفة المراحل الأخرى. الإناث بين الجنسين ، والطلاب الذين ابائهم اميين والطلاب الذين ابائهم يقرأون هم أكثر استخدامًا للتدابير الوقائية.

هناك قلة معرفة بأهمية لقاح كورونا وعدم اخذ اللقاح بنسب جيدة بين الطلبة.

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة كربلاء
كلية الطب
فرع طب الاسرة والمجتمع

المعرفة والممارسة والادراك حول وباء كورونا بين طلاب المدارس الثانوية في محافظة كربلاء عام 2022

رسالة ماجستير

إلى مجلس كلية الطب/ فرع طب الاسرة والمجتمع/ جامعة كربلاء كجزء من متطلبات نيل درجة الدبلوم العالي في طب الأسرة

من قبل

خلود جاسم محمد علي

بكالوريوس طب وجراحة عامة

إشراف

الأستاذ المساعد الدكتور

بشير عقيل العلي

بورد طب مجتمع

الدكتور

منتظر قاسم محمود

بورد طب اسرة

2022 م.

1444 هجـ