Assessment of teachers' knowledge about Covid-19 infection and provision of control strategies in schools of Al-Basrah Governorate

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Abstract:

This study included taking samples from schools in Basra Governorate. The number of participating schools was (8) schools from different regions in the governorate, different educational levels and different races. The number of teachers participating in the study was (50) schools. In order to achieve the objectives of the study, which is evaluating teachers' knowledge about Covid-19 infection and applying control strategies in it, at the level of both genders, males and females, and school stages (Elementary, Middle , and High schools). The demographic information of the study included (16%) of teachers from Elementary schools, (24%) of teachers from middle schools, (60%) Teacher from high schools. The percentage of teachers in government schools was (68%), in private schools (32%), the number of males was (42%), and the female participants were (58%). The results of the study also showed that there was no significant between government and private schools in knowledge and control strategies. And there was no significant between males and females about knowledge of Covid-19 infection, and there was also a significant between high schools from Elementary, Middle schools in knowledge and application of control strategies, while there did not appear a significant between Elementary, Middle schools.

Key Words: teachers knowledge, Covid-19, control strategies , Basrah school Governorate

Introduction:

Corona viruses are a family of viruses that contain strains that cause potentially deadly diseases in mammals , birds and humans. This viruses usually spread through aerosols of airborne fluids released by infected individuals (Somsen *et al*.,2020). Scientists have first known and describe the human corona virus since the 1960s,and it obtained its name from a distinctive halo or crown of glycoproteins that emerge from the envelope surrounding the particle. The virus has the longest genome of any RNA-based virus – a single strand of nucleic acid roughly 26,000 to 32,000 bases long (Fehr & Perlman,2015)

In the mid-1990s these viruses were described as not causing any serious disease in humans. This concept was changed in 2002-2003 with the emergence of the severe acute respiratory syndrome corona virus(SARS-CoV) and in 2012 the emergence of middle east respiratory syndrome corona virus (MERS-CoV) in Saudi Arabia. The source of infection with both of these viruses was bats, civet cats and arabian camels (Lisa & Hiscox,2020).

All corona viruses begin in animals and can then be transmitted to humans following mutations, recombination and adaptation (Ye *et al*.,2020).Today, more than 40 corona viruses have been named by the International Committee for the Taxonomy of Viruses . The number of corona viruses that infect humans has risen to seven, four of them have been acquired by society and spread through human populations continuously for a very long time. These four

human viruses usually cause mild, cold-like symptoms in humans, two of them (hCoV-OC43 and hCoV-229E) have been the cause of between 10% and 30% of all common colds since about the 1960s.Three of these (SARS-CoV, MERS-CoV and SARS-CoV-2) appear to have jumped to the human population more recently. Worryingly, these three result in a high mortality rate.

In view of the danger posed to human populations by these infectious viruses and the need to raise health awareness of ways of preventing them , teachers in schools in Basrah governorate at all levels have been selected to study and evaluate their health knowledge of these viruses and the methods used to prevent them.

Methodology

Design of the study: A descriptive cross-sectional study was carried out on the teachers to determine and evaluate teachers' knowledge about covid-19 infection in Basra schools, this study started from December 2020 to June 2021.

Sample of the study: The current study included a group of schools in the Basra governorate from different school stages, Elementary school, Middle School, and High school, and from separate areas in the governorate, which included (2) Elementary schools, (2) Middle Schools, (4) High schools and from different races(4) male schools,(4) female schools. The number of those who were subjected to the questionnaire questions in these schools were (50) teachers and distributed among them. Between (21) male ,(29) female**.**

Project instrument: The instrument of the project questionnaire that was prepared according to scientific sources related to the subject of the research and was approved by the specialized professors. The questionnaire determined by (3) parts, the first part contained (11) questions which include variables (School, Type of school, sex school, order teacher, sex teacher, education level, course, need course). the second part contained (10) to assess teachers' knowledge about COVID-19 infection, and the third part contained (9) questions to assess the extent to which preventive measures and control strategies were applied in schools. The degree of evaluation was divided into the second and third parts as in table (1):

Table (1): Division the degree for each question

Part	Drgree	Question
2	**55**	**5.5**
3	**45**	**5**

Each correct answer received a full mark, and the wrong answer received zero marks.All participant answered about (3) parts of questions through direct interview , and then we collected the score according to the right typical an**s**wer.

Work methods: Distribution of questionnaires to public and private schools **;** Auditing and on-site recording of the results of points related to health provention measures in schools mentioned in the questionnaire ; Collecting and tabulating the results of the questionnaire in tables on the Excel program ; Statistical analysis of the classified results on the SPSS version 26 program to extract the moral values of the study samples and an accuracy rate of 0.05**.**

Results and discussion

This study was done to indicate the level and intensity of covid-19 disease ,assess knowledge of administrative and educational levels in it, and provide initial guidance regarding physical distance, the use of masks inside schools and comprehensive multi-level measures to prevent the emergence and spread of a virus in educational settings , in order for schools to operate as safety as possible during the covid-19 pandemic , to continue to educate

students and keep them healthy and safe with their families, teachers and the wider community(Viner , *et al*.,2020).

Table (2) shows the majority (60%) of participants (teachers) related to school group were (high schools), regarding to type of school the majority (68%) of sample were (Government), related to sex school the results indicate the majority of participants (62%) were (female), regarding to Order teacher the majority (86%) of sample were (Teachers), the majority (58%) of participants (teachers) related to Sex teacher group were (female), regarding to Education level the majority (88%) of sample were Bachelor, related to course the majority (80%)of sample have no course, and the majority (56%) of sample need to take course about covid-19.

Table (2): Descriptive statistics of Demographic Variables

Demographic Variables	Variable classes	Sample study	
School	Statistics	F	%
	Elementary	8	16.0
	Middle school	12	24.0
	High school	30	60.0
	Total	50	100.0
Type of School	Statistics	F	%
	Government	34	68.0
	private	16	32.0
	Total	50	100.0
Sex school	Statistics	F	%
	Male	19	38.0
	Female	31	62.0
	Total	50	100.0
Order teacher	Statistics	F	%
	Teacher	43	86.0
	Assistant	4	8.0
	Manager	3	6.0
	Total	50	100.0
Sex teacher	Statistics	F	%
	Male	21	42.0
	Female	29	58.0
	Total	50	100.0
Educaton level	Statistics	F	%
	Bachelor	44	88.0
	Master	2	4.0
	Diploma	4	8.0
	Total	50	100.0
course	Statistics	F	%
	No	40	80.0
	Yes	10	20.0
	Total	50	100.0
Need course	Statistics	F	%
	No	22	44.0
	Yes	28	56.0
	Total	50	100.0

The results of the study concerning the knowledge aspect of teachers in Government and private schools showed that there was no significant between teachers in Government and private schools about Covid-19 disease. where the average score for teachers in Government schools was (24.58) and (19.93) For teachers in private schools out of a total score of (55%), And at an accuracy level ≤ to (0.005), this may be attributed to the convergence of the teachers' academic achievement level, which ranges between a bachelor's degree and a diploma, and a small percentage of a master's degree. As well as the failure of the majority of

teachers to enroll in educational and training courses on the dangers, methods of spread and Regarding the application of control strategies , the prevention of Covid-19 , table (3) . The results showed that there was no significant between Government and private schools in applying control strategies, providing health instructions, means of sterilization, awareness and social distancing, as the average score for government schools reached (34.85) and private schools (36.56) out of a total score of 45%. In these schools, it was noted that some aspects of control were available and others were neglected (providing guiding posters and ventilation for classes, while surface sterilization and social distancing were neglected, and information and gloves were not provided while masks were available) and the shortage may be due to a lack of equipment and a lack of school budget Delayed spending of the budget in the state**,** table (3). These results coincided with the results where some control strategies were applied in Denmark, including the implementation of hand hygiene and frequent cleaning among us. Other strategies were not applied, including the use of a protective shield and masks. **(**Nielsen *et.al*., 2021).

Table (3): Result of comparison between Government and private schools in the axis of knowledge and the axis of applying control strategies.

	Type_of_school	N	Mean	Std. Deviation	P - value	Sig.
Total knowledge of covid-19	Governorate	34	24.58	7.92	0.073	Ns
	Private	16	19.93	9.81		
Total cotrol strategies	Governorate	34	34.85	5.96	0.312	Ns
	Private	16	36.56	4.36		

In the final result of the total score between the axis of knowledge and the axis of control strategies for Government and private schools, there was no significant, as the average score for Government schools was (59.44) and for private schools (56.50) out of 100% (figure 1) .This study also matched a study in Denmark where 91% of teachers in Government schools were able to access protective equipment and adhere to these procedures (Nielsen *et.al*, 2021).

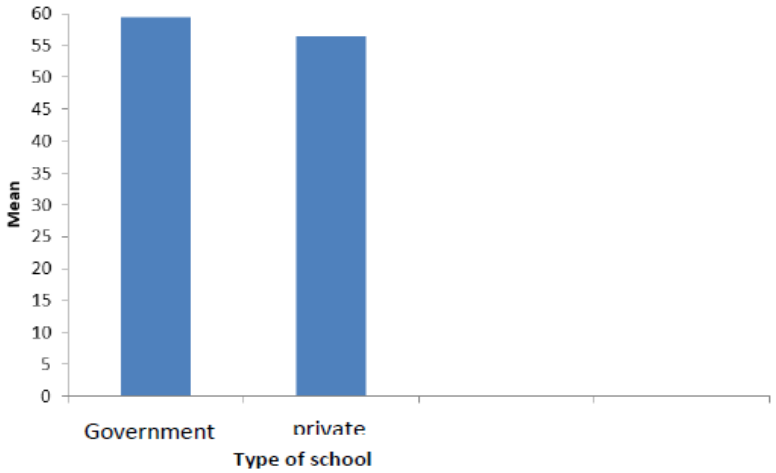

Figure (1): Total score diagram of both branch knowledge and control strategies of government and private schools

The results of male and female teachers' knowledge that there is no significant between them if the average score for males in terms of knowledge is (21.21) and for females is (24.46) out of a score of 55%. This may be attributed to the equal cultural level, educational attainment, and the level of both genders undergoing developmental courses, Table (4) .

Table (4): Result of comparison between male and female teachers in the axis of knowledge about covid-19 infection.

	Sex_teacher	N	Mean	Std. Deviation	P - value	Sig.
Total knowledge of covid-19	Male	21	21.21	10.03	0.198	Ns
	Female	29	24.46	7.57		

Table (5) shows the results of the comparison between Elementary, middle, and high schools on the basis of educational level. In the knowledge axis, there was no significant between the three academic levels . the average knowledge score was (25.43) for Elementary schools, (23.37) for middle schools and (22.36) for high schools out of a total score of 55%. It may be attributed to the same reason as the previous one, which is the equal cultural level, academic achievement, and the level of their subjection to developmental courses.

Either on the axis of the application of control strategies in these schools. It was noticed that there was a significant in the application of control strategies for high schools (with an average score of 37.33) than in each of the Elementary schools of (30.62) and middle schools of (33.75) out of a score of 45% for the axis, and no significant appeared Elementary and middle schools. One of the studies in China conducted on primary schools showed that the level of awareness and understanding about the virus among students is lower, as well as their knowledge less about control strategies (Xue *et al.*,2021).This may be attributed to the maturity of the thinking of students in high schools and their teaching staff, and their being of older ages and more awareness of the dangers of disease **.**

Table (5): mean score and significance of knowledge and control strategies of Elementary, Middle school and High school.

		N	Mean	Std. Deviation	P - value	Sig.
Total knowledge of covid-19	Elementary	8	25.43	8.78	0.681	Ns
	Middle school	12	23.37	9.70		
	High school	30	22.36	8.53		
	Total	50				
Total control strategies	Elementary	8	30.62	1.76	0.003	S
	Middle school	12	33.75	7.11		
	High school	30	37.33	4.49		
	Total	50				

The total score of the two axes (the knowledge axis and the control strategies axis) between the three school stages (Elementary, middle, and high schools) if no significant was observed in the final total of the degree, as the average total score for Elementary schools was

(56.06), middle schools (56.12) and high schools (59.70) out of a score of 100%, Figure (2).

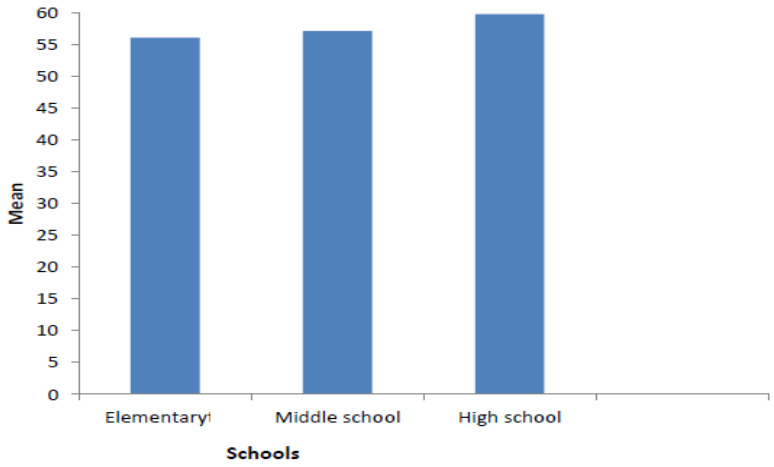

Figure (2): Total score diagram of both branch knowledge and control strategies of Elementary, Middle school and High school.

The application of physical spacing measures to individuals in and out of the classroom has been observed through administrative measures in segmenting students into closed groups, scheduling lessons and alternating between e-learning and civilization learning to school where possible.

Teachers and support personnel should maintain a distance of at least one meter from and between students . When the option of maintaining this distance is impractical or prevents support for students , teachers and support personnel should wear masks as a necessary measure.

School administrations must reduce contact between classes and age groups during and after official working hours , for example by sequencing the start and finish of classes at different times, some students and teachers attend in the morning ,others in the afternoons, and others in the evenings. Also, break times for students can be reduced ,alternating , and increasing the number of teachers to make fewer students in classes if space is available .

The World Health Organization (WHO) and UNICEF have issued advice on wearing masks by children in the community and in places where physical distance is not possible in the context of Conid-19 pandemic. Children and adolescents wearing masks in schools should be seen as a part of a comprehensive strategy to reduce the spread of Covid-19.Schools are required to establish a waste management system ,including the disposal of used masks , to reduce the risk of the disposal of contaminated masks in school classroom and playgrounds. WHO also described , on the website, a strategies for ensuring adequate ventilation in public buildings and ,if possible, increasing air flow in the case of heating ,ventilation and air conditioning systems for two hours before and after building occupancy.

In addition ,the inevitable prevention strategies in schools are personal hygiene and environmental cleaning, including proper hand cleaning , especially for young children when they arrive at school and times before meals ,before leaving school and providing enough soap and clean water or alcoholic hand disinfectant in school entrances and classrooms. The school environment should be cleaned daily with water, soap and disinfectants , including various toilets and surfaces touched, and cleaning with protective supplies provided to cleaning personnel such as personal protective equipment.

Apply a "stay at home when feeling ill" policy to students , teachers or school staff who may have Covid-19 infection , and directs them to visiting health care providers to assess, test and care for them .Connect with local organizations to support home-based care and ensure communication between home and school, if possible. Daily screening of cases should be conducted for all employees , students ,and visitors. Cases should be immediately isolated ,and students who violate an infected condition should remain at home for 14 days, and public health authorities should be notified in case of positive Covid-19.In cases where children cannot arriving to classroom , support should be provided to ensure that these students continue to receive learning materials and technologies, by internet ,text messaging , radio or television.

Schools have not been associated with a major increase in community-wide transmission of infection (Levinson *et al*.,2020). Adherence to preventive measures(masks and body distance) and timely detection and isolation of cases and contacts has so far been successful in preventing infection from developing mostly into larger outbreaks (Szablewski,2020).An outbreaks in Georgia, United States of America ,identified that Cov-SARS2 can spread efficiently in places where young people are concentrated overnight , leading to a high rate of attacks across all age groups ,the average age was 12 years (Oshitani *et al*.,2020). Japanies authorities developed a concept they called the three hangars for places and positions of high dangers :1) Indoors with poor ventilation ,2) Places crowded with lots of people ,3) Close encounter. The large Covid-19 outbreak in a secondary school , which started 10 days after the school reopened , is a warning of the possibility of mass cases of infection due to the combination of the three warnings in crowded school environments (Stein-Zamir *et al*.,2020).This underscores the importance of strict enforcement of preventive measures when Cov-SARS2 is spread in the community.

Conclusion:

The teaching staff in the Government and private schools of Basra Governorate are almost equal in the knowledge aspect of Covid-19 infection, as well as the equality of these schools in the application of control strategies. Male and female teachers in Government and private schools are equal in terms of knowledge about COVID-19, and there is no difference between them. Teaching staff in Elementary, Middle , and High schools are equal in the knowledge aspect of COVID-19 infection. The age and mental superiority of students and teachers in High schools gave them superiority over the rest of the school stages (Elementary, Middle schools) in application of control strategies within these schools. The final outcome of the questionnaire axis in the knowledge aspect and the application of the control aspect in schools was equal between government and private schools, as well as between Elementary, Middle , and High schools.

Acknowledgement:

The researcher would like to thank all the teachers in the public and private schools who helped complete research questionnaire and Dr. Mahfouz, in college of Nursing-University of Basrah, for completing the research statistics.

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