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Prevalence of Covid 19 in Students Attended Al-Dora Family Medical Center for Covid 19 Test

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Abstract

Introduction: Covid 19 pandemic affected all aspect of life, particularly schools attending. Students replaced their presentational lessons by on line distance learn. Ministry of health decisions varied between complete electronic study and attendance several days per week depending on the number of cases of the whole population. In Iraq, total cases till 15 of September, 2021, reached 1.963,264 and total death 21,631. Highest percent of confirmed cases in age group (30-39) years; 24.7%, while in children aged (0-9) years only 1.6%, and in older age group (10-19) years; 7.5%. Cases of covid19 at lower percent in small children and in school age children and tend to increase with age as it reached to 22.6% in age group (20-29). Objectives: Prevalence of covid 19 in students attending AL-dora medical center lab. Comparisons in number of cases of students before and after the school lock –down. Methods: It is a cross sectional study, included the records of schools health unit and lab records of VTM nasal or pharyngeal swab and rapid test in Al-Dora family health center from 1/10/2020 to 15/7/2021. Results: The study included 1711 students, the mean age group was 15.7 (± 4.9) years. The study showed the prevalence of covid19 in students attained the lab was 23.4%, highest percent was in age group >18 years and the lowest percent was in age group 6-12 years. The percent of vaccinated students in academic year 2020/2021 was 0.3 %(3/1000). There is no significance difference in age group 6-12 years and age group >18 years before closing schools and colleges and after closing while age group 13 -18 years showed a significant increase in positive cases after closing schools as cases increase from 18.1% to 25.9% after closing schools. Positive cases showed no significance difference with sex before and after closing. Discussions: The educational path of students in different

age groups had broken down. Fear of parents could be justified but it could be exaggerated. School closures were applied almost around the world trying to decrease the potential spread of disease despite early studies suggested this would have less impact than most other non-pharmacological interventions.

Introduction

The global pandemic, Covid-19, affected all aspect of life, particularly schools attending. The pandemic has not only changed the existing nature of the processes and systems but it forced students to replace their presentational lessons by on line distance learn due to restriction in mobility, lockdowns, social distancing, and new forms of learning practices.

Ministry of health decisions, in corporation with ministry of education, varied between complete electronic study and attendance several days per week depending on the number of cases of the whole population. The consequent closure of the educational institutions has forced students to deal with their blurring personal and educational process.[1] [2]

The real picture of pandemic in educational institutions needs accurate evaluation and whether the students got the infection in schools and colleges or outside them as parks and markets. Students in urban area and with well-educated parents engaged easily with new online and home-based activities, in other hand, the rural area and poor, low educated families suffered from absence of presentational lessons.[3]

Families in rural area especially with low income used to live in crowded houses so even with complete lock down they can get the infection, as well as, they are rarely having on line technique, majority of students were unable to access the internet due to technical and financial issues in addition to the lack of face-to-face interaction. These obstacles led to deterioration of teaching process.[4][5][6]

Prevalence of covid 19 among students in educational institutions showed lower rates as a study was performed in Chile by Torres et.al. , that gave the antibody positivity rates 9.9% among students and 16.6% among staff. Teachers were more affected and younger children were at a higher risk for infection. Wearing of face mask, decreasing class crowdedness and keep social distance can lower the rate of infection among students.[7]

In Iraq, total cases till 15 of September, 2021, reached 1.963,264 and total death 21,631. Highest percent of confirmed cases in age group (30-39) years; 24.7%, while in children aged (0-9) years only 1.6%, and in older age group (10-19) years; 7.5%. Cases of covid19 at lower percent in small children and in school age children and tend to increase with age as it reached to 22.6% in age group(20-29) years.[8] Older students can get the vaccines to reduce infection transmission, 5.76 % of population got at least one shot of the vaccine.[2] [8]

Al-Dora Family Medical Center located in crowded area, served 66697 clients and 15742 families in eight locality including agricultural parts. The medical center includes 29172 students within its geographical area. Students attend the medical center for medical and administrative services.[9]

Aims of the Study

Prevalence of covid 19 in students attending AL-dora medical center lab.

Comparasion in number of cases of students before and after the school lock –down.

Subjects and Methods

It is a cross sectional study, included the records of lab and school medical unit of AL-Dora Medical Center. The study involved 1711 students attained the medical center for nasal smear (VTM) or blood test (Rapid test) for covid 19 detection. The study included the students from governmental, private, day and night schools, and colleges that are located within the geographical area of the medical center. It had the records from 1/10/2020 to 15/7/2021.

Statistical Analysis

Statistical Package for Social Sciences

(SPSS 26)[10] used for data analysis.

1. Categorical data were represented by frequencies and percentages. Association between categorical variables measured using Pearson's Chi-square test. The effect of closure on the proportion of positive COVID cases among the students was assessed by two proportions z-test.
2. Age represented by mean, standard deviation, median and range.
3. P-value considered significant at alpha level 0.05.

Results

The study included 1711 students, the mean age group was 15.7 (± 4.9) years and ranged from 6-34 years, about half of them were 13-18 years, and 52.5% of them were males. **Table 1, Figure 1, Figure 2**

The study showed the prevalence of covid19 in students attained the lab was 23.4%, highest percent was in age group >18 years and the lowest percent was in age group 6-12 years. **Figure 3**

Highest percent of covid 19 infections was in female. **Figure 4**

The current study showed that the percent of vaccinated students in academic year 2020/2021 was 0.3 % (3/1000). There is no significance difference in age group 6-12 years and age group >18 years before closing schools and colleges and after closing while age group 13-18 years showed a significant increase in positive cases after closing schools as cases increase from 18.1% to 25.9% after closing schools. Positive cases showed no significance difference with sex before and after closing. **Table 2**

Figure 5 illustrates the trend of number of cases during the study year for the students visit the medical center and tested for covid19 with no significant difference of the spikes before and after schools closure

Discussion and Conclusion

COVID-19 pandemic has disrupted student life and had significant effects on curricula delivery at schools and colleges. The educational path of students in different age groups had broken down that expose them to stressful and anxious concern as a study done by Zaza Lyons, et.al, showed that 68% of students had deterioration in mental well-being due to Concerns related to uncertainty about returning to normal life and replacing Common activities by using video chats and electronic study. Main negative impacts were on social connectedness, studies and stress levels and absence of hobbies and exercise.[11–14]

Fear of parents could be justified but it could be exaggerated. The study showed 23.4%, of students attained the lab had positive test, it is relatively small percent that can be overwhelmed by following protection measures as wearing mask and hand washing.

Highest percent was in age group >18 years and the lowest percent was in age group 6-12 years as older students tend to wander outside home in parks and moles in groups so risk of getting infection is more than small students that are stayed at homes with their parents after school.

This result is ensured by other study in Germany done by Eve line Otte im Kampe, et.al, showed that highest percent of covid 19 in age above 21 years and lowest percent in age group 6-10 years. [15]

Other study in Italy revealed that only 0.38% of students had the infection in elementary school and 6.46% in secondary school while total students with covid19 represent 3.82% of study sample.[16]

Studies showed large discrepancy in case rate and prognosis between young children and older adults and significant number of children with no or subclinical symptoms. Studies in China showed a role for children in transmission with more benign disease or even without symptoms. Data from South Korea and Iceland displayed children were significantly underrepresented. [17,18]

School closures were applied almost around the world trying to decrease the potential spread of disease despite early studies suggested this would have less impact than most other non-pharmacological interventions, as a

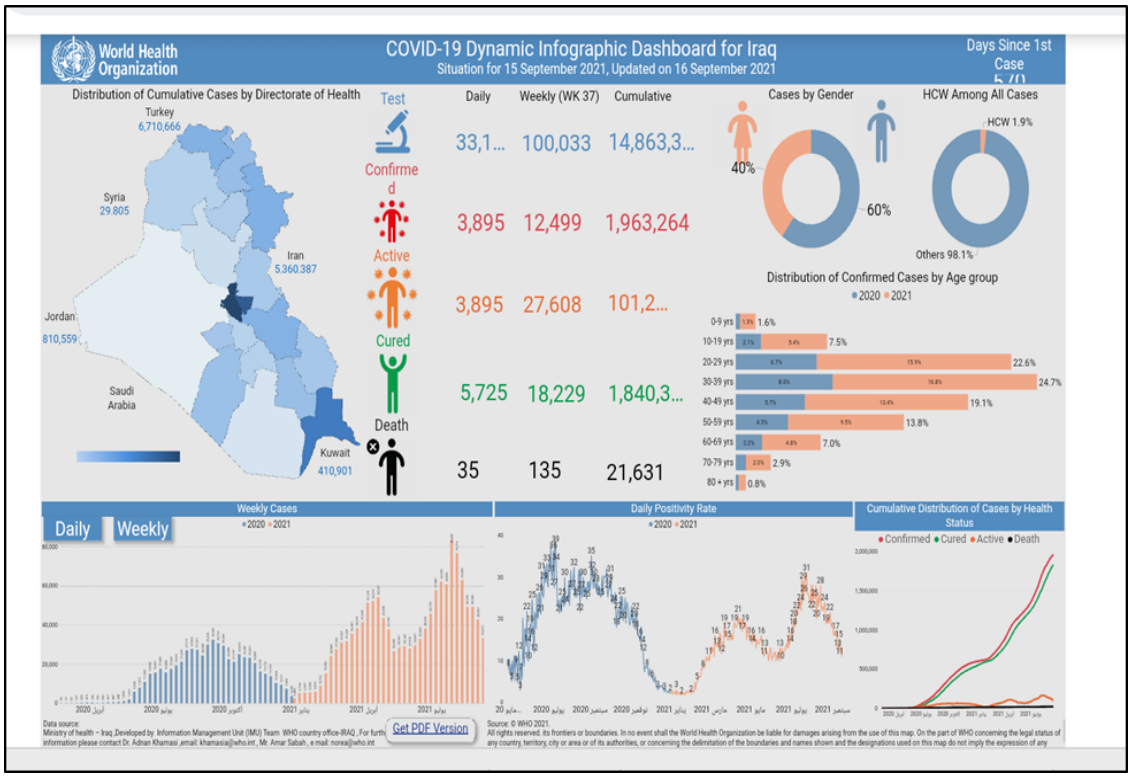

Figure 1. Showed covid 19 cumulative cases and total death. [8]

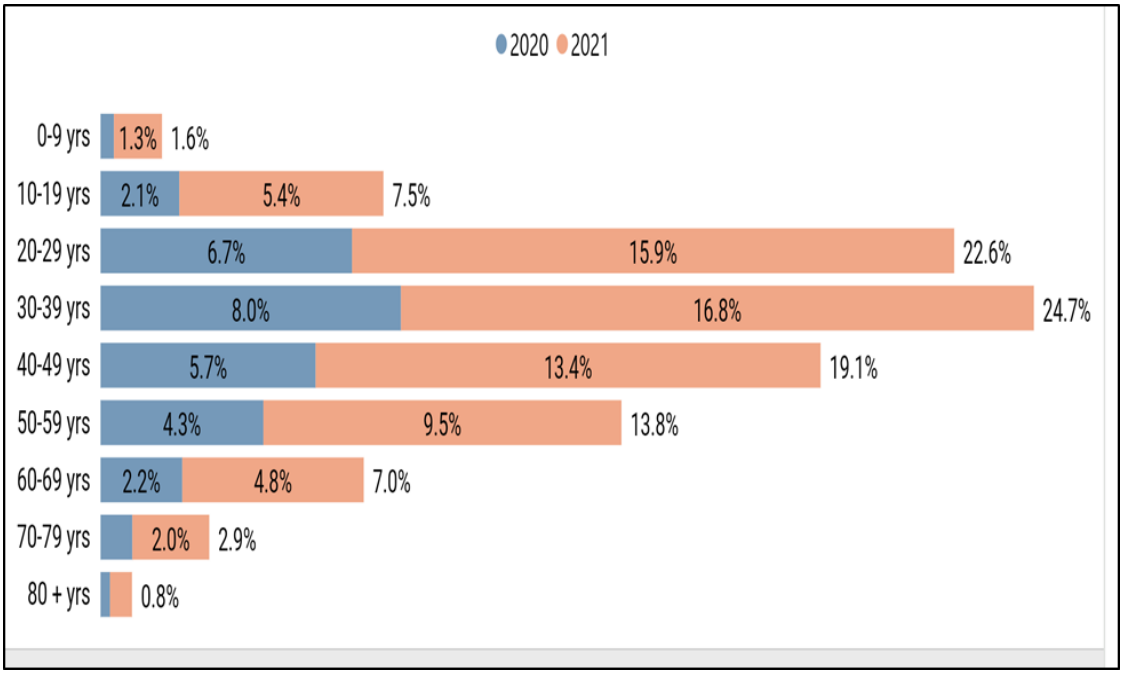

Figure 2. Showed cumulative cases of covid 19 according to age group in Iraq. [8]

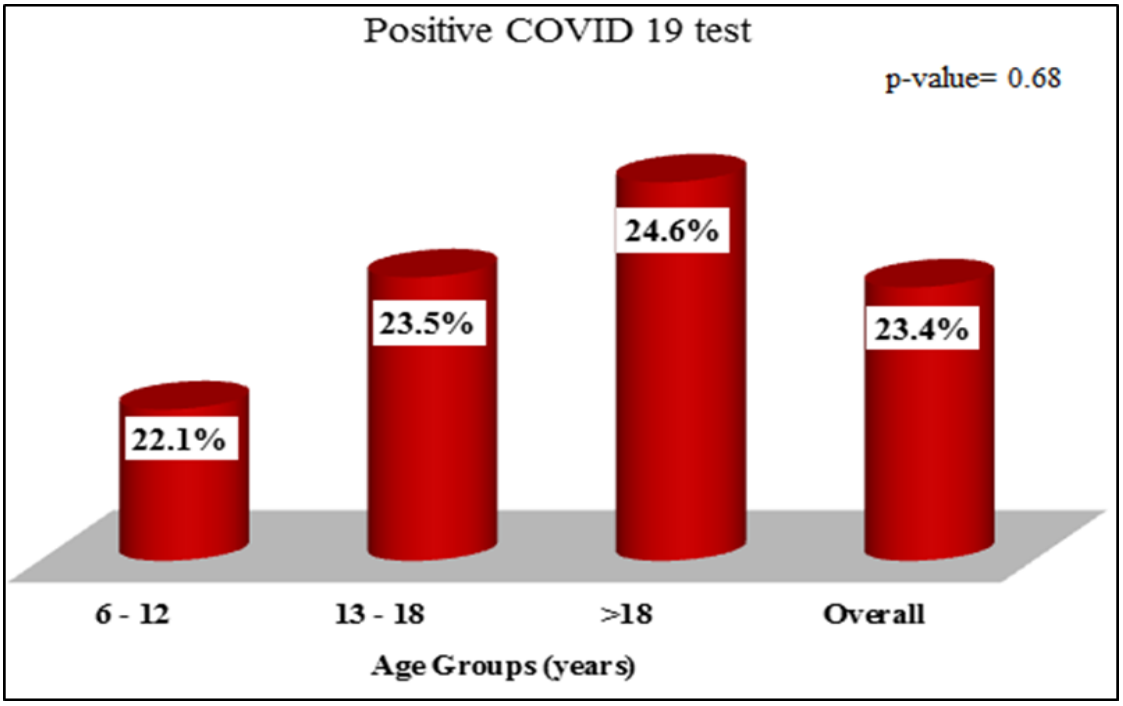

Figure 3. Prevalence of COVID-19 among students visiting Al-Dora PHCC during the period from 1st October 2020 to 15th July 2021, according to age groups

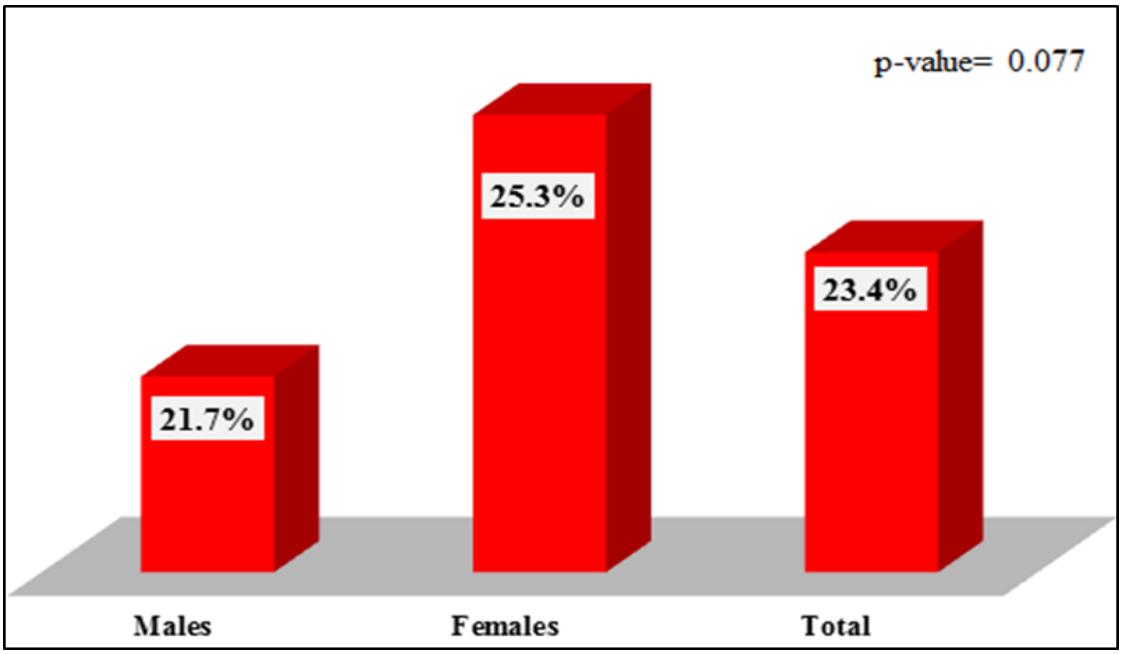

Figure 4. Prevalence of COVID-19 among students visiting Al-Dora PHCC during the period from 1st October 2020 to 15th July 2021, according to their sex

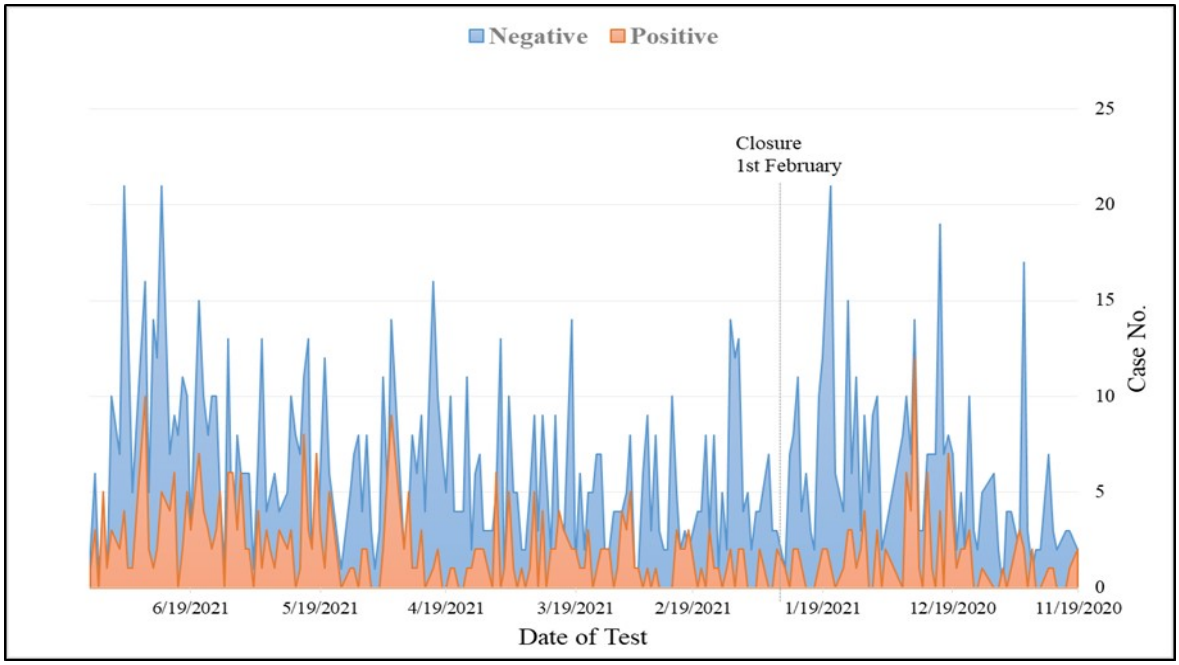

Figure 5. Trend of COVID 19 cases during the studying year according to date of testing

Table 1. Main criteria of the study group

Variables	**No.**	**%**
Age groups (years)		
6 – 12	461	26.90%
13 – 18	790	46.20%
>18	460	26.90%
Sex		
Males	898	52.50%
Females	813	47.50%
Total	1711	100.00%

Table 2. Comparison between proportions of tested positive students according to closing measures

Parameters	**Before closing**			**After closing**			**p-value**
	Total	Tested positive		Total	Tested positive		
Age groups	**No.**	**No.**	**%**	**No.**	**No.**	**%**	
6 – 12	151	37	24.5%	310	65	21.0%	0.391
13 – 18	238	43	18.1%	552	143	25.9%	0.017*
>18	102	21	20.6%	358	92	25.7%	0.29
Sex							
Males	282	54	19.1%	616	141	22.9%	0.207
Females	209	47	22.5%	604	159	26.3%	0.272
Overall	**491**	**101**	**20.6%**	**1220**	**300**	**24.6%**	

*Significant by proportion z-test

study in US showed that School-related cases in children occurred in <1% of all registered students, in addition to inability to control young groups or teenage movement cross the city.(17,19,20)

The current study revealed Positive tests were more in female students this could be due to insistence of female students to detect and diagnose any disease due to their careful nature. The study showed that there is no significance difference in age group 6-12 years and age group >18 years before closing schools and colleges and after closing that enhance the concept of schools is not being a major source of covid 19 transmission, actually the educational institution could be a well control place for health measures by encouraging the students to keep social distance, wearing mask, using disinfectant gel or regular hand wash and prompt the older students to get the vaccine, on the contrary, the entertaining and commercial places which could be difficult to urge young people to follow the heath instructions strictly. [17]

The current study showed that the percent of vaccinated students in academic year 2020/2021 was 0.3 % (3/1000) which is surly small percent. Efforts should be dedicated to encourage students to get vaccines; campaigns to colleges have to start.

Age group 13-18 years showed a significant increase in positive cases after closing schools as cases increase from 18.1% to 25.9% after closing schools. Teenage used to stroll as groups in parks and moles, complete electronic study without face to face interaction with other schoolmates urged them to go out and promenade to meat colleagues that made them more susceptible to get infection while schools could be a well-controlled environment to decrease disease transmission by strict heath measures. Studies exposed that prolonged school closures, strict social distancing measures, and the pandemic itself affect the wellbeing of children and adolescents and could lead to long-term mental health effects.[21]

Positive cases showed no significance difference with sex before and after closing. Both males and females students exposed to same circumstances during pandemic. The study revealed schools closure could not effect covid 19 pandemic transmission; it is time to back to schools.

Recommendations

1. Back to school with controlled measures as hand washing, wearing mask and social distance.
2. Avoid complete electronic study and replaced it by partial or complete attendance according to number of cases of pandemic.
3. Encourage older students to get vaccines.

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