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IMPACT OF COVID-19 ON DENTAL HYGIENIST STUDENTS IN SAUDI ARABIA

MARYAM ALANAZI¹ & AREEJ JABER ALSIWAT²

¹Senior Dental Hygienist At Prince Sultan Military Medical City , Riyadh, Saudi Arabia. Tel: 00966508823007

²Dental Health Department, College of Applied Medical Science, King Saud University, Riyadh, Saudi Arabia.

Email: mealonazi@psmmc.med.sa

ABSTRACT

Objectives:This study aims to evaluate the impact of COVID-19 on dental hygienist student trainee in Saudi Arabia. And To explore the phycological impact as well as assess the quality of learning process among dental hygiene students.**Methods:**Online survey will administrate to dental hygienists (students in level5-6 & 7-8) as well as internships students. The survey includes questions about student demographics, student perceptions of institutional responses, student concerns, and psychological impacts.**Result:**The study recruited 61 participants in total from 4 different universities in the country. The results alsoshowed that the students had a high level of concern for their safety from the pandemic's infection. They generally believed that they were at higher risk of infection from the patient population than those of their colleagues and staff with whom they will interact within their classes and across university buildings.**Conclusion:**more needs to be done to help students adjust to the impact of the pandemic by restoring their faith in the educational system through dialogue and a collaborative approach to improve the level of education provided within the educational system. The government should also show that there are concrete plans to support the economy and future job prospects of medical students in the country.

KEYWORDS: COVID-19, dental hygiene, impact, knowledge, pandemic, Educational

II. PROJECT SUMMARY

The coronavirus disease 2019 (COVID-19) pandemic arguably represents the worst public health crisis of the 21st century. Despite global efforts to mitigate disease spread, virtually no aspect of daily life remains unaffected. Students are no exception to this disruption as many institutions closed campuses or transitioned from in-person to online learning. In addition, a myriad of other activities, such as school clubs, sports, conferences, and graduations were cancelled, postponed, or moved to online venues.

However, no empirical study currently exists in the literature that examines the impact of the COVID-19 pandemic on dental hygienist trainee in KSA. This study aims to evaluate the impact of COVID-19 on dental hygienist student trainee in Saudi Arabia. Online survey will administrate to dental hygienists (students in level 5-6 & 7-8) as well as internships students. The survey includes questions about student demographics, student perceptions of institutional responses, student concerns, and psychological impacts.

III. BACKGROUND

The outbreak of the Corona Virus, commonly called COVID-19, has changed the way the clinical practice is undertaken. Notably, the highly contagious nature of the virus and the emerging evidence in regards to its fatality has made it to be a novel clinical management issue. Considering that the residential areas of the virus are in the mouth and nasal cavities,

the dental practice has been undoubtedly affected since the pandemic as dental practitioners look at new ways to keep their clients and themselves safe from this highly contagious virus (Van Doremalen et al., 2020). As it emerges, COVID-19 will most definitely affect not just dental practice but general clinical practice in the future (Amato et al., 2020). Further research on the impact of the pandemic on dental hygiene practice needs to be undertaken, which is why this proposal has been suggested. Since there has been an impact on dental hygiene practice after the outbreak, more research will help to reveal the kind of impact that the pandemic has had and the emotional effects on dental hygiene trainees.

IV. PROJECT AIMS & OBJECTIVES

Aims:

To evaluate the impact of COVID-19 on dental hygienist students.

Objectives:

- a) To explore the psychological impact among dental hygiene students.
- b) To assess the quality of learning process among dental hygiene students.

I. LITERATURE REVIEW:

The COVID-19 pandemic presented a perplexing situation where the dental practice was expected to evolve quickly to mitigate the risks from the pandemic. As such, to perform procedures safely, patients and staff faced extreme challenges, especially as far as ensuring the safety of both patient and staff is concerned. However, finding ways

to overcome these potential challenges remained a risk because it was uncharted territory and remains mostly so until today. Amato et al. (2020) and Peng et al. (2020) noted that the respiratory droplet and aerosol transmission theories that have been significantly backed by an increasing body of scientists meant that dental practice needed to change dramatically to be able to sustain its objective. However, with dental practices involving the areas that were potential habitations of the virus, dental practitioners have continued to look at ways of undertaking practice in the safest way possible (Newton & Asimakopoulou, 2017). In fact, dental professionals are identified to be among the practitioners who are at a 'very high risk' of being exposed to the coronavirus by virtue of their practice. According to Van Doremalen et al. (2020), this is further worsened when they are carrying out specific dental practice procedures like the aerosol-generating procedures (AGPs) that may involve infectious patients. Following this concern on 25th March 2020, the National Health Services (NHS) in the United Kingdom suspended all non-urgent, routine dental care revealing how serious the COVID-19 pandemic has affected the dental practice. Nibali et al. (2020) undertook a study involving 358 dental practitioners in the United Kingdom to investigate the effect that COVID-19 had on their practice. The results from the study indicated that 319 representing 89% of the respondents agreed that COVID-19 had affected their practice. As much as dental practitioners have upgraded their dental practice settings to ensure that they and their patients remain safe, the fact that the

practice involves the area where the virus thrives means that the pandemic will continue to affect dental practice for years to come (Van Doremalen et al., 2020). Beyond the practice, Brondani and Donnelly (2020) have noted that COVID-19 has significantly affected dental student perceptions and heightened their awareness of the risks involved.

VI. Survey

A research strategy entails a progressive plan of action showing the researcher's perceptions and efforts. Using the strategy, the researcher will be able to perform the research methodically following an agreeable schedule with a view to get quality results and later compile a detailed report. Therefore, the researcher using the survey as the main research strategy will be able to collect reliable and definite data from dental hygienists (students in level 5-6, 7-8 and internships).

The online survey will be administered to the participants (dental hygienist students in level 5-6, 7-8 and internships) The exercise will be voluntary and ethically administered according to the principles on privacy and confidentiality governing research as stipulated at PSMC (Saunders & Lewis, 2012).

.Considering that the researcher will be concerned about capturing responses from a significant number of dental hygienist trainees. The number of participants will determine the success of the study. As such, the analysis of the results will be numerical suggesting that this study will be quantitative (Saunders & Lewis, 2012).

Research tools are techniques based on the research strategy and method that fit the research context. This study will be quantitative and will use a survey strategy whereby the researcher will use questionnaires (Saunders & Lewis, 2012). Several advantages of using questionnaires are like the anonymity and the convenience of distribution and collection. Therefore, using questionnaires within this study will help the researcher to reach many participants at minimal cost while ensuring that the participants remain anonymous (Saunders & Lewis, 2012).

The questionnaires will include a cover letter that will highlight all the ethical considerations of the study. Further, the questionnaires will have a consent form to be approved by the participants.

Sampling

The study will be undertaken at all institutions that have dental hygiene program. This will involve Dental hygienist students who are (trainees clinical) level 6 to level 8 as well as internships students during the time from march 2020 to January 2021.

The institutions are:

King saud university, Inaya medical colleges, Qassim university and Al baha university

Inclusion and exclusion criteria:

Inclusion:

- 1- all dental hygienist students who received or should have received clinical training during pandemic.

2- inter dental hygienist during the time from march 2020 to January 2021.

Exclusion:

- 1- dental hygienist who did not start their clinical training.
- 2- Graduated dental hygienist.

VII. METHODS

The research methodology will consider several factors covering the approach used, the appropriate strategy, tools, and the sampling procedures. This can be used to determine the validity and reliability of the research. The research approach can either be deductive or inductive. A deductive approach tests a theory, but an inductive approach generates a new theory from the data collected (Saunders & Lewis, 2012).

RESULTS

This chapter will present the result of the data collection as well as the analysis process highlighted in the previous chapter. The chapter will also discuss the meaning of each result and the implication for academic practice as well as the situate the results in comparison to published academic works.

1. Response Rate

media and among the student population. Eventually, the study was able to collect responses from about 61 students. However, only 43 students filled all aspects of the survey with the remaining 18 students partially completing some aspects of the survey.

2 Socio-Demography

accounting for 57% of the population. The impact might be a result of the snowballing sampling process utilized by the study where participants broadcasted the link to the survey to their friends (Parker et al. 2019). Concerning the social status of the population a vast majority of the population were single (90%). The same trend can be observed in the economic status of the participants where about 90% claimed that they were in excellent or medium economic status.

King Saud University had the highest proportion of students participating in the study with about 32%. Followed by Qassim University with 30% of the population. The

remainder of the population belonged to the demographic of Albaha University (22% and Inaya Medical college (17%). In line with the methods of the study, all the students were at level 5-6 (19%) or level 7-8 (12%) or Internship year (69%). Hence, the results were collected from students who are almost done with their educational program. However, due to the snowballing sampling process described above, the demography of the participants might not reflect those of the general dental-hygiene students' population in Saudi Arabia which means that the results might be necessarily applicable to the general population.

Table 1: Socio-demography

Socio-Demography		N	%	Total
Gender	Male	35	57.38	61
	Female	26	42.62	
Social	Single	55	90.16	61

status :	Married	6	9.84	
	Divorced	0	0.00	
	Widowed	0	0.00	
Economic Status:	Excellent	18	29.51	61
	Medium	37	60.66	
	Weak	5	8.20	
	Very weak	1	1.64	
University	King Saud University	19	31.67	60
	Albaha University	13	21.67	
	Qassim University	18	30.00	
	Inaya Medical College	10	16.67	
School year	Level 5-6	11	18.97	58
	Level 7-8	7	12.07	
	Internship year	40	68.97	

3. Concerns about Covid-19

countries, especially in Italy where death rates were more than 1000 deaths a day at their peak (Goumenou et al., 2020). This stoked up fear that the pandemic's mortality rate might be higher and consequentially, students surveyed in the study expressed concerns about their safety. Only 9% were unbothered (90% were concerned) about the impact Covid-19 infection might have on their physical health or about contracting the infection from patient care processes during their clinical rotations (See table 2). Such behaviour demonstrated the high risk of perceived susceptibility that the students have to the pandemic and are most likely to support the lockdown process that was aimed at preventing the infection's spread and the safety of students and staff members.

However, the students were relatively more confident that they might not contract the infection from fellow students in classes or generally within the university as only 77% and 82% respectively expressed concerns about university activities. This level of concern is lower than the 90% that we're concerned about being exposed from within the patient population admitted within their medical training facilities. Such imbalanced risk might be demonstrating perceived confidence in other students or staff members to protect themselves from the pandemic's infection but not in patients who might have been exposed (Syed et al., 2021).

Table 2: Safety Concerns about Covid-19

Safety Issues		N	(%)	Total
Concerned about your physical health	Not at all concerned	4	9.09	44
	A little concerned	10	22.73	
	Concerned	13	29.55	
	Very much concerned	10	22.73	
	Extremely concerned	7	15.91	
Contracting COVID 19 from patient care in clinics	Not at all concerned	4	9.09	44
	A little concerned	10	22.73	
	Concerned	13	29.55	
	Very much concerned	10	22.73	
	Extremely concerned	7	15.91	
Contracting COVID 19 from attending classes in school	Not at all concerned	10	22.73	44
	A little concerned	8	18.18	
	Concerned	13	29.55	
	Very much concerned	6	13.64	
	Extremely concerned	7	15.91	
Contracting COVID 19 interacting with people in the university building	Not at all concerned	8	17.78	45
	A little concerned	12	26.67	
	Concerned	12	26.67	
	Very much concerned	9	20.00	
	Extremely concerned	4	8.89	

4 Impact on Learning Process

(Khasawneh, 2021). Hence, this adaptation to increased use of technology including new ones was not a concern to the student as only 9% expressed some discomfort with adapting to the new sets of technology (See table 3). This result aligns with that of Maxwell et al. (2018) who also showed that students are early technology adopters who can facilitate the integration of new learning technology. Hence, there is a willingness to try innovations to improve learning.

With the I

The willingness to adopt this new technology was demonstrated in the fact that only 11% and 9% of the students claimed that the remote sessions might diminish their academic focus or motivation. In the same vein, such a finding contradicts the published results of Muthuprasad et al. (2021) which showed

that Indian students might be unable to implement the same focus and motivation they normally would have in the physical class learning process. Cultural reasons might be the cause of the different perspectives of the student population of this study and this is described in the study

by Muthuprasad et al. (2021). For instance, the pressure from parents and family members to engage in academic learning even at home might help students preserve their learning focus and motivation in Saudi Arabia.

Table 3: Impact on learning processes

Issues Linked with New Learning Process		N	%	Total
adapting new technology	Somewhat uncomfortable	4	8.89	45
	Neutral	16	35.56	
	Somewhat comfortable	12	26.67	
	Extremely comfortable	13	28.89	
concerned about quality of online courses	Not at all concerned	10	22.22	45
	A little concerned	14	31.11	
	Concerned	8	17.78	
	Very much concerned	8	17.78	
	Extremely concerned	5	11.11	
feel difficult to focus on school work	Never	5	11.36	44
	Occasionally	6	13.64	
	Sometimes	21	47.73	
	Often	6	13.64	
	Always	6	13.64	
feel difficult to find motivation to study	Never	4	9.09	44
	Occasionally	7	15.91	
	Sometimes	18	40.91	
	Often	9	20.45	
	Always	6	13.64	

However, the result also showed that about 78% of the participant was concerned that the quality of learning that will be implemented in these online remote classes will be lower than those obtained in normal standard physical class sessions (Figure 1).

This increased concern might reflect a low level of confidence in the school management and educational system to effectively implement the right changes without compromising the quality of education received (Al Fadda et al., 2020).

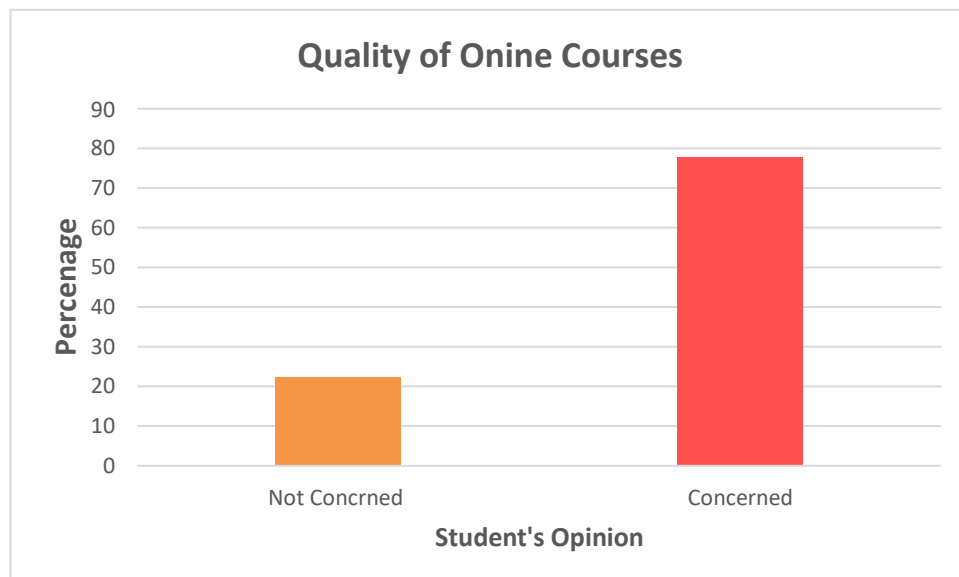


Figure 1: Concerns about the quality of Online Courses

5. Anxiety About the Future

The study also surveyed the students on their anxiety about their future. The results showed that only 18% showed no concern that the pandemic might not impact the academic calendar with about 23% showing a high level of concern (see figure 2). With such poor confidence in the school system to withstand the pandemic, the students are demonstrating that the educational system might not be robust enough to withstand the impact of the pandemic intact without destroying the academic calendar and prolonging their training.

This sentiment and perspective are in line with the previously stated concern that the quality of online education might be lower than those of physical classes. Hence, the pandemic might be exposing some structural defects that already plagued the country's educational system that as described by Mishrif & Alabduljabbar, (2018). Thus, restoring the confidence of the students in the system is of paramount importance

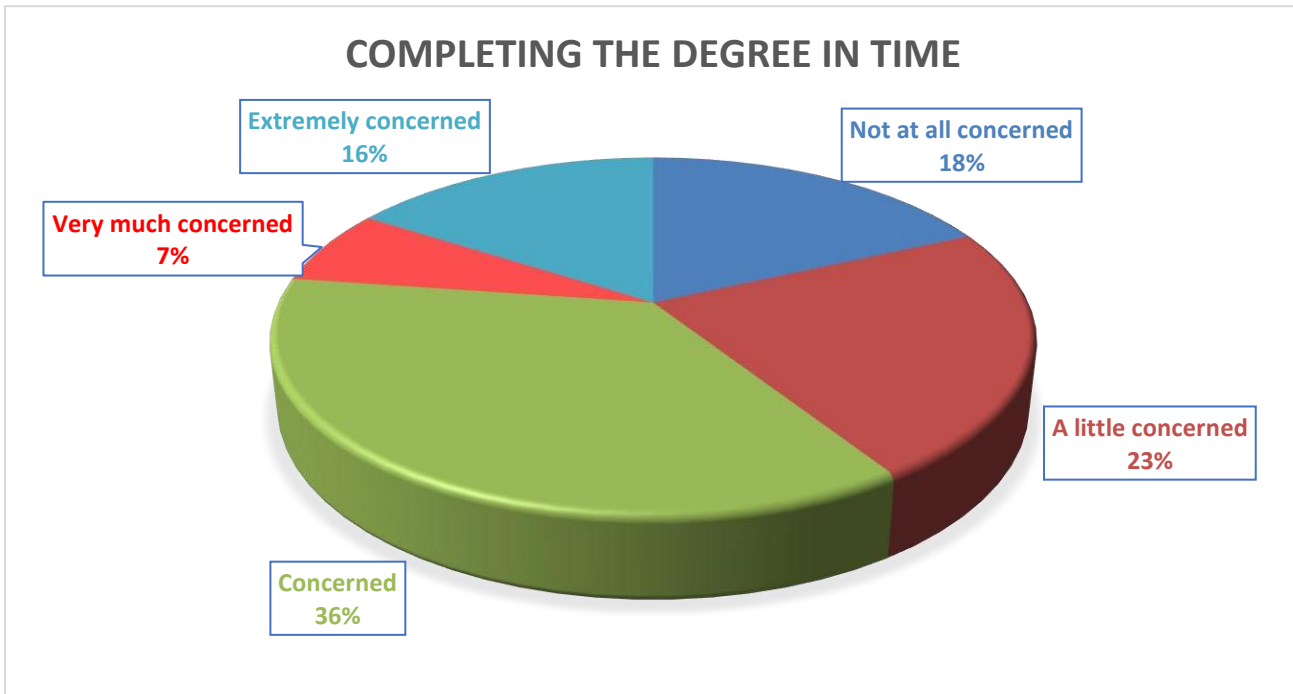


Figure 2: Concerns about the Academic Calendar

The anxiety of the students extended to the impact of the pandemic on future employment status as the effect of the pandemic wrecked economies leading to recessions and economic shrinkage across all continents. Such a process increases the

rate of unemployment and 60% of the students claimed that they are always worried about their employment opportunities which might be affected by the economic sabotage effect of the pandemic.

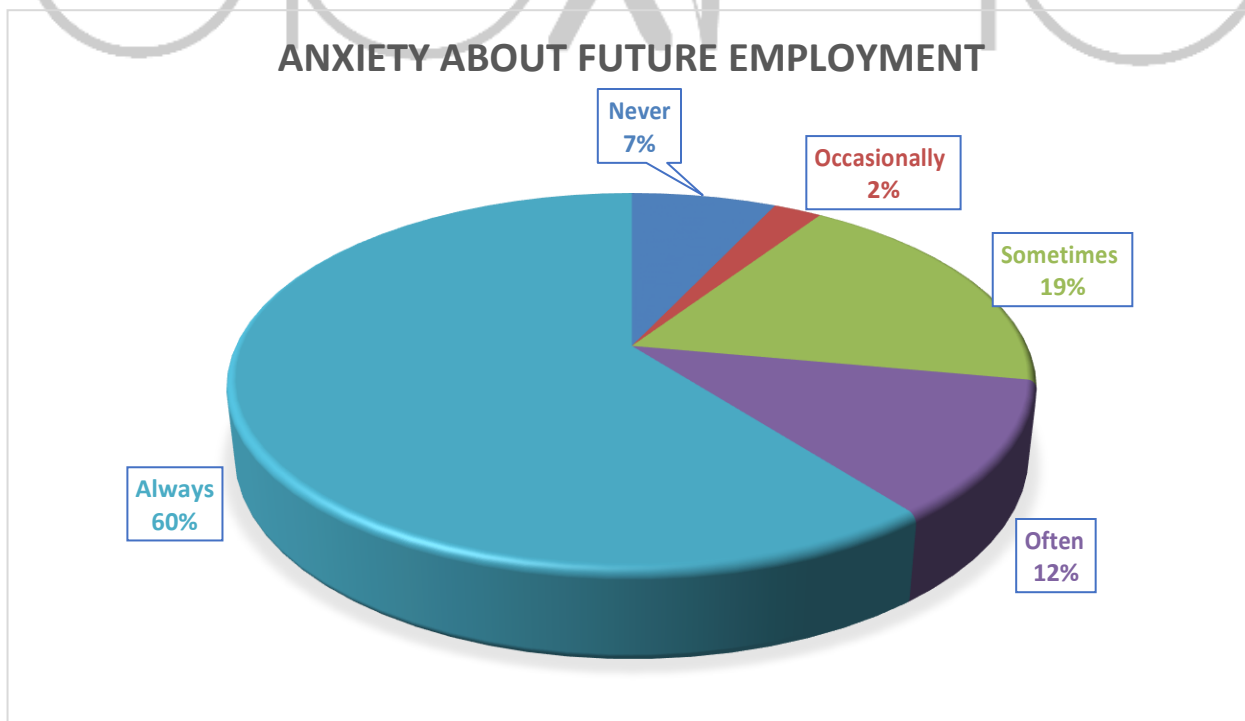


Figure 3: Concerns about future employment

DISCUSSION AND CONCLUSION

The study set out to investigate the impact of the covid 19 pandemic on the learning process and psychological health of dental hygiene students in Saudi Arabia. The study recruited 61 participants in total from 4 different universities in the country with the highest proportion of students identifying with King Saud University. In line with the objectives of the study, only students in level 5 or more were included in the study as well as students currently undergoing internship training. The results also showed that the students had a high level of concern for their safety from the pandemic's infection. They generally believed that they were at higher risk of infection from the patient population than those of their colleagues and staff with whom they will interact within their classes and across university buildings. Furthermore, the student population showed that the population of the students were willing to adopt the new technology that will facilitate remote learning. However, they expressed reservations that the education system will be able to provide a similar level of education quality in these online classes. Likewise, the students believe that the educational system in the country might not be able to correct the academic calendar to salvage their training period and not extend it and finally, they worry that the pandemic might have affected their future chances of securing good employment in the labour market.

Hence, the study was able to answer the initial objectives that were set by demonstrating the students were willing to adopt the new learning approach but they have less faith in the educational system to implement the new learning

process. Similarly, the pandemic caused the students to worry about their future and career. Hence, more needs to be done to help students adjust to the impact of the pandemic by restoring their faith in the educational system through dialogue and a collaborative approach to improve the level of education provided within the educational system. The government should also show that there are concrete plans to support the economy and future job prospects of medical students in the country.

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