

Impact of the COVID-19 Pandemic on Symptoms and Prevalence of Depression and Stress of High School Students in Bangkok

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Abstract: Purpose: To study the prevalence and associated factors of depression and stress in grade 10-12 students in Bangkok during the COVID-19 pandemic.

Methodology: In this quantitative research, the data was collected from 398 students among 1,420 students in grades 10-12 at Satriwithaya School in Bangkok from 9 August to 14 August 2021. The data were collected via Google Forms by using the depression questionnaire (9Q) and stress questionnaire (ST5). The data were analyzed for the prevalence and associated factors by using descriptive statistics and IBM SPSS.

Findings: The prevalence of depression in grade 10-12 students were at 89.7% where significant associated factors were workload and responsibilities; relationship with family and friends; susceptibility to mental illness; having friends with mental illness, and financial impact from COVID-19 pandemic. The prevalence of stress in grade 10-12 students was at 53.52% of which significant associated factors were workload and responsibilities; relationship with family and friends; and financial impact from COVID-19 pandemic.

Conclusion: Students in grade 10-12 reported symptoms of depression at 89.7% (n=357) ranging from severe; moderate; and mild levels at 26.13% (n=104), 35.18% (n=140), 28.39% (n=113) respectively. The level of stress was mainly reported as very severe; severe; moderate; and mild at 53.2% (n=213); 20.85% (n=83); 16.33% (n=65); and 39.3% (n=37) respectively. Associated factors for both symptoms were workload and responsibilities; relationship with family and friends; and financial impact from COVID-19 pandemic. Moreover, significant associated factors for depression were mental illness and having friends with mental illness. However, if the findings were to be applied in a different context, online storage restrictions should be taken into account.

Keywords: Depression, stress, COVID-19.

1. INTRODUCTION

Background and importance of the issue

COVID-19 disease was first discovered to be humanly transmissible in the city of Wuhan in Hubei Province, China in December 2019. Since then, it spread worldwide until on 11 March 2020, World Health Organization (WHO) declared COVID-19 diseases to be a pandemic. ⁽¹⁾ COVID-19 spreads between people through contact with aerosol from those infected where incubation time can take around 1-14 days. Symptoms vary from losing the sense of smell and taste; fever; dry cough; vomiting; and red eyes. ⁽²⁾ Later on different variants of COVID-19 were discovered from assorted countries with varying degrees of symptoms. ⁽³⁾ The impact of the COVID-19 pandemic gravely affects the mentality and causes a tremendous amount of anxiety and stress for the world population. ⁽⁴⁾ This is likely due to fear of contracting COVID-19 and measures namely lockdown imposed by the government. Moreover, the associated disruption of lifestyle and daily routine; economic downturn; suspension of businesses by the government; intake of the news; and online learning all impact the mental states of the public worldwide.

As the rate of COVID-19 infection rose in Thailand, ⁽⁵⁾ the government issued measures to limit congregations of people in one place. ⁽⁶⁾ To prevent the spread of COVID-19 and the emergence of new clusters, schools and academies were ordered to close and teaching was shifted online. ⁽⁷⁾ However, online teaching has many limitations such as internet connection while limiting the student's interaction with friends and family which could all severely impact their mental state. It is especially overwhelming for senior high school students required to maintain their GPA while preparing for university admission exams. Some of them are not equipped with how to deal with stress and depression meanwhile, others may not realise they are experiencing these symptoms. Without proper treatment over a long period, students may be at risk of self-harm or potentially suicide.

As a result, this research focused on studying the prevalence and level of depression and stress level caused by the COVID-19 pandemic among grade 10-12 students at Satriwithaya School as it is considered to be one of a highly competitive school academically. ⁽⁸⁾ Furthermore, senior high school students also have to bear many academic burdens while dealing with increasing psychological effects as a result of the pandemic.

In addition, this research is also interested in studying factors predicting depression and stress from the COVID-19 pandemic among grade 10-12 students. A total of 12 factors were identified including the level of education; faculty goals in higher education; workloads and responsibilities; relationship with family; relationship with close friends; susceptibility to mental illness; history of having a family member or close friend with mental illnesses; risk of contracting COVID-19; 14 days quarantine experience; a family member or close friend infected with COVID-19 patients; and the impact of the COVID-19 pandemic on the family's financial situation.

2. METHODOLOGY

Population and sample

This study was quantitative research using Google Forms to collect data from 9 August 2021 to 14 August 2021 from grade 10-12 students at Satriwithaya School in Bangkok. The total number of students was 1,420 using Taro Yamane's formula to determine the sample size of 312. The Forms were distributed via a link and QR code through the school's social network platform to ensure that students had access to the invitation to participate in the study.

Research Apparatus

Research data was collected through Google Forms dictated by the research tool development process by studying the relevant theories before finalising a questionnaire consisting of 3 parts as follows:

1. Demographic factors included questions on the level of education; faculty goals in higher education; workload and responsibilities; relationship with family; relationship with close friends; susceptibility to mental illnesses; history of having a family member or close friend with mental illnesses; risk of contracting COVID-19; 14 days quarantine experience; a family member or close friend infected with COVID-19; and the impact of the COVID-19 pandemic on the family's financial situation.
2. Depression questionnaire (Depression questionnaire 9Q)
3. Stress questionnaire (Stress questionnaire ST5)

Statistical Analysis

The descriptive analysis presented frequency (n); percentage (%); mean (M); standard deviation (SD); sociological characteristics that were determined by sample size, independent t-test and ANOVA, as appropriate. The correlation between results was calculated by Pearson's correlation.

Research Ethical Guidelines

This research collected participants' data anonymously by undisclosed the student's name between grades 10-12 at Satriwithaya School through Google Forms and distributed through a link and QR code on the school's social network platform. On the Forms, the objective of the research as well as the confidentiality and anonymity of the data clause collected based on ethical guidelines were clearly stated. Completing the form was completely voluntary and no personal information was stored.

3. RESULTS

From 398 participants that completed the questionnaires, the majority were grade 12 students (n=153, 38.4%) followed by grade 11 (n=132, 33.2%) and grade 10 (n=113, 28.4%). Most of them were aiming to study in the Faculty of Social Sciences and others (n=175, 44%); followed by the Faculty of Medical Sciences; (n=111, 27.9%); undecided (n=82, 20.6%); and the Faculty of Engineering and Sciences (n=30, 7.5%).

Most of the participants had burdensome responsibilities (n=200, 50.3%), followed by moderate responsibilities (n=163, 41%) and light responsibilities (n=35, 8.8%). A large number of participants were not susceptible to mental illnesses (n=370, 93%); have no family member with mental illnesses (n=373, 93.7%) and have no close friend with mental illnesses (n=350, 87.9%).

The bulk of the participants had a moderate risk of contracting COVID-19 (n=199, 50%) and had never been in a 14 days quarantine (n=287, 72.1%). Furthermore, most of the participants had no close contact infected with COVID-19 (n=283, 71.1%) and were moderately affected by the COVID-19 pandemic financially (n=220, 55.3%), followed by severely affected financially (n=95, 23.9%) as shown in Table 1.

Table 1: Demographic Factors

Demographic Factors	N (%)
Level of education	
Grade 10	113 (28.4)
Grade 11	132 (33.2)
Grade 12	153 (38.4)
Faculty goals for Higher Education	
Medical Sciences (Medicine, Dentistry, Pharmacy, Veterinary)	111 (27.9)
Engineering and Science	30 (7.5)
Social Sciences and others	175 (44)
Undecided	82 (20.6)
Responsibilities (workload, chores, and duties)	
Light	35 (8.8)
Moderate	163 (41)
Heavy	200 (50.3)
Relationship with family members	
Bad	23 (5.8)
Average	183 (46)
Good	192 (48.2)
Relationship with close friends	
Bad	20 (5)
Average	124 (31.2)
Good	254 (63.8)
Susceptibility to mental illnesses	
Not susceptible	370 (93)
Susceptible	28 (7)
Family members with mental illnesses	
Yes	373 (93.7)
No	25 (6.3)
Close friends with mental illnesses	
Yes	350 (87.9)
No	48 (12.1)
Risk of contracting COVID-19	
Low	167 (42)

Moderate	199 (50)
High	32 (8)
14 days quarantine experience	
No	287 (72.1)
Yes	111 (27.9)
Family members or close contact infected with COVID-19	
Yes	283 (71.1)
No	115 (28.9)
Level of impact on the family's financial status from COVID-19	
Low	83 (20.9)
Moderate	220 (55.3)
High	95 (23.9)
Total	398 (100)

Overall, 89.70% (n=357) of the participants reported to have symptoms of depression with 26.13% (n=104); 35.18% (n=140); and 28.39% (n=113) stated that it was severe; moderate; and low accordingly. Grade 10 students showed the most severe level of depression at 30.97% (n=35); followed by grade 11 students at 26.52% (n=35) and grade 12 students at 22.22% (n=34).

Students showing a moderate level of depression were ranked from grade 12 students at 36.60% (n=56), followed by grade 11 students at 34.09% (n=45) and grade 10 students at 34.51% (n=39). Students reporting a low level of depression were in the order of grade 12 students at 30.07% (n=46); grade 11 students at 31.82% (n=42); and lastly grade 10 at 22.12% (n=25) as depicted in Table 2 below.

Table 2: Perception of Depression (Q9)

Level of depression	Normal	Low	Moderate	Severe	Total
Grade 10	14 (12.39)	25 (22.12)	39 (34.51)	35 (30.97)	113
Grade 11	10 (7.58)	42 (31.82)	45 (34.09)	35 (26.52)	132
Grade 12	17 (11.11)	46 (30.07)	56 (36.60)	34 (22.22)	153
Total	41 (10.30)	113 (28.39)	140 (35.18)	104 (26.13)	398

53.52% (n=213) of the participants had very high level of stress perception; 20.85% (n=83) had a high level of stress perception; 16.33% (n=65) had a moderate level of stress perception; whereas 9.30% (n=37) had a low level of stress perception. Grade 12 students showed the highest stress level perception at 50.98% (n=78); followed by grade 11 students at 52.27% (n=69) and grade 10 students at 58.41% (n=66).

Additionally, grade 12 students also expressed a high level of stress perception at 21.57% (n=33); followed by grade 11 students at 21.21% (n=28) and grade 10 students at 19.47% (n=22). For a moderate level of stress perception, grade 12 students were marked at 17.65% (n=27); followed by grade 11 students at 18.94% (n=25); and grade 10 students 4 at 11.50% (n=13). In terms of a low level of stress perception, grade 10 students ranked at 10.62%; followed by grade 12 students at 9.80% (n=15); and lastly by grade 11 students at 7.58% (n=10) as shown in Table 3.

Table 3: Perception of Stress Levels (ST5)

Level of stress	Low	Moderate	High	The Highest	Total
Grade 10	12 (10.62)	13 (11.50)	22 (19.47)	66 (58.41)	113
Grade 11	10 (7.58)	25 (18.94)	28 (21.21)	69 (52.27)	132
Grade 12	15 (9.80)	27 (17.65)	33 (21.57)	78 (50.98)	153
Total	37 (9.30)	65 (16.33)	83 (20.85)	213 (53.52)	398

Through Pearson's correlation analysis between factors associated with causing depression, it was discovered that workloads and responsibilities; relationship with the family; relationship with close friends; susceptibility to mental illnesses; having a close friend with mental illnesses and the financial impact on the family due to COVID-19 were correlated and statistically significant ($P < 0.05$).

From the analysis of the correlation of factors causing stress, it was found that the relationship with family; relationship with close friends; and the financial impact on the family due to COVID-19 were associated and statistically significant ($P < 0.05$) as portrayed in Table 4.

Table 4: Pearson's correlation of associated factors

Variables	Level of depression	Level of stress
	(P-value)	(P-value)
Level of education	0.635	0.511
Faculty goals for Higher Education	0.278	0.101
Workloads and other responsibilities	0	0.006
Relationship with family members	0	0.011
Relationship with close friends	0.036	0.006
Susceptibility to mental illnesses	0.005	0.317
Family members with mental illnesses	0.469	0.727
Close friends with mental illnesses	0	0.07
Risk of contracting COVID-19	0.014	0.759
14 days quarantine experience	0.937	0.524
Family members with COVID-19	0.839	0.833
Financial impact in the family due to COVID-19	0	0

4. DISCUSSION

From the results of the research on the mental health of senior high school students during the COVID-19 pandemic, ⁽⁹⁾ it was revealed that 89.7% (n=357) of them reported symptoms of depression. Of these 26.13% (n=104); 35.18% (n=140); 28.39% (n=113) stated that it was severe; moderate and low respectively. In regards to the level of stress perception, most students experienced in order of the highest level at 53.2% (n=213); high level at 20.85% (n=83); moderate level at 16.33% (n=65); and low level of stress perception at 39.3% (n=37). Senior high school students had to focus on preparing for their university admission exams ⁽¹⁰⁾ while maintaining a GPA as required by the university admission terms where there is an increasing level of competition at Satriwithaya School annually. ⁽¹¹⁾ These factors have contributed to causing symptoms of stress and depression among the students.

Additionally, during the time of research, the government imposed lockdown measures ⁽¹²⁾ and schools and academies were shut ⁽¹³⁾ therefore students had to study online from home. ⁽¹⁴⁾ They had to quickly adjust themselves to a new format of online learning either via a computer or tablet; a new environment of learning; a different format of work and submissions. All of these factors negatively affected the student's physical and mental state significantly ⁽¹⁵⁾ with an impact on their eye conditions as an example. Students had to sit in front of a computer in the same position for over 8-10 hours a day where there are no measures in place to relieve them from stress or to aid those without proper equipment or internet connection to take part in the online classes. ⁽¹⁶⁾ Subsequently, the rate of students with depression was more prevalent.

Additionally, students were faced with the same, mundane routine and environment while compulsory social distancing led to isolation and loneliness making them more susceptible to depression in the long run. ⁽¹⁷⁾ Moreover, the intake of the news on the spread of COVID-19 can cause a sense of anxiety and panic for the audience which can ultimately lead to mounting stress.

From the research, it was highlighted that relationship with family and close friends; having a close friend with mental illnesses; financial impact in the family due to COVID-19 were the key factors that lead to the prevalence of depression. The most significant variable affecting the level of depression for grade 10-12 students in descending order were relationships with family; relationships with close friends; financial impact in the family due to COVID-19; susceptibility to mental illnesses; having a close friend with mental illnesses; the number of responsibilities; and having a family member with mental illnesses. All of which were also statistically significant.

In terms of the level of stress, the contributing factors were responsibilities; relationships in the family; relationships with close friends; and financial impact in the family due to COVID-19. The most notable and statistically significant factors causing stress for grade 10-12 students in descending order were financial impact in the family due to COVID-19; responsibilities; relationships with friends and finally relationships with family.

All of the above factors affect students psychologically as they added to their already existing coursework and chores. Nevertheless, if the students have a good relationship with their family, this could help alleviate their stress and depression level as there is someone who can allow them to exchange ideas, listen, and advise them on their concerns. However, if their family relationship is poor, the students may end up feeling isolated which could lead to symptoms and prevalence of depression.

More importantly, if the students are susceptible to mental illnesses or their family members and friends have mental illnesses, there is a heightened likelihood of depression and stress or other various mental conditions more than others. Factors such as genetics and personality traits could potentially be affected as a result of having family members or close contact with mental illnesses. This includes an inclination to be pessimistic or a tendency to fixate on their deficiencies.⁽¹⁸⁾ Additionally, families that are affected financially from COVID-19 may undergo more stress than average as their incomes may not suffice to secure essential commodities for daily life.

Limitations

As the research was conducted during the COVID-19 pandemic, the data can only be collected via Google Forms, therefore participation was limited to those who had access to the internet.

5. CONCLUSION

Among grade 10-12 students, it was discovered that 89.7% (n=357) reported to show symptoms of depression, of which 26.13% (n=104); 35.18% (n=140); and 28.39% (n=113) expressed severe; mild; and low level of depression accordingly. In terms of stress perception, 53.52% (n=213); 20.85% (n=83); 16.33% (n=65); and 9.30% (n=37) had shown the highest; high; moderate; and low level of stress perception respectively. The research has revealed that symptoms and prevalence of depression and stress are related to the degree of responsibilities; relationship in the family; level of friendship; and financial status of the family as a result of COVID-19. Moreover, reports of depression were linked to relationships with family members and friends having mental illnesses. Nevertheless, to apply this study in other contexts, online data collection methods should also be taken into consideration.

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