

## The Prevalence of Depression in Chinese University Students and their Parents; Amidst COVID-19 Crisis: A Cross-Sectional Study

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### ABSTRACT

Depression among university and college students is on the rise across the globe. It is speculated that the present economic shockwaves due to COVID-19 might have increased the prevalence of depression in university students as well as in their parents. The present cross-sectional study provided comprehensive evidence on the prevalence of depression in parents of Chinese university students as well as in the latter amidst COVID-19. The evidence suggests that the prevalence of parental depression in China could be as high as 47.15% [10]. Also the previous studies reported that the prevalence of depression in Chinese university students could range from 25.7% to 31.2% [3].

The present study showed that the prevalence of depression in parents of Chinese university students and the students themselves were 18.9% and 33.1%, respectively. Therefore, since the previous studies showed that the depression in Chinese parents is high as 47.15% [10], which indicates that the COVID-19 crisis might not have increased the incidences of depression in Chinese parents. But as the prevalence of depression in Chinese University students reported in this study was marginally higher compared to previous studies it could be inferred that the COVID-19 crisis might have increased depression in Chinese university students by 2%.

**Keywords:** Chinese university students; Parents; COVID-19; Prevalence; Depression

### INTRODUCTION

Depression is a neuropsychiatric disorder that is featured by low mood and an intention of self-harm. Depression not only affects the physical, mental, and social well-being of those affected but also those surrounding them, especially their family members, including spouses and children [7]. It is estimated that 15% of adolescents would suffer from depression by the time they reach 18 years. Gladstone et al [4] acknowledged that the prevalence of depression is two to four times higher in children of depressed parents. Depression among parents is significantly on the rise and is often higher than in the general population. The rates of parental depression in China could be as high as 47.15% [10] depending upon the demographic and geographic background. Parental depression and its impact on children have received wide focus among researchers over the past two decades because parental depression predisposes the risk of different psychotic disorders in children that could range from depression to anxiety.

Studies suggest that 14% of the urban children and 23% of the rural children in China exhibit symptoms of depression [10]. The rise in the prevalence of depression in Chinese students has been largely attributed to parental pressure over academics [1]. Apart from parental pressure, social problems and family problems further precipitate depression in Chinese students. Gao et al [3] pointed out that the prevalence of depression in Chinese university students could range from 25.7% to 31.2%. The increased prevalence of depression in Chinese students than in general causes, such as academic pressure, and family violence. Early-onset depression in children and depression in students is strongly unsolicited in China. The nation launched different programs such

as mental health services in mitigating depression in the target population. It is necessary to identify the prevalence of parental depression in university students because children of depressed parents not only exhibit poor social functioning and academic development but they are also vulnerable to different psychiatric diseases and suicide. An understanding of the prevalence of parental depression in Chinese university students and its impact on them would help to tailor mental health interventions for the target populations. Previous studies have reported the prevalence of parental depression in China, but they were either specific to a single province or across the entire population of parents. The present research expanded the study population to various provinces in China as well as those in Macau. The study provided an updated statistics on the prevalence of depression in Chinese university students and their parents as well as their episodes of depression and anxiety.

### METHODOLOGY

The study was conducted as a cross-sectional survey involving students (n=168) from different universities in China as well as Macau. An online invitation was sent to the target population to participate in the study. The students who gave consent were permitted to access the semi-structured interview that was provided through the SurveyMonkey.com hyperlink. The semi-structured interviews inquired regarding the perception of depression in their parents.

Moreover, the interview questions also inquired the status of depression in the students, the duration of depression in them and their parents, and the level of anxiety in them. Apart from the duration of depression, the participants were required to express their responses on a 5-point Likert scale (1= strongly disagree, 2=disagree, 3= partially agree, 4= agree, and 5= strongly agree). The

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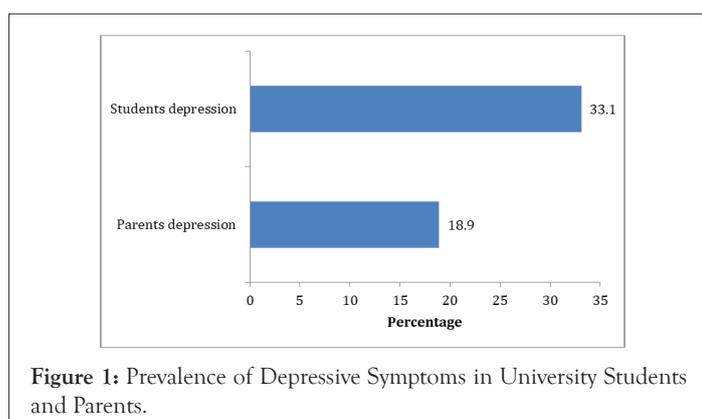
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prevalence of depression in parents and university students reported was on the basis of the percentage of responses in "agree" and "strongly agree," and 50% of the responses in the "partial agree" category. The 50% cutoff was considered because it might be possible that half of the students could actually identify depressive symptoms while the rest 50% might not.

Descriptive statistics used in this study include frequency, percentages for Parental depression and student's depression, and mean and standard deviation for the durations of depression and anxiety. Pearson's correlation coefficient was conducted to explore the relationship between different variables. The correlation analyses were interpreted at the 0.05 level of statistical significance. Finally, all statistical tests conducted in this study were performed by the SPSS (IBM-SPSS, version 26) software.

## RESULTS

Table 1 and Figure 1 reflected that the prevalence of depression in parents of Chinese university students is 18.9%. These findings are lower than the previous studies that showed that depression in parents of Chinese students is 47.15% [10]. However, the parent population in Zhou et al [10] research included parents from students belonging to different academic grades.



depression in Chinese university students was almost two times more than the prevalence of depression in their parents (33.1% versus 18.9%). The present study showed that the rates of depression in university students were almost comparable or marginally higher than reported by previous studies (33.1% versus 25.7% to 31.2% [3]).

Considering that the prevalence of depression in university students reported in this study was higher than the previous studies, there could be two possibilities for the higher rates of depression. Firstly, it could be because of the depression in the parents of students. This is because the evidence suggests that 50% of children of the depressed parents suffer from depression. As the study showed that the prevalence of depression in the parents was 18.9%, so it could be predicted that at least 9.45% of the students had clinical depression. Secondly it could be inferred that the COVID-19 crisis might have increased depression in Chinese University students. As most of the students attended the academic session over digital platforms and online mode due to the restrictions related to social distancing. The lack of social functioning and opportunities for socialization might have further increased the risk of depression. Studies suggest that work from home due to the COVID-19 crisis has significantly increased the prevalence of depression across professionals from diverse fields. Therefore, it is not surprising why the percentage of depression in university students reported in this study was higher than in previous studies. In fact, the literature suggests that the COVID-19 crisis has led to depression in many target populations, which substantiates the high percentage of depression in university students.

Table 3 reflected that the mean duration of depression in parents of university students were 32.65 months, while the duration of depression in students was 17.88 months. These findings suggested that in most instances, parental depression precedes depression in their children. These findings are aligned with the previous studies that necessitated mental health screening in parents. The findings also endorse the need for mental health screening of children of depressed parents as early as possible.

Table 3 further highlighted mean anxiety score in university students was 3.0 months. However, it remained unclear whether such anxiety stemmed from parental depression or other factors. To explore such assumptions, correlation analysis was undertaken.

Table 2 and Figure 1 reflected that the prevalence of depression in Chinese university students is 33.1%. Nevertheless, the prevalence of

**Table 1:** Prevalence of parental depression in Chinese university students.

		Frequency	Valid Percent
Valid	1	38	34.2
	2	44	39.6
	3	16	14.4
	4	9	8.1
	5	4	3.6
	Total	111	100.0
Missing	System	57	
	Total	168	

**Table 2:** Prevalence of depression in Chinese university students.

		Frequency	Valid Percent	Valid Percent
Valid	1	17	16.8	
	2	36	35.6	
	3	29	28.7	
	4	13	12.9	
	5	6	5.9	
	Total	101	100.0	
Missing	System	67		
	Total	168		

**Table 3:** Descriptive statistics for the duration of depression and anxiety in the respective stakeholders.

	Descriptive statistics				
	N	Minimum	Maximum	Mean	Std. deviation
Parents duration of depression	49	4	80	32.6531	19.5038
Students duration of depression	44	2	90	17.8864	14.9965
Students anxiety	168	1	5	3.0298	0.90524
Valid N (list wise)	42				

The correlation analysis (Table 4) confirmed that the duration of parental depression is significantly and positively correlated with the duration of depression in the concerned stakeholders ( $r=0.510$ ,  $p=0.001$ ). However, the correlation analysis did show that the incidence of parental depression does predispose the

risk of anxiety in university students ( $r=0.197$ ,  $p=0.037$ ). On the other hand, the correlation analysis further revealed that anxiety in university students is significantly and positively correlated with their duration of depression ( $r=0.436$ ,  $p=0.003$ ).

**Table 4:** Correlation analysis between the different bivariate variables.

		Correlations				
		Parents depression	Students depression	Parents duration of depression	Students duration of depression	Students anxiety
Parents depression	Pearson Correlation	1	0.122	-0.007	0.301	.197*
	Sig. (2-tailed)		0.298	0.967	0.084	0.037
	N	112	75	37	34	112
Students depression	Pearson Correlation	0.122	1	-0.176	-0.024	-0.009
	Sig. (2-tailed)	0.298		0.305	0.895	0.930
	N	75	101	36	32	101
Parents duration of depression	Pearson Correlation	-0.007	-0.176	1	.510**	0.252
	Sig. (2-tailed)	0.967	0.305		0.001	0.080
	N	37	36	49	42	49
Students duration of depression	Pearson Correlation	0.301	-0.024	.510**	1	.436**
	Sig. (2-tailed)	0.084	0.895	0.001		0.003
	N	34	32	42	44	44
Students anxiety	Pearson Correlation	.197*	-0.009	0.252	.436**	1
	Sig. (2-tailed)	0.037	0.930	0.080	0.003	
	N	112	101	49	44	168

\*Correlation is significant at the 0.05 level (2-tailed).

\*\*Correlation is significant at the 0.01 level (2-tailed).

## DISCUSSION AND CONCLUSION

These findings suggested that Chinese university students are exposed to various triggers apart from parental depression that predisposes them to the risk of depression and anxiety. These findings are aligned with the previous studies that reported that the prevalence of depression in Chinese students could range from 25.7% to 31.2% [3]. Since the prevalence of depression in Chinese university students is near the upper limits of this range, it could be inferred that students might develop a certain amount of resilience by the time they are of the university-going age [11]. However, they might tend to suffer silently from depression as their age progresses. These assumptions are based on the observations of Pilkowski [7], who showed that the prevalence of depression in children who witness parental depression increases during the age group of 18 to 20 years. On the contrary, exposure to parental depression during childhood causes impaired social functioning in the concerned stakeholders. Therefore, impaired social functioning is evident in the target population by the time they reach university-going age. There could be two fates in the concerned stakeholders upon reaching the referred age group. First of all, they could develop adequate coping and resilience to overcome the impact of parental depression on their mental well-being. Wang et al [12] depicted Chinese students could develop effective coping against challenges. Secondly, the concerned stakeholders might suffer from internalizing problems and are unable to cope with parental depression. The latter might

be more vulnerable to depression and other psychotic disorders during late adolescence or early adulthood. These findings suggest that there could be other causes apart from parental depression that predisposes the risk of depression in Chinese university students. These assumptions are supported by findings of Chen et al [1] and Chen [2], which showed socioeconomic conditions, peer pressure, family violence, and parental expectations are some of the major causes of depression in Chinese university students.

The present study helped to understand the mechanism of development of depression in Chinese university students as a function of parental depression. The correlation analysis showed a positive relationship between the incidence of parental depression and the development of anxiety in Chinese university students. Hence, it could be inferred that the respective students initially develop anxiety when they start to witness or perceive depression in their parents [8]. However, if they continue to suffer from anxiety for a long period, they are likely to develop depression [9]. This model was substantiated by the correlation analysis, which indeed showed that the duration of depression in students is positively correlated to both the duration of depression in their parents as well as their own anxiety levels. Although the present study provided robust data regarding the prevalence of depression in Chinese university students and their parents, future studies should incorporate evidence-based screening tools (such as Beck Depression Inventory or any DSM-V-based tools) for diagnosing depression [5]. Such

measures could further increase the reliability and validity of the present study and the research domain as a whole.

## RECOMMENDATIONS

The study calls for mental health counseling for university students and their parents, especially those with a history of parental depression. Liu et al [6] has confirmed help-seeking behavior in Chinese university students who affected with depression and anxiety. Teachers should identify depression in university students if they are found to remain disengaged with academics. There should be a feedback system by the university for evaluating the academic satisfaction of students as well as on their QOL parameters. Such assessment would indicate individuals who are either depressed or are at risk of developing depression.

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