An Assessment of Mental Health of College Students using DASS-21, SWEMWBS, & Satisfaction with Life

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Abstract

In the wake of COVID-19 pandemic, the present study focusses on assessing its impact on the mental health of the college students in Delhi-NCR region of India. The mental health has been measured using the DASS-21 scale of depression, anxiety, and stress. Using the sample of 1410 students, study assessed the impact of COVID-19 induced depression and anxiety on the stress, mental well-being, and life satisfaction. The hypothesis testing has been done Mann Whitney U test, Kruskal-Wallis test along with PLS SEM using SmartPLS 3.3. It has been found that the students have been experiencing severe to extremely severe anxiety, stress, and depression. There have been significant variations in DASS-21 parameters in different age groups. Further stress and mental well-being serially mediate the relationship between depression, anxiety, and life satisfaction.

Keywords: *Depression, Anxiety, Stress, Life Satisfaction, Psychological Impact.*

1. Introduction

The COVID-19 emerged in December 2019 in Wuhan, China, soon became a global threat and declared as pandemic by the World Health Organisation. The toll of infected people had been rising rapidly, creating an environment of panic worldwide. This pandemic has toppled the daily routines of almost everyone. According to Razai et al., (2020), this generation has

never experienced any pandemic situation, it demands focus on not just the public health but mental health too. Mental well-being, which relates to mental health, is defined as a state of mind where individuals are happy and satisfied with their lives and experience a connection with other people (Ryff & Keyes, 1995). It is playing a vital role in the healthy development of the youth (Singh et al., 2015). Researchers have been focusing on mental wellbeing as it is considered important for all aspects of life (Dong et al., 2016; Ng Fat et al., 2017). In the past, some researchers have identified several factors i.e., resilience, depression, anxiety, social support, and others which influence the mental well-being of a person (Khawaja et al., 2017; Q. Liu et al., 2009; Strange et al., 2016).

In the fear of a biological disaster, people face a lot of uncertainty, and they tend to ignore the psychiatric care needed (Xiang et al., 2020). According to the Royal College of Psychiatrists, people who never had any history of mental health have been showing serious symptoms of psychological disorder during this COVID-19 time. All this can be attributed to the slowly induced stress, which has been due to loss of income, isolation, job insecurity, emotional turmoil, grief, and restrictions on movement. Thus, in current COVID situation, people have been surrounded by lot of uncertainty, as nobody knows when it will end or what will happen to their life in the coming months. The psychological outcome of this uncertainty has been concerns of depression and anxiety, especially in the vulnerable group of population i.e., senior citizens, youth and people already suffering from some psychiatric problems (Tsamakis et al., 2020). Hence, it has been feared that if the pandemic lasts longer, then stress levels would increase, which may lead to depression, anxiety, and uncertainty about the days ahead and the future (De Sousa et al., 2020).

During this time of COVID-19, all the educational institutes have been advised to resort to virtual classrooms to continue the learning process. This has led to increase in uncertainty and stress levels of university fraternity including students (Sahu, 2020). It has been emphasized by Hamaideh & Hamdan-Mansour (2014) that in earlier pandemics, the students lack psychological capabilities to manage their emotional and academic needs . Some students might have lost their loved ones or someone in the family might be seriously ill. This may further aggravate their problems and increase their levels of stress and anxiety. Thus, the COVID-19 pandemic is expected to have long lasting negative effect on the psychological health of the university students (Al-Rabiaah et al., 2020; Qiu et al., 2020).

When the student is in the classroom, it is easier for a teacher to focus on students and identify the ones who need special attention and care. However, in the online mode, it becomes a challenge for the teacher. The ones who are already vulnerable can easily hide themselves in the virtual classrooms. The studies by Shehadeh et al., (2020) and Hamdan-Mansour et al., (2018) concluded that students suffer from high level of academic stress and are vulnerable to psychosocial disturbances. This stress would have a negative effect on students' learning and mental health (Al-Rabiaah et al., 2020; Kafka, 2020). According to Bronfenbrenner & Ferguson et al. (1986; 2011), adolescents' interactions with their friends, teachers, and others have a strong influence on their health and mental development. Teachers provide a strong emotional, academic and competence support which is beneficial for the development of the student (Ahmed et al., 2010; Ansong et al., 2017; R. De Liu et al., 2018; Vervoort et al., 2014). The social support helps reducing the inverse effect of stress on mind and body which leads to maintenance of good health as per the social support buffering model (Gong, 1994). Lack of social support leads to poor mental health as anxiety and depression levels increase (Guo et al., 2020). Previous research has also shown that small-scale crises have a significant

effect on the health and well-being of people (Pfefferbaum & North, 2020). In the pandemic, it has been found that overall health & longevity has significant relationship with the positive mental health (Chida et al., n.d.; Huppert, 2009; Organization, 2001).

Thus, the change in the regular lifestyle through travel bans, lockdowns, social distancing, isolation and their ramifications like unemployment, salary cuts and others, coupled with the fear of infection of Covid-19, would severely have a lasting impact on the mental health of the people. Currently, limited information is available about the impact of Covid-19 outbreak on the mental health of all the sections of the society. Further research is required to better understand how this pandemic has been affecting the mental health of the adolescents especially. The researchers hypothesized that the impact of the lockdown due to ongoing COVID-19 pandemic is influenced by age, gender, and education levels, that in a way rendering Indian adolescent vulnerable to mental health problems i.e., depression, anxiety, and stress. Thus, the objective of the present study is to analyse the impact of depression, anxiety, and stress on the mental wellbeing of the undergraduate students. This research furthers extends to study the extent to which mental wellbeing influence the life satisfaction of the students. The rest of the study has been organized in five sections. Section two highlights the literature review of the study, followed by elucidation of participants and procedures in section three. Section four presents the analysis of the results with a discussion and conclusion in section five.

2. Literature Review

A pandemic lead to an increase in the stress and anxiety levels of people who are healthy, while worsening the situation of the people with existing psychiatry problems (Shigemura et al., 2020). The previous pandemic like severe acute respiratory syndrome (SARS) outbreak in

2003, had shown very high rate of illness, fear, insomnia, and psychological distress in people who were already suffering with some mental illness (Chua et al., 2004; Mak et al., 2009; Phua et al., 2005). Pandemics are always a cause of uncertainty, however, for some people, the situations aggravate because of the disturbance in the social and work routine which leads to undue distress (Brooks et al., 2020). As a result, the people affected by mental health issues outnumber the ones who were affected by the infection (Reardon, 2015). Thus, the past instances of epidemics have observed long lasting effects of the epidemic on the mental health (Shigemura et al., 2020). The COVID-19 has demonstrated deterioration in the mental health of community members, as 79% of respondents have shown increase in mental health issues during the pandemic (Agteren et al., 2020). There have been studies that recommended immediate care for the people who have been suffering with this post-traumatic stress due to an unexpected event (Huang et al., 2020; Kang et al., 2020).

2.1. Life satisfaction and Mental well-being

Mental health is a complex concept defined by WHO as a "state of well-being in which an individual cope with normal life stress, can productively do the work, realizes his or her own abilities, and thereby able to make a contribution to his or her community" (WHO, 2013). It refers to how people use determinants i.e., satisfaction with life, lack of depression, anxiety, positive moods, and emotions to evaluate their lives (Ed Diener, Emmons, Larsen, et al., 1985). As these determinants measure the subjective well-being of a person, it becomes vital to establish a significant and meaningful relation between them. With a surge in discussions related to depression and mental health illnesses, researchers (Guney, 2009) observed that life satisfaction is statistically significant with depression, anxiety in university students. As per Diener (1994a), life satisfaction is a subjective as well as cognitive evaluation of an individual's life based on his ability to strike a balance between personal goals and

accomplishments. It is considered as a measure of well-being which is an important indicator of mental health (Vaillant, 2003) and a vital component of quality of life (QOL) (Moons et al., 2006). The studies have highlighted that with fewer physical and mental illnesses, greater happiness there has been high satisfaction with life, along with other favourable quality of life measures (Diener, 1994b; Michalos, 2003). The most used instrument to measure is Satisfaction with Life Scale (SWLS) developed by Diner et al., (1985).

Research on well-being and mental health have shown that health status is a very crucial factor in influencing the well-being (Boarini, 2012; Ed Diener & Chan, 2011; Dolan et al., 2008). According to Layard et al., (2013) and Rissanen et al., (2013), life satisfaction is inversely related with the presence of mental illness. There have been two theories of mental wellbeing i.e., objective, and subjective. The objective theories of wellbeing are majorly based on the works of Amartya Sen in the field of welfare economics. In contrast to objective theories of wellbeing that focus on the human capabilities needed to improve the quality of life (Bourke & Geldens, 2007), the subjective theories of wellbeing focus on the subjective overall life evaluations. It relates to the specific spheres in life such as school, work, and family (E. Diener & Ryan, 2009). These theories emphasise on two key components, affect and life satisfaction. Affect deals with the feelings, moods, and emotions, and further extended to positive and negative emotions. When the negative emotions are overpowered by the positive emotions, then one experiences subjective wellbeing (Diener et al., 1999). The other component, life satisfaction revolves around school, work, and family (Diener & Ryan, 2009).

Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) was developed in 2007. Its objective was to support the public mental health through the monitoring of mental wellbeing, along with the study of determinants and evaluation of wellbeing interventions (Weich et al., 2007). The theoretical concept behind the WEMWBS states that mental wellbeing consists of

two main experiences, i.e., hedonia, which is a feeling of high positive effect and eudaimonia, which is a feeling of blessedness or functioning well (Deci & Ryan, 2008; Stewart-Brown, 2017). According to (Chida & Steptoe, 2008; Siahpush et al., 2008), mental wellbeing is a modifiable factor of longevity and safeguards against any disease in the future. The scale

combines the feelings as well as the functioning of mental wellbeing at the positive side of the mental health continuum. Previous researchers have stated that WEMWBS is an easy scale and is credible in measuring the mental wellbeing (Stewart-Brown, 2015). Short Warwick–Edinburgh Mental Wellbeing Scale (SWEMWBS), which is a seven-item version of WEMWBS, was developed through Rasch modelling in 2009 (Stewart-Brown et al., 2009). SWEMWBS, because of its robust measurement properties and brevity is more often used to monitor the mental wellbeing. It relates more to the functioning rather than to feelings.

2.2. Depression, Anxiety and Stress

When the life of a student transitions from school to university, he/she is likely to experience a pressure which leads to distress. According to Fisher & Hood (1987), two months before university entry to six weeks into the program, a student normally experience increased levels of distress. Homesickness, financial constraints, and academic commitments have been identified as the sources of stress (RCP Report, 2003). During the outbreak of SARS, it was observed that younger people were most vulnerable to mental health issues (Sim et al., 2010). The fear of being infected, coupled with closure of businesses, schools, and colleges lead to a negative psychological impact on people (Van Bortel et al., 2016). The students may suffer from psychological stress leading to anxiety, depression, improper diet, lethargy, and physiological stress (Wang et al., 2020). Depression, anxiety, and stress are considered crucial indicators of mental health among the adolescents (Tee et al., 2021). Apart from the epidemiological evidence of relation between health outcomes and the social factors, it is

imperative to understand how stress mediates the relation between mental wellbeing & life satisfaction (Bowen et al., 2009; Deaton, 2002).

Past studies conducted on the students aged between 13-18, have reported high levels of depression among girls in comparison to boys, however both were indifferent when scores were compared for anxiety and stress (Bhasin et al., 2010). A study conducted among south Indian urban adolescents, observed that while 37.1% respondents were mildly depressed, 19.4% were moderately, and 4.3% were severely depressed (Mohanraj & Subbaiah, 2010). Another study on young Indian males, observed depression symptoms in 18.5% respondents, while anxiety and stress were observed in 24.4% and 20% respondents (Sahoo & Khess, 2010). Thus, these relationships and associations vary according to developmental ages (S Suldo, 2006). The study conducted by Wang et. al., (2020) reported higher levels of anxiety and depression among the female respondents having the COVID-19 symptoms.

H1: Depression, Anxiety and Stress varies with age.

H2: Depression, Anxiety and Stress varies with education level.

H3: Depression, Anxiety and Stress varies with gender.

A study on the Chinese population, post few weeks of COVID-19 outbreak has been performed to examine its psychological impact. Half of the sample population comprised of students in China. It has been concluded by the researchers that students experienced high levels of anxiety, depression, and stress during the COVID-19 pandemic (Sim et al., 2010). During the outbreak of SARS, it was observed that younger people most vulnerable to mental health issues (Sim et al., 2010). The students worry about their academic development and future uncertainties, thus adversely affecting their mental health. Covid-19 might have a

severe impact on the career opportunities due to looming global recession (Sahu, 2020), predominantly for the final year students, who would be graduating. Adverse events with the course of time tend to have a significant impact on stress and depression. According to the study of Vindegaard and Benros (2020), within few weeks of lockdown there has been

instances of low psychological well-being with higher levels of anxiety and depression among the public. (Wang et al., 2020) concluded severe mental health implications of ongoing pandemic and lockdown followed by closure of educational institutions on the students. Various existing studies have used the DASS-21 (Depression, Anxiety and Stress Scale) by Lovibond and Lovibond (1995) to measure the psychological impact. It has high psychometric properties (Jun et al., 2018; Tran et al., 2013). In the study on Chinese population by Oei et al., (2007), the female respondents overall DASS-21 score was higher as compared to male counterparts. The studies also concluded positive association of stress with the depression and anxiety (Edimansyah et al., 2008). Few researchers have shown that teenagers consistently report lower levels of life satisfaction as compared to the younger population (CL Proctor, 2009, 2010; L Goldbeck, 2007). This can be possibly because of increased academic demands thus leading to the decrease in life satisfaction in college students.

Most of the existing research is related to impact on medical staff, assessment of clinical implications of infected population, genome testing, health infrastructure challenges along with global health governance practices. Although some of the studies from India have evaluated the psychological impact of COVID-19 pandemic on general population, and health care workers, limited number of studies from India have focused on college going i.e., undergraduate, and postgraduate students. As highlighted in literature, earlier pandemics have shown the severe effect on mental health of the people and can have a long-lasting psychological implication (Banerjee, 2020; Reardon, 2015; Shigemura et al., 2020)

H4 & H5: Depression & Anxiety adversely affects the stress.

H6 & H7: Depression & Anxiety negatively affect the life satisfaction.

H8: Stress & Mental Wellbeing serially mediate the relationship of depression & life satisfaction.

H9: Stress & Mental Wellbeing serially mediate the relationship of anxiety & life satisfaction.

Based on this background, this study was undertaken to assess the psychological impact of COVID-19 pandemic on the students living in capital of India i.e., Delhi and National capital region (NCR). As per Rajkumar (2020) there has been a need to research on the impact of the pandemic on the vulnerable young population. The main objective of this study has been to explore the links between depression, anxiety, stress, life satisfaction and mental wellbeing. The researchers have tried to fill in the gap in empirical literature by performing the exploratory study. The objective of this study has been to (a) study the level of depression, stress, and anxiety; (b) examine the impact of depression and anxiety on the stress; (c) investigate the indirect effect of stress and mental wellbeing on the life satisfaction.

3. Participants & Procedure

This was an online survey, which was circulated by email as well as social media to undergraduate and post graduate students in Delhi-NCR, India during October 12, 2020 – October 20, 2020. The students have been identified through the author's host institutions and then those students were requested to forward it among their contacts. Also, various social media platforms were used for wider circulation of the survey among students studying in different colleges across Delhi/NCR.

3.1. Instruments

The structured questionnaire comprised of demographic information related to age, gender, and level of education. The next three sections asked the questions about the DASS i.e., depression, anxiety, and stress, followed by mental wellbeing and life satisfaction.

DASS21: The mental health was assessed by using the depression, anxiety, and stress scale (DASS21) (Lovibond, S.H.; Lovibond, 1995). The DASS 21 comprises of scales of Depression, Anxiety and Stress measured by seven statements each. Every statement is rated on a four-point scale that ranges between 0 (not at all) to 3 (almost every day). The score of depression, anxiety and stress were obtained by adding the score given by student in each of the seven statements and then multiplying it by two. Thus, maximum score on each of the sub-scales can be 42 (3*7=21*2=42). As suggested by the DASS21 scale, categories for measuring the level of mental health have been classified as normal, mild, moderate, severe, and extremely severe. The DASS-21 is the well validated scale and each of its three sub-scales have the reliability of 0.829, 0.846 and 0.912, respectively.

Mental Wellbeing: To assess the mental wellbeing of the students, this study uses SWEMWBS as it is convenient in monitoring the mental wellbeing and possess relevant psychometric properties (NHS Health Scotland, 2008). The 14-item scale on thoughts and feelings, has been shortened to seven positively phrased statements to measure the mental wellbeing among children and young people (Stewart-Brown, 2015). Every item in the scale has been rated on a 1-5 scale with 1 being none of the time to 5 being all the time. In the present study, mental wellbeing has the reliability of 0.88.

Life satisfaction: The scale to measure the life satisfaction of the students. It is unidimensional scale of five items given by Diener et al (1985). The seven-point scale of strongly disagree (1)

to strongly agree (7) has been used to measure the satisfaction with life (SWL). The SWL scale has a reliability of 0.87.

3.2. Data analysis

Descriptive and categorical analysis has been conducted in the form of mean, standard deviation, frequency, and percentages. The hypothesis testing with respect to demographics has been conducted by Mann Whitney U test and Kruskal-Wallis test. The DASS subscales has been grouped into three groups i.e., normal to mild, moderate, and severe to extremely severe. The relationship between the DASS 21, mental wellbeing and life satisfaction has been assessed by structural equation modelling on SmartPLS 3. The SmartPLS has been applied to test the specific indirect effect of the serial mediation present in the model and for estimating the predictive power of the model for further applicability and deliberations. The PLS SEM put fewer restriction on the data with respect to the nature of the distribution and the sample size. The reliability and validity of the constructs have been assessed through Cronbach alpha (α), composite ratio (CR), rho A and average variance extracted (AVE). Since all scales have been validated well, thus α and CR values have been greater than 0.7 and AVE>0.5, hence meeting the criteria of constructs reliability and validity. Further mediation analysis has been conducted by bootstrapping technique, using 5000 bootstrap samples, followed by assessing the prediction power of the proposed model using the PLS Predict.

4. Results

The total of 1495 students completed the questionnaire, of which 1410 were found to be complete and reliable. Hence, further analysis was limited to 1410 responses. A total of 47.1% (n=664) of the participants were females and 52.9% (746) were males in the final sample. There were 77.09% of undergraduate and 22.91% post graduate students in the study sample. The majority (91.65%) of the students were in the age bracket of 18-23 years. On DASS-21,

38%, 26.3% and 21% had moderate, severe, and extremely severe depression, respectively. Nearly half (47.3%) of the students reported extremely severe anxiety. Nearly half (45.6%) of the participants reported moderate level of stress; additionally, 28.7% reported severe stress and 8.7% reported extremely severe stress in the COVID-19 pandemic (Table 1).

Table.1. Percentage of students with different DASS 21 levels

	Normal	Mild	Moderate	Severe	Extremely Severe
Depression	6.3%	7.5%	38.8%	26.3%	21.0%
Anxiety	21.5%	5.4%	16.9%	8.8%	47.3%
Stress	9.4%	7.7%	45.6%	28.7%	8.7%

The table 2 depicts these associations between the demographic variables and the DASS-21 subscales. Out of all the age groups, 60% of the less than 17 years students (most probably students who just entered the college i.e., freshers had severe to extremely severe depression symptoms. However, rest all the other students from 18 years to 26 years, more often have moderate depression. In terms of stress, higher proportion of participants aged < 17 years had moderate level of stress. Approximately, more than 50% of the students in all the age groups have severe to extremely severe anxiety issues with maximum being in those aged 18-20 years i.e., 58%. Thus, H1 is rejected as level of depression, stress and anxiety varies across the age groups.

When the association of DASS-21 and education was evaluated, no significant difference was noted between those pursuing undergraduate and postgraduate courses (Table 3). Similarly, there was no difference in the prevalence of depression, anxiety, and stress among participants of either gender (Table 4). Thus, in case of education, H2 failed to be rejected, i.e., there has

been no significant difference with respect to levels of depression, stress, and anxiety in UG

and PG students.

Table.2. Association between the age and DASS21 variables

Age	Depression			
	Normal-mild	*Moderate*	*Severe - Extremely Severe*	*p-value*
≤17 years	0.00%	40.00%	60.00%	0.02*
18 – 20 years	13.80%	36.30%	49.80%	
21 – 23 years	14.70%	41.00%	44.30%	
≥24 years	10.60%	44.70%	44.80%	
Age	Stress			
	Normal-mild	*Moderate*	*Severe - Extremely Severe*	*p-value*
≤17 years	0.00%	60.00%	40.00%	0.04*
18 – 20 years	18.70%	46.10%	35.20%	
21 – 23 years	16.70%	44.80%	38.50%	
≥24 years	10.60%	44.70%	44.70%	
Age	Anxiety			
	Normal-mild	*Moderate*	*Severe - Extremely Severe*	*P value*
≤17 years	40.00%	20.00%	40.00%	<0.001*
18 – 20 years	26.60%	15.40%	58.00%	
21 – 23 years	26.70%	18.10%	55.30%	
≥24 years	28.90%	21.10%	50.00%	

*p values-based on Kruskal Wallis test, with significance level of 0.05

Table.3. Association between education level and DASS21

Education Level	Depression			
	Normal-mild	*Moderate*	*Severe - Extremely Severe*	*p-value**
PG	13.4%	46.2%	40.3%	0.119
UG	13.9%	36.7%	49.4%	
Education Level	Stress			
	Normal-mild	*Moderate*	*Severe - Extremely Severe*	*p-value**
PG	10.9%	50.4%	38.6%	0.383
UG	19.0%	44.1%	36.9%	
Education Level	Anxiety			
	Normal-mild	*Moderate*	*Severe - Extremely Severe*	*p-value**
PG	27.7%	18.5%	53.8%	0.656
UG	26.6%	16.5%	56.8%	

*p values-based on Kruskal Wallis test, with significance level of 0.05

Likewise, the association of DASS21 subscale with education levels, same has been observed in case of gender. There has been no significant difference in levels of depression, anxiety, and stress in males and females, as the p value is not significant. Thus, H3 has been rejected.

Table.4. Association between gender and DASS21

Gender	**Depression**			**p-value***
	Normal-mild	*Moderate*	*Severe - Extremely Severe*	
Female	10.2%	41.6%	48.1%	0.15
Male	17.1%	36.4%	46.6%	
Gender	**Stress**			**p-value***
	Normal-mild	*Moderate*	*Severe - Extremely Severe*	
Female	12.2%	52.7%	35.1%	0.21
Male	21.4%	39.3%	39.3%	
Gender	**Anxiety**			**p-value***
	Normal-mild	*Moderate*	*Severe - Extremely Severe*	
Female	31.8%	13.9%	54.3%	0.19
Male	22.6%	19.6%	57.9%	

*p values-based on Kruskal Wallis test, with significance level of 0.05

These constructs have been modelled into structural equation modelling for assessing the mediating effect of stress and mental wellbeing on the depression, anxiety, and life satisfaction relationship, as presented in figure.1.

The measurement model results confirmed the presence of reliability, convergent and discriminant validity. All the factor loading were greater than 0.708 as suggested by (Hair et al., 2019). These have been assessed by conducting the consistent PLS in SmartPLS 3. As shown in table 5, Cronbach α, Rho A and Composite reliability (CR) have been greater than 0.70 threshold value. The Average variance extracted (AVE) has been greater than 0.5 for all the constructs. Thus, highlighting the presence of reliability and validity in the measurement model.
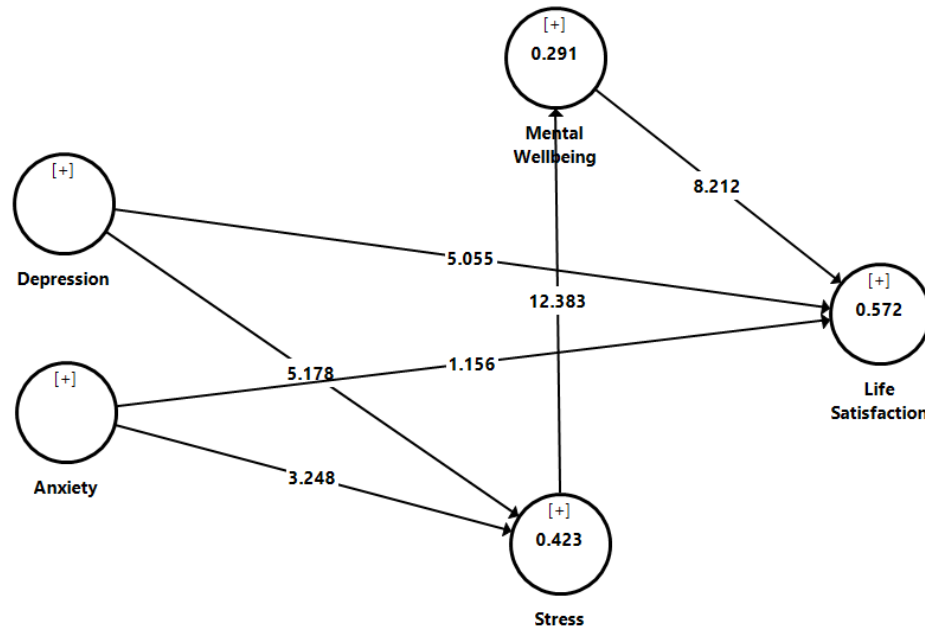
Figure.1. Structural Model

Table.5. Measurement Model results (reliability and validity)

Items	Factor Loadings	AVE	CR	Rho A	
Life Satisfaction (Diener et al., 1985b)					
In most ways my life is close to my ideal (LS1)	0.728	0.803	0.823	0.872	0.633
The conditions of my life are excellent (LS2)	0.859				
I am satisfied with my life (LS3)	0.888				
So far, I have got the important things I want in life (LS4)	0.710				
Mental Wellbeing (Stewart-Brown, 2015a)					
I have been feeling optimistic about the future (MWB1)	0.718	0.801	0.869	0.854	0.543
I have been feeling useful (MWB2)	0.695				
I have been feeling relaxed (MWB3)	0.662				
I have been dealing with problems well (MWB4)	0.781				
I have been thinking clearly (MWB5)	0.701				
I have been feeling close to other people (MWB6)	0.852				
I have been able to make up my own mind about things (MWB7)	0.831				
Stress (Diener et al., 1985b)					

I found it hard to wind down (ST1)	0.846	0.801	0.869	0.854	0.543
I tended to over-react to situations (ST2)	0.848				
I felt that I was using a lot of nervous energy (ST3)	0.758				
I found myself getting agitated (ST4)	0.781				
I found it difficult to relax (ST5)	0.729				
I was intolerant of anything that kept me from getting on with what I was doing (ST6)	0.827				
I felt that I was rather touchy (ST7)	0.814				
Depression (Diener et al., 1985b)					
I could not seem to experience any positive feeling at all (DP1)	0.901	0.959	0.960	0.966	0.802
I found it difficult to work up the initiative to do things (DP2)	0.862				
I felt that I had nothing to look forward to (DP3)	0.895				
I felt downhearted and blue (DP4)	0.845				
I was unable to become enthusiastic about anything (DP5)	0.889				
I felt I was not worth much as a person (DP6)	0.920				
I felt that life was meaningless (DP7)	0.853				
Anxiety (Diener et al., 1985b)					
I was aware of dryness of my mouth (AX1)	0.746	0.903	0.906	0.923	0.633
I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion) (AX2)	0.742				
I experienced trembling (e.g., in the hands) (AX3)	0.760				
I was worried about situations in which I might panic and make a fool of myself (AX4)	0.864				
I felt I was close to panic (AX5)	0.807				
I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat) (AX6)	0.823				
I felt scared without any good reason (AX7)	0.822				

The measurement model has been tested for the discriminant validity by HTMT ratio and results are presented in table 6. All the values have been less than 0.80 as suggested by (Hair

et al., 2019). Once the measurement model results have been validated, the bootstrapping technique has been applied to test the hypotheses.

Table.6. Discriminant Validity results

	Anxiety	Depression	Life Satisfaction	Mental Wellbeing
Anxiety	-	-	-	-
Depression	0.77	-	-	-
Life Satisfaction	0.44	0.60	-	-
Mental Wellbeing	0.40	0.48	0.654	-
Stress	0.57	0.61	0.598	0.486

The bootstrapping algorithm has been run using the 5000 bootstrap samples to test the significance of the direct and indirect effects, and the results have been presented in table 7. The present study has focused on assessing the two serial mediations i.e., depression reduces the life satisfaction of the student via increasing the stress and reducing the mental wellbeing; anxiety reduces the life satisfaction of the student via increasing the stress and reducing the mental wellbeing. Only depression has a significant negative effect on the life satisfaction (β = -0.414, p<0.05), while anxiety does not have the significant direct effect (β = -0.090, p>0.05). However, both depression and anxiety have the significant positive direct effect on stress. Thus, H4, H5, H6 were failed to be rejected while H7 was rejected.

Table.7. Structural Model results

Model paths	β	95% Bias Corrected CI		Result
		Lower	Upper	
Depression -> Stress	0.379*	0.250	0.537	Fail to reject H4
Anxiety -> Stress	0.313*	0.109	0.493	Fail to reject H5
Depression -> Life satisfaction	-0.414*	-0.567	-0.249	Fail to reject H6
Anxiety -> Life satisfaction	-0.090	-0.234	0.070	Reject H7
Depression -> Stress -> Mental Wellbeing -> Life Satisfaction	-0.106*	-0.174	-0.062	Fail to reject H8
Anxiety -> Stress -> Mental Wellbeing -> Life Satisfaction	-0.087*	-0.149	-0.034	Fail to reject H9

The total effect of depression on life satisfaction has been statistically significant with β = -0.520, p<0.05, and direct effect has been also significant β = -0.414, p<0.05. However, the total and direct effect of anxiety on life satisfaction has not been significant even after controlling the effects of mental wellbeing and stress, with β = -0.03, p= 0.974 and β = -0.090, p= 0.248, respectively. In terms of the serial mediation effect of stress and mental wellbeing on depression – life satisfaction and anxiety – life satisfaction, both has been statistically significant. Thus, the indirect effect of depression on life satisfaction of the student through stress and mental wellbeing was found significant (β = -0.087, p<0.05). Also, anxiety was found to have significant indirect effect (i.e., serial mediation) on life satisfaction through stress and mental wellbeing (β = -0.106, p<0.05). The mediation effect accounted for 20.3% of the total effect of depression on life satisfaction. Hence, the relationship of depression / anxiety with life satisfaction has been serially mediated through stress and mental wellbeing, leading to acceptance of H8 and H9.

5. Discussion and Conclusion

COVID-19 pandemic and the ensuing closure of schools and colleges has led to disruption of the studies, semester exams and the other competitive exams. This has led to disruption of day-to-day life of students. Limited number of studies has evaluated the impact of COVID-19 pandemic on the mental of health of college going students. Thus, the present study attempted to study the impact of COVID-19 pandemic and long closure of colleges on the mental health of students. Researchers found that a very large proportion of the participants had psychological issues, because of COVID-19 pandemic and closure of colleges. Among the various psychological issues, extremely severe anxiety was reported by nearly half of the participants. In terms of depression, nearly half reported severe or extremely severe depression. The results converge with the studies of De Sousa et al., (2020) and Sahoo et al., (2018). However, only one-third reported severe to extremely severe level of stress. In terms

of various demographic factors, gender, and level of education (graduate/ postgraduate) did not have any impact of the prevalence of depression, anxiety, and stress. Age had significant impact on the prevalence of depression, anxiety, and stress, with adverse outcomes being more common among those aged up to 17 years. These high prevalence figures can be because of the impact of COVID-19 on the lifestyle, education, and socializing of the students along with the uncertainty about their future endeavours. Also, due to uncertainty about the prospects of the jobs, the recent graduates and postgraduates have been experiencing more stress, anxiety, and depression. These findings suggest that there is a need to build psychological support strategies for the students in the age group of 18-26 years. This could involve development of online peer support groups, help lines and formal consultations, to help the young adults. As India is still reeling under the increasing curve of COVID-19 pandemic, and this is going to persist at least for few more months, there is a need to innovate to carry on with the education and ensure job prospects to people.

The results of structural equation modelling concluded that mediating effects of stress and mental wellbeing play a significant role in the relationship between depression/anxiety and life satisfaction in the present sample of college students. The present study found that ongoing pandemic and resultant closure of educational institutes has led to significant negative psychological impact on college students. It has been further noted that the negative psychological impact was associated with poor life satisfaction. The same results have been found by the studies of Al-Rabiaah et al., 2020; Kafka, 2020 that stress has a negative effect on student's mental health. The results of study support the findings of (Khawaja et al., 2017; Q. Liu et al., 2009; Strange et al., 2016), i.e., mental wellbeing of a person is influenced by the depression, anxiety, social support, and others. Guney (2009) study observed that life satisfaction is statistically significant with depression, anxiety in university students. As

highlighted by Sahu (2020), the COVID-19 pandemic has filled the minds of the students with uncertainty about their grades, performance, and other academic related issues. For almost every student studying online, for such a long period due to covid-19, the increased in anxiety levels with psychosocial deterioration has been a common sight (Shehadeh et al., 2020).

A person can experience subjective wellbeing when the positive emotions tend to overpower the negative emotions (Diener et al., 1999). Mental wellbeing is a modifiable factor of longevity and protects against future disease (Chida & Steptoe, 2008; Siahpush et al., 2008). However, if a person experiences stress, it inversely affects his mental wellbeing. Stress mediates the relationship between the social factors and the health outcomes (Bowen et al., 2009; Deaton, 2002). As a result, the events causing stress are likely to have severe health outcomes. Hence, the overall findings suggests that there is an urgent need to provide psychological support to young adults. The same has been emphasized by (Layard et al., 2013; Rissanen et al., 2013), that there exists a strong and robust inverse relation between life satisfaction and the presence of mental illness. In the pandemic, it has been found that overall health and longevity has significant relationship with the positive mental health (Chida et al., n.d.; Huppert, 2009; Organization, 2001).

This study has few limitations. The study was based on the combination of convenience and snowball sampling. The study sample was limited to undergraduate and postgraduate students only, who had either just taken admission, or who were either studying in the course in the second or final year. Only limited numbers of demographic factors were studied. Another limitation is coverage of the study, which is limited to students studying in any university/institute/college in Delhi/NCR only. This is a cross sectional study, and the results may not be equivalent to the clinical depression or anxiety disorder. The present has taken,

age, gender, and education as the only demographic variable for studying the mental condition

of the students. However, further studies can include nature of the job of the parents; whether

student is living with parent or not; whether anyone known to him has been infected by

COVID and if they have any mental health issues before the pandemic. The researchers can

conduct pan India study on analysing the overall mental health condition all over country.

Even post follow up can be conducted of the existing research, that is how the mental health

status have changed now, when curbs on lockdown have been eased and economy has been

trying to get back on its track.

REFERENCES

[1]. Ahmed, W., Minnaert, A., van der Werf, G., & Kuyper, H. (2010). Perceived social support and early adolescents' achievement: The mediational roles of motivational beliefs and emotions. Journal of Youth and Adolescence, 39(1). https://doi.org/10.1007/s10964-008-9367-7

[2]. Al-Rabiaah, A., Temsah, M. H., Al-Eyadhy, A. A., Hasan, G. M., Al-Zamil, F., Al-Subaie, S., Alsohime, F., Jamal, A., Alhaboob, A., Al-Saadi, B., & Somily, A. M. (2020). Middle East Respiratory Syndrome-Corona Virus (MERS-CoV) associated stress among medical students at a university teaching hospital in Saudi Arabia. Journal of Infection and Public Health, 13(5). https://doi.org/10.1016/j.jiph.2020.01.005

[3]. Ansong, D., Okumu, M., Bowen, G. L., Walker, A. M., & Eisensmith, S. R. (2017). The role of parent, classmate, and teacher support in student engagement: Evidence from Ghana. International Journal of Educational Development, 54. https://doi.org/10.1016/j.ijedudev.2017.03.010

[4]. Banerjee, D. (2020). The COVID-19 outbreak: Crucial role the psychiatrists can play. Asian Journal of Psychiatry, 50. https://doi.org/10.1016/J.AJP.2020.102014

[5]. Bhasin, S. K., Sharma, R., & Saini, N. K. (2010). Depression, anxiety and stress among adolescent students belonging to affluent families: A school-based study. Indian Journal of Pediatrics, 77(2). https://doi.org/10.1007/s12098-009-0260-5

[6]. Bowen, S., Zwi, A. B., Sainsbury, P., & Whitehead, M. (2009). Killer facts, politics and other influences: What evidence triggered early childhood intervention policies in Australia? Evidence and Policy, 5(1). https://doi.org/10.1332/174426409X395394

[7]. Bronfenbrenner, U. (1986). Ecology of the Family as a Context for Human Development. Research Perspectives. Developmental Psychology, 22(6). https://doi.org/10.1037/0012-1649.22.6.723

[8]. Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. In The Lancet (Vol. 395, Issue 10227). https://doi.org/10.1016/S0140-6736(20)30460-8

[9]. Chida, Y., & Steptoe, A. (2008). Positive psychological well-being and mortality: A quantitative review of prospective observational studies. In Psychosomatic Medicine (Vol. 70, Issue 7). https://doi.org/10.1097/PSY.0b013e31818105ba

[10]. Chua, S. E., Cheung, V., McAlonan, G. M., Cheung, C., Wong, J. W. S., Cheung, E. P. T., Chan, M. T. Y., Wong, T. K. W., Choy, K. M., Chu, C. M., Lee, P. W. H., & Tsang, K. W. T. (2004). Stress and psychological impact on SARS patients during the outbreak. Canadian Journal of Psychiatry, 49(6). https://doi.org/10.1177/070674370404900607

[11]. CL Proctor, P. L. J. M. (2009). Youth life satisfaction: A review of the literature. Journal of Happiness Studies, 10(5), 583–630.

[12]. CL Proctor, P. L. J. M. (2010). Very happy youths: Benefits of very high life satisfaction among adolescents. Social Indicators Research, 98, 519–532.

[13]. De Sousa, A., Mohandas, E., & Javed, A. (2020). Psychological interventions during COVID-19: Challenges for low and middle income countries. Asian Journal of Psychiatry, 51(April), 102128. https://doi.org/10.1016/j.ajp.2020.102128

[14]. Deaton, A. (2002). Policy implications of the gradient of health and wealth. Health Affairs, 21(2). https://doi.org/10.1377/hlthaff.21.2.13

[15]. Deci, E. L., & Ryan, R. M. (2008). Hedonia, eudaimonia, and well-being: An introduction. Journal of Happiness Studies, 9(1). https://doi.org/10.1007/s10902-006-9018-1

[16]. Diener, E. (1994a). Assessing subjective well-being: Progress and opportunities. Social Indicators Research, 31(2). https://doi.org/10.1007/BF01207052

[17]. Diener, E. (1994b). The subjective well-being. Psychosocial Intervention, 3(8), 67.

[18]. Diener, E., Emmons, R. A., Larsem, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. Journal of Personality Assessment, 49(1). https://doi.org/10.1207/s15327752jpa4901_13

[19]. Diener, E., & Ryan, K. (2009). Subjective wellbeing: A general overview. South African Journal of Psychology, 39(4), 391–406.

[20]. Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. In Psychological Bulletin (Vol. 125, Issue 2). https://doi.org/10.1037/0033-2909.125.2.276

[21]. Dong, A., Chen, X., Zhu, L., Shi, L., Cai, Y., Shi, B., Shao, L., & Guo, W. (2016). Translation and validation of a Chinese version of the Warwick–Edinburgh Mental Well-being Scale with undergraduate nursing trainees. Journal of Psychiatric and Mental Health Nursing, 23(9–10). https://doi.org/10.1111/jpm.12344

[22]. Edimansyah, B. A., Rusli, B. N., Naing, L., Mohamed Rusli, B. A., Winn, T., & Tengku Mohamed Ariff, B. R. H. (2008). Self-perceived depression, anxiety, stress and their relationships with psychosocial job factors in male automotive assembly workers. Industrial Health, 46(1), 90–100. https://doi.org/10.2486/INDHEALTH.46.90

[23]. Ferguson, Y. L., Kasser, T., & Jahng, S. (2011). Differences in life satisfaction and school satisfaction among adolescents from three nations: The role of perceived autonomy support. Journal of Research on Adolescence, 21(3). https://doi.org/10.1111/j.1532-7795.2010.00698.x

[24]. Fisher, S., & Hood, B. (1987). The stress of the transition to university: A longitudinal study of psychological disturbance, absent-mindedness and vulnerability to homesickness. British Journal of Psychology, 78(4). https://doi.org/10.1111/j.2044-8295.1987.tb02260.x

[25]. Gong, Y. X. (1994). Review of research on the relationship between social support and health. Advances in Methods and Practices in Psychological Science , 12, 34–39.

[26]. Guney, S. (2009). Life satisfaction of university students in Turkey. In 1st World Positive Psychology Conference, USA.

[27]. Guo, J., Liu, L., Zhao, B., & Wang, D. (2020). Teacher Support and Mental Well-Being in Chinese Adolescents: The Mediating Role of Negative Emotions and Resilience. Frontiers in Psychology, 10. https://doi.org/10.3389/fpsyg.2019.03081

[28]. Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European Business Review, 31(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

[29]. Hamaideh, S. H., & Hamdan-Mansour, A. M. (2014). Psychological, cognitive, and personal variables that predict college academic achievement among health sciences students. Nurse Education Today, 34(5), 703–708. https://doi.org/10.1016/J.NEDT.2013.09.010

[30]. Hamdan-Mansour, A. M., Mahmoud, K. F., al Shibi, A. N., & Arabiat, D. H. (2018). Impulsivity and Sensation-Seeking Personality Traits as Predictors of Substance Use Among University Students. Journal of Psychosocial Nursing and Mental Health Services, 56(1), 57–63. https://doi.org/10.3928/02793695-20170905-04

[31]. Huang, J. Z., Han, M. F., Luo, T. D., Ren, A. K., & Zhou, X. P. (2020). Mental health survey of medical staff in a tertiary infectious disease hospital for COVID-19. Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi = Zhonghua Laodong Weisheng Zhiyebing Zazhi = Chinese Journal of Industrial Hygiene and Occupational Diseases, 38(3). https://doi.org/10.3760/cma.j.cn121094-20200219-00063

[32]. Huppert, F. A. (2009). Psychological Well-being: Evidence Regarding its Causes and Consequences †. Wiley Online Library, 1(2), 137–164. https://doi.org/10.1111/j.1758-0854.2009.01008.x

[33]. Jun, D., Johnston, V., Kim, J. M., & O'Leary, S. (2018). Cross-cultural adaptation and validation of the Depression, Anxiety and Stress Scale-21 (DASS-21) in the Korean working population. Work (Reading, Mass.), 59(1), 93–102. https://doi.org/10.3233/WOR-172661

[34]. Kafka, A. C. (2020, March). Shock, Fear, and Fatalism: As Coronavirus Prompts Colleges to Close, Students Grapple With Uncertainty. The Chronicle of Higher Education.

[35]. Kang, L., Li, Y., Hu, S., Chen, M., Yang, C., Yang, B. X., Wang, Y., Hu, J., Lai, J., Ma, X., Chen, J., Guan, L., Wang, G., Ma, H., & Liu, Z. (2020). The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. In The Lancet Psychiatry (Vol. 7, Issue 3). https://doi.org/10.1016/S2215-0366(20)30047-X

[36]. Khawaja, N. G., Ibrahim, O., & Schweitzer, R. D. (2017). Mental Wellbeing of Students from Refugee and Migrant Backgrounds: The Mediating Role of Resilience. School Mental Health, 9(3). https://doi.org/10.1007/s12310-017-9215-6

[37]. L Goldbeck, T. S. T. B. P. H. G. H. (2007). Life satisfaction decreases during adolescence. Quality of Life Research, 16(6), 969–979.

[38]. Layard, R., Chisholm, D., Patel, V., & Saxena, S. (2013). Mental Illness and Unhappiness. IZA Discussion Paper, 7620.

[39]. Liu, R. De, Zhen, R., Ding, Y., Liu, Y., Wang, J., Jiang, R., & Xu, L. (2018). Teacher support and math engagement: roles of academic self-efficacy and positive emotions. Educational Psychology, 38(1). https://doi.org/10.1080/01443410.2017.1359238

[40]. Liu, Q., Shono, M., & Kitamura, T. (2009). Psychological well-being, depression, and anxiety in Japanese university students. Depression and Anxiety, 26(8). https://doi.org/10.1002/da.20455

[41]. Lovibond, S. H., & Lovibond, P. F. (1995). Manual for the Depression Anxiety & Stress Scales (2nd ed.). Psychology Foundation of Australia. https://maic.qld.gov.au/wp-content/uploads/2016/07/DASS-21.pdf

[42]. Mak, I. W. C., Chu, C. M., Pan, P. C., Yiu, M. G. C., & Chan, V. L. (2009). Long-term psychiatric morbidities among SARS survivors. General Hospital Psychiatry, 31(4). https://doi.org/10.1016/j.genhosppsych.2009.03.001

[43]. Michalos, A. C. (2003). Job Satisfaction, Marital Satisfaction and the Quality of Life: A Review and a Preview. https://doi.org/10.1007/978-94-017-0389-5_6

[44]. Mohanraj, R., & Subbaiah, K. (2010). Prevalence of depressive symptoms among urban adolescents in South India. Journal of Indian Association for Child and Adolescent Mental Health, 6(2).

[45]. Moons, P., Budts, W., & De Geest, S. (2006). Critique on the conceptualisation of quality of life: A review and evaluation of different conceptual approaches. International Journal of Nursing Studies, 43(7), 891–901. https://doi.org/10.1016/j.ijnurstu.2006.03.015

[46]. Ng Fat, L., Scholes, S., Boniface, S., Mindell, J., & Stewart-Brown, S. (2017). Evaluating and establishing national norms for mental wellbeing using the short Warwick–Edinburgh Mental Well-being Scale (SWEMWBS): findings from the Health Survey for England. Quality of Life Research, 26(5). https://doi.org/10.1007/s11136-016-1454-8

[47]. Oei, T. P. S., Lin, J., & Raylu, N. (2007). Validation of the Chinese Version of the Gambling Urges Scale (GUS-C). Http://Dx.Doi.Org/10.1080/14459790601157970, 7(1), 101–111. https://doi.org/10.1080/14459790601157970

[48]. Organization, W. H. (2001). The World Health Report 2001: Mental health: new understanding, new hope. https://books.google.co.in/books?hl=en&lr=&id=GQEdA-VFSIgC&oi=fnd&pg=PP11&dq=World+Health+Organization.+Mental+health:+new+understanding,+new+hope.+The+World+Health+Report.+Geneva,+Switzerland:+World+Health+Organization,+2001.&ots=d2RAZIbmvF&sig=f9vPSYyholbqUFmN8kq_TwAD20Y

[49]. Pfefferbaum, B., & North, C. S. (2020). Mental Health and the Covid-19 Pandemic. New England Journal of Medicine. https://doi.org/10.1056/nejmp2008017

[50]. Phua, D. H., Tang, H. K., & Tham, K. Y. (2005). Coping responses of emergency physicians and nurses to the 2003 severe acute respiratory syndrome outbreak. Academic Emergency Medicine, 12(4). https://doi.org/10.1197/j.aem.2004.11.015

[51]. Qiu, J., Shen, B., Zhao, M., Wang, Z., Xie, B., & Xu, Y. (2020). A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and

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policy recommendations. General Psychiatry, 33(2), 100213. https://doi.org/10.1136/GPSYCH-2020-100213

[52]. Razai, M. S., Doerholt, K., Ladhani, S., & Oakeshott, P. (2020). Coronavirus disease 2019 (covid-19): A guide for UK GPS. In The BMJ (Vol. 368). https://doi.org/10.1136/bmj.m800

[53]. RCP Report. (2003). The mental health of students in higher education.

[54]. Reardon, S. (2015). Ebola's mental-health wounds linger in Africa. Nature, 519(7541), 13–14. https://doi.org/10.1038/519013A

[55]. Rissanen, T., Viinamäki, H., Lehto, S. M., Hintikka, J., Honkalampi, K., Saharinen, T., & Koivumaa-Honkanen, H. (2013). The role of mental health, personality disorders and childhood adversities in relation to life satisfaction in a sample of general population. Nordic Journal of Psychiatry, 67(2). https://doi.org/10.3109/08039488.2012.687766

[56]. Ryff, C. D., & Keyes, C. L. M. (1995). The Structure of Psychological Well-Being Revisited. Journal of Personality and Social Psychology, 69(4). https://doi.org/10.1037/0022-3514.69.4.719

[57]. S Suldo, K. R. E. S. (2006). Academic correlates of children and adolescents' life satisfaction. School Psychology International, 27, 567–582.

[58]. Sahoo, S., & Khess, C. R. J. (2010). Prevalence of depression, anxiety, and stress among young male adults in India: A dimensional and categorical diagnoses-based study. Journal of Nervous and Mental Disease, 198(12). https://doi.org/10.1097/NMD.0b013e3181fe75dc

[59]. Sahoo, Swapnajeet; Rani, Seema; Shah, Ruchita; Singh, Ajay Pal; Mehra, Aseem; Grover, S. (2018). COVID-19 pandemic-related anxiety in teenagers. Indian Journal of Psychiatry, 62(3), 328–330. https://doi.org/10.4103/psychiatry.IndianJPsychiatry

[60]. Sahu, P. (2020). Closure of Universities Due to Coronavirus Disease 2019 (COVID-19): Impact on Education and Mental Health of Students and Academic Staff. Cureus. https://doi.org/10.7759/cureus.7541

[61]. Shehadeh, J., Hamdan-Mansour, A. M., Halasa, S. N., Hani, M. H. B., Nabolsi, M. M., Thultheen, I., & Nassar, O. S. (2020). Academic Stress and Self-Efficacy as Predictors of Academic Satisfaction among Nursing Students. The Open Nursing Journal, 14(1), 92–99. https://doi.org/10.2174/1874434602014010092

[62]. Shigemura, J., Ursano, R. J., Morganstein, J. C., Kurosawa, M., & Benedek, D. M. (2020a). Public responses to the novel 2019 coronavirus (2019-nCoV) in Japan: Mental health consequences and target populations. In Psychiatry and Clinical Neurosciences (Vol. 74, Issue 4). https://doi.org/10.1111/pcn.12988

[63]. Siahpush, M., Spittal, M., & Singh, G. K. (2008). Happiness and life satisfaction prospectively predict self-rated health, physical health, and the presence of limiting, long-term health conditions. American Journal of Health Promotion, 23(1). https://doi.org/10.4278/ajhp.061023137

[64]. Sim, K., Huak Chan, Y., Chong, P. N., Chua, H. C., & Wen Soon, S. (2010). Psychosocial and coping responses within the community health care setting towards a national outbreak of an infectious disease. Journal of Psychosomatic Research, 68(2). https://doi.org/10.1016/j.jpsychores.2009.04.004

[65]. Singh, K., Bassi, M., Junnarkar, M., & Negri, L. (2015). Mental health and psychosocial functioning in adolescence: An investigation among Indian students from Delhi. Journal of Adolescence, 39. https://doi.org/10.1016/j.adolescence.2014.12.008

[66]. Stewart-Brown, S. (2015). The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS). https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/

[67]. Stewart-Brown, S. (2017). Population level: Wellbeing in the general population. In Wellbeing, Recovery and Mental Health. https://doi.org/10.1017/9781316339275.019

[68]. Stewart-Brown, S., Tennant, A., Tennant, R., Platt, S., Parkinson, J., & Weich, S. (2009). Internal construct validity of the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS): A Rasch analysis using data from the Scottish Health Education Population Survey. Health and Quality of Life Outcomes, 7. https://doi.org/10.1186/1477-7525-7-15

[69]. Strange, C., Bremner, A., Fisher, C., Howat, P., & Wood, L. (2016). Mothers' group participation: Associations with social capital, social support and mental well-being. Journal of Advanced Nursing, 72(1). https://doi.org/10.1111/jan.12809

[70]. Tee, M., Wang, C., Tee, C., Pan, R., Reyes, P. W., Wan, X., Anlacan, J., Tan, Y., Xu, L., Harijanto, C., Kuruchittham, V., Ho, C., & Ho, R. (2021). Impact of the COVID-19 Pandemic on Physical and Mental Health in Lower and Upper Middle-Income Asian Countries: A Comparison Between the Philippines and China. Frontiers in Psychiatry, 11. https://doi.org/10.3389/FPSYT.2020.568929/FULL

[71]. Tran, T. D., Tran, T., & Fisher, J. (2013). Validation of the depression anxiety stress scales (DASS) 21 as a screening instrument for depression and anxiety in a rural community-based cohort of northern Vietnamese women. BMC Psychiatry, 13. https://doi.org/10.1186/1471-244X-13-24

[72]. Tsamakis, K., Triantafyllis, A., Tsiptsios, D., Spartalis, E., Mueller, C., Tsamakis, C., Chaidou, S., Spandidos, D., Fotis, L., Economou, M., & Rizos, E. (2020). COVID 19 related stress exacerbates common physical and mental pathologies and affects treatment (Review). Experimental and Therapeutic Medicine. https://doi.org/10.3892/etm.2020.8671

[73]. Vaillant, G. E. (2003). Mental Health. American Journal of Psychiatry, 160(8), 1373–1384. https://doi.org/10.1176/appi.ajp.160.8.1373

[74]. Van Agteren, J., Bartholomaeus, J., Fassnacht, D., Iasiello, M., Ali, K., Lo, L., & Kyrios, M. (2020). Using Internet-based psychological measurement to capture the deteriorating community mental health profile during COVID-19: An observational study. (Preprint). JMIR Mental Health, 7, 1–8. https://doi.org/10.2196/20696

[75]. Van Bortel, T., Basnayake, A., Wurie, F., Jambai, M., Koroma, A. S., Muana, A. T., Hann, K., Eaton, J., Martin, S., & Nellums, L. B. (2016). Https://Dx.Doi.Org/10.2139/Ssrn.3561265. Bulletin of the World Health Organization, 94(3), 210–214. https://doi.org/10.2471/BLT.15.158543

[76]. Vervoort, T., Logan, D. E., Goubert, L., De Clercq, B., & Hublet, A. (2014). Severity of pediatric pain in relation to school-related functioning and teacher support: An epidemiological study among school-aged children and adolescents. Pain, 155(6). https://doi.org/10.1016/j.pain.2014.02.021

[77]. Vindegaard, N., & Benros, M. E. (2020). COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. Brain, Behavior, and Immunity, 89, 531–542. https://doi.org/10.1016/J.BBI.2020.05.048

[78]. Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020b). Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. International Journal of Environmental Research and Public Health, 17(5), 1729. https://doi.org/10.3390/IJERPH17051729

[79]. Weich, S., Stewart-Brown, S., Parkinson, J., Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., & Secker, J. (2007). The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation. Health and Quality of Life Outcomes, 5(1).

[80]. Xiang, Y. T., Yang, Y., Li, W., Zhang, L., Zhang, Q., Cheung, T., & Ng, C. H. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. In The Lancet Psychiatry (Vol. 7, Issue 3). https://doi.org/10.1016/S2215-0366(20)30046-8

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