



Research Article

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Effect of Lockdown due to COVID-19 on Psychological Health of Young Adults- A Survey Report

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Abstract

Background- Uncertainties are prevailing duringunprecedented COVID-19 outbreak time affecting higher studies/careers of undergraduate and graduate students. **Aims-** To identify symptoms of psychological problems existing in young adults in general and also, the effect of forced quarantine due to COVID-19lockdowns on their psychological behaviour. **Setting and Design-** A cross-sectional study through an online survey using 17*extended English version of the Strength and Difficulties questionnaire (SDQ) to measure effect of lock down / forced quarantine on psychological behaviour of young adults in India at the time of pandemic. **Methods and Material-** Survey was carried in the months of May-June 2020 among college/university students and 1020 responses were obtained. Absolute and relative frequency distributions are computed.Scores of the five SDQ scales, difficulty scores and impact score are compared gender wise. **Statistical analysis-**The effects of gender and chronicity are tested using permutation test. Chi square tests of goodness of fit and independent attributes are applied. **Results and Conclusions-** The 16.93%, 14.38 %,3.94 %,16.07 % of respondentsare under significant risk categories for Emotional, Conduct, Hyperactivity, and Peer problem scalesrespectively.Except for Prosocial scale, there is no effect of gender on other scales as the p value is greater than 0.05. There is significant difference in observed numbers under all categories from the expected SDQ standards on 877 distressed respondents as p value < 0.001. Irrespective of gender, the prolonged lockdown due to COVID-19 is affecting psychological behaviour of young adults.

Keywords: Chronicity, COVID-19, Lock down, SDQ, Permutation test.

INTRODUCTION

The 2019 Corona Virus Disease (COVID-19) pandemic and its after-effectshave negatively affected life around the globe. Thedanger of spread of virus due to highly contagious nature imposing isolation, contact restrictions and economic shutdown is showing a complete change in the psychosocial environment. Anxiety, lack of peer contact, reduced opportunities for stress regulation, induced restrictions on the free movement and stress due to future uncertainties regarding their career/ higher studies are main concerns for under graduate and graduate students. Young adults are facing this stress for the first time which requiresadjusting to the current lifestyles.With this background, we decided to conduct an online survey to evaluate the psychological impact ofCOVID-19 on undergraduate and graduate students.

Review of Literature

Mental disorders account for a large proportion of disease burden in young people in all societies and generally begin between 12–24 years of age [1]. Gustavson *et al.*(2018) suggested common mental disorders are highly prevalent among young adults in the twenties, and somewhat less prevalent in the thirties/forties. Their study concluded young adult who suffer from one mental disorder in the twenties are at considerably increased risk for suffering from a disorder ten years later [2].

Global pandemics with high mortality and morbidity occur when a virulent new viral strain emerges, against which the human population has no immunity [3]. Previous studies based onmental health outcomes of quarantine and similar prevention strategies found that depression, anxiety disorders, mood disorders, post-traumatic stress symptoms, sleep disorders, panic, stigmatization, low self-esteem, lack of self-control are highly prevalent among individuals impacted with physical isolation^[4,5]. The COVID-19 outbreak has been declared an international public health emergency on January 30, 2020 by the World Health Organization [6]. The COVID-19 disease led to forced quarantine due to nationwide lockdowns and has increased acute panic, anxiety, obsessive behaviours, hoarding, paranoia, and depression, and post-traumatic stress disorder [7].

Detecting mental health problems early not only increases the chances of reducing burden on others but decreases the future complications^[8].The most widely used screening tests for detecting psychological and

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behavioural problems among young people are the Child Behaviour Checklist and the Strengths and Difficulties Questionnaire (SDQ). The SDQ for assessing the psychological adjustment was published in 1997 by British psychiatrist Robert Goodman. The SDQ offers advantages over the other instruments as it is a brief instrument to measure common signals and symptoms: hyperactivity, conduct problems and emotional problems and assesses both strengths and difficulties at the same time [9]. Diagnostic predictions from questionnaire data is considered more accurate if they draw information from both impact and symptom scores [10].

Surveys are important tools for answering questions on topics that are difficult to assess using other methods [11]. Online surveys offer a number of advantages for both investigators and respondents. They can be fielded more quickly than traditional mail questionnaires^[12]. Self-report questionnaires are needed in clinical psychology to identify specific symptoms of psychological disorders. They are also used for understanding the prevalence of the disorders^[13]. To improve diagnostic recognition, self-administered screening scales have been recommended.

The objective of this study is to identify symptoms of psychological problems existing in young adults in general and also, the effect of forced quarantine due to COVID-19 nationwide lockdowns on their psychological behaviour. In this cross-sectional study we have conducted an online survey in the months of May-June, 2020 using SDQ 17+ self-administered English language questionnaire on students studying in different colleges/ universities of India. We have received responses from 1020 students. Firstly, data reliability is tested using Cronbach α . Secondly, we have assessed the general psychological behaviour of students and the impact of lockdown based on categorization used in new version of SDQ published in year 2014. Thirdly, we have used permutation test to compare two groups (i) male and female students; and (ii) chronicity of distress for 'less than five months' and 'more than five months', with respect to all the five SDQ scales and the 'Impact' score. Lastly, we have connected the extended version Chronicity item with the Difficulty scores by using Chi square test of goodness of fit. This would help to provide useful additional information to clinicians and researchers having interest in psychiatric problems and its determinants. None of the previous studies, to the best of our knowledge, has published survey during this pandemic time on the psychological behaviour of young adults. The outline of the rest of the paper is as follows: section 2 describes material and methods; in section 3, the results are discussed and the paper is concluded with a discussion in section 4.

MATERIAL And METHODS

A cross sectional study has been carried out with a 17+ SDQ online version of questionnaire. The data is collected from under graduate and graduate students studying in different colleges and universities of India. The content of the questionnaire had the following parts: (1) Title of the questionnaire ;(2) Name; (3) Sex; (4) Date of Birth; (5) subject; and (6) Multiple choice questions divided into six sections.

The 17+ SDQ online version of questionnaire consists of 33 multiple choice questions. The first 25 questions are divided into five sections of five scales viz, 'Emotional', 'Conduct problem', 'Hyperactivity', 'Peer problem' and 'Prosocial behaviour' and each scale has five items in it. Each item in a scale is scored according to the SDQ manual and in each of the five scales the scores can range from 0-10. These five scales are further grouped into externalizing ('Conduct' and 'Hyperactivity'), internalizing ('Emotional' and 'Peer') and 'Prosocial'. The 'Difficulty' score of a respondent is the sum of scores of 'Emotional', 'Hyperactivity', 'Conduct problem' and 'Peer problem' scales [14-21]. Summary scores for a scale are only calculated if at least three of the five items have been completed.

Items 27-32 are scored if the respondent answers 'Yes' against item 26. Item 27 measures the chronicity i.e. the length of time distress has been present. Items 28-32 comprise of 'Impact' score and measure the distress affecting their selves, family, study, friends and hobbies' respectively. Impact score of a respondent can range from 0 to 10 for self-report. Item 33 assesses the burden on others rather than on the youth. New cut off points of SDQ manual published in 2014 [22], suggesting that for each scale 80%, 10%, 5% and 5% of the population lie in 'Close to average' (clinically significant problems in this area are unlikely), 'Slightly raised' (clinically significant problems), 'High' (substantial risk of clinically significant problems) and 'Very high' (very high risk of clinically significant problems) categories respectively have been used in this study.

Since the study is concentrated on the psychological problems arising out of 'lock down due to COVID-19' only, it automatically excludes complications arising from physical problems. In this study, the inclusion criterion is more than 70% completed responses. We obtained a total of 1020 responses, all more than 90% complete.

Statistical Analysis

Cronbach alpha is a measure used to test reliability of data especially psychological data. A high value of Cronbach alpha indicates the high internal consistency of the data [23].

Permutation test or randomization test with minimal assumptions and greater flexibility of the test statistic is used to compare two populations when a parametric form of underlying distribution is not specified [24].

RESULTS

Reliability of Data

The standardized value of Cronbach alpha is 0.83 and Guttman lambda is 0.89. This shows that the reliability quotient of the data is high. Average inter-item correlation is small (0.13). The signal-noise ratio 4.9 indicates the high level of consistency of the data in comparison to the noise.

Data Description

A data of 1020 respondents was collected in the months of May- June, 2020 on college/university students when the lock down was a little more than two months old. Among the respondents 462 (45.29%) are males and 558 (54.71%) females. Mean age of the participants is 19.75 years. The participants are from a whole spectrum of streams, Humanities, Commerce, Sciences, Law, Management, Engineering, Medicine, Nursing and interns. All the responses are scored according to the SDQ manual. All the five scales of the SDQ manual for all the participants are valid scores. Some of the respondents chose not to answer some of the questions. Their right of not to answer a question has been honoured. However, according to SDQ manual, since at least three scales are completed for all the 1020 respondents so none of the data has been treated as a missing data.

The Table 1 below presents the descriptive statistics of all the items of SDQ, first the five scales of five items each; and the 'Difficulty' and 'Impact' scores for all students stratified gender wise. It can be observed from Table 1, that the three measures of central tendency viz. mean, median and mode are greater than '6' for 'Prosocial' and less than or equal to '4' for other scales indicating that a large proportion of students is not facing substantial psychological issues. Mean values of difficulty score 12.890 and 13.146 respectively for males and females and other measures suggest that large number of students lie in the 'Close to average' category. The 'Impact' score has been computed for 877 (85.98%) out of 1020 respondents facing distress. The mean impact score is 2.242 which indicates that a

substantial proportion of those who feel difficulties in life lie in 'High' and 'Very high' categories.

Table 1: Descriptive statistics of 1020 students giving mean, standard deviation, median, mode, minimum and maximum of five scales; Prosocial, Hyperactivity, Emotional, Conduct Problem and Peer Problem; and Difficulty, Impact and Burden scores for two groups i.e. male and females

Scale (Items)	Gender	Total	Mean	Sd	Median	Mode	Minimum	Maximum
Prosocial behaviour (1, 4, 9, 17, 20)	Male	461	7.568	1.549	8	8	0	10
	Female	556	8.097	1.826	8	9	2	10
	Total	1017	7.857	1.701	8	9	0	10
Hyperactivity (2, 10, 15, 21, 25)	Male	459	4.054	2.098	4	4	0	10
	Female	556	3.820	2.097	4	4	0	10
	Total	1015	3.926	2.100	4	4	0	10
Emotional Conduct (3, 8, 13, 16, 24)	Male	460	3.485	2.387	3	2	0	10
	Female	556	4.290	2.450	4	3	0	10
	Total	1016	3.925	2.454	4	3	0	10
Conduct Problem (5, 7, 12, 18, 22)	Male	460	2.957	1.547	3	2	0	8
	Female	555	2.914	1.422	3	3	0	9
	Total	1015	2.936	1.475	3	3	0	9
Peer Problem (6, 11, 14, 19, 23)	Male	458	3.017	1.795	3	2	0	10
	Female	556	2.685	1.637	2	2	0	9
	Total	1014	2.835	1.718	3	2	0	10
Difficulty score(Hyperactivity+ Emotional+ Conduct+ Peer)	Male	456	12.890	5.232	12	9	1	31
	Female	553	13.146	4.939	13	13	2	29
	Total	1009	13.031	5.072	12	11	1	31
Impact Score (28, 29,30,31,32)	Male	387	2.065	2.247	1	0	0	10
	Female	490	2.382	2.431	2	0	0	10
	Total	877	2.242	2.356	2	0	0	10
Burden (33)	Male	462	0.169	0.419	0	0	0	2
	Female	558	0.1810	0.442	0	0	0	2
	Total	1020	0.175	0.431	0	0	0	2

Absolute and relative frequency distributions of five scales signifying the behaviour of the colleges/ universities Students:

The Table 2 below presents gender wise frequency distribution of the scores of the respondents on the five scales of SDQ. Four categories have been defined in accordance with the cut-points for SDQ scores newer four-band solution as there is no evidence of threshold effects at either high or low scores. Different colour zones has been used in

Table 2 to increase the readability of the table. Colour zones from light grey to dark grey indicate that the scores are from 'Close to average' to 'Very high' categories. According to the results, for 'Hyperactivity' scale, 36 respondents are in 'High' and 4 in 'Very high' which together are almost 4% which is minimum among scales under these clinically significant risk categories. The proportions of students in different colour zones/ categories are observed.

Table 2: Absolute and relative frequency distribution of scores according to the five scales for male and female students for all the 1020 respondents

SDQ-Scales	Gender	F [†] / _% [‡]	Score											Total
			0	1	2	3	4	5	6	7	8	9	10	
Prosocial	M	F	1	3	2	4	16	37	58	70	110	97	63	461
		%	0.22	0.65	0.43	0.87	3.47	8.03	12.58	15.18	23.86	21.04	13.67	
	F	F	0	0	1	5	7	25	43	90	129	148	108	556
		%	0.00	0.00	0.18	0.90	1.26	4.50	7.73	16.19	23.20	26.62	19.42	
Hyperactivity	M	F	25	49	65	100	91	61	47	20	1	0	0	459
		%	5.45	10.68	14.16	21.79	19.83	13.29	10.24	4.36	0.22	0.00	0.00	
	F	F	41	52	106	103	118	72	45	16	3	0	0	556
		%	7.37	9.35	19.06	18.53	21.22	12.95	8.09	2.88	0.54	0.00	0.00	
Emotional	M	F	46	51	91	65	64	50	35	21	23	12	2	460
		%	10.00	11.09	19.78	14.13	13.91	10.87	7.61	4.57	5.00	2.61	0.43	
	F	F	22	59	60	87	86	71	57	50	33	20	11	556
		%	3.96	10.61	10.79	15.65	15.47	12.77	10.25	8.99	5.94	3.60	1.98	
Conduct	M	F	8	75	116	106	79	50	17	6	2	1	0	460
		%	1.74	16.30	25.22	23.04	17.17	10.87	3.70	1.30	0.43	0.22	0.00	
	F	F	4	81	144	162	94	45	14	9	1	1	0	555
		%	0.72	14.59	25.95	29.19	16.94	8.11	2.52	1.62	0.18	0.18	0.00	
Peer	M	F	21	70	110	96	73	47	25	8	4	1	3	458
		%	4.59	15.28	24.02	20.96	15.94	10.26	5.46	1.75	0.87	0.22	0.66	
	F	F	36	97	154	112	83	43	17	10	3	1	0	556
		%	6.47	17.45	27.70	20.14	14.93	7.73	3.06	1.80	0.54	0.18	0.00	

†F- Absolute frequency; ‡%- Relative frequency

The **Figure 1** below is a pictorial representation of the above frequency distribution that clearly shows the concentration of the respondents in

'Close to average' category for each scales identified by the 'hump' of the curve and tapering tail.

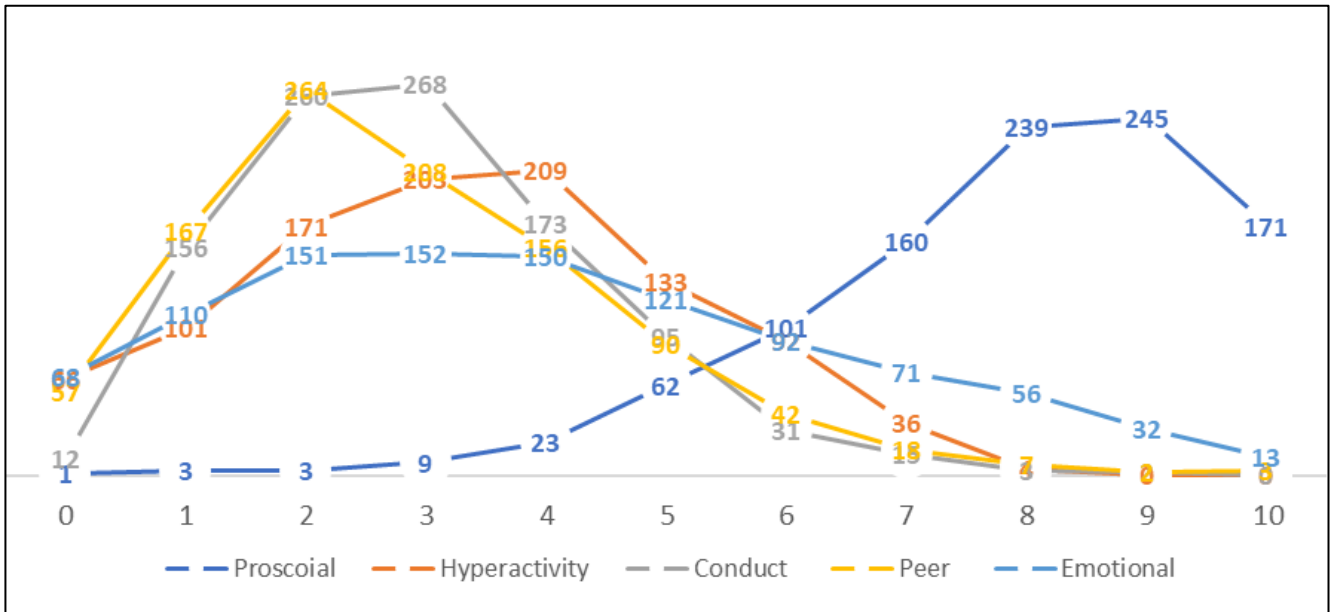


Figure 1: The frequency distribution of all the 1020 students for the five scales of Strength and Difficulties Questionnaire

Figures 2 & 3 below present the relative frequency distributions of males and females for the five scales of SDQ according to the score bands respectively. It is clearly seen in Figure 2 that the proportions in 'Very high' category for 'Emotional' and 'Peer problem' scales are alarmingly high. In fact, for 'Peer' category, the proportion of males

(43.89%) and females (51.62%) in the 'Closed to the average' category are alarmingly low as compared to general average (80%). For scales other than 'Emotional', higher relative frequency is observed in females as compared to males in this category.

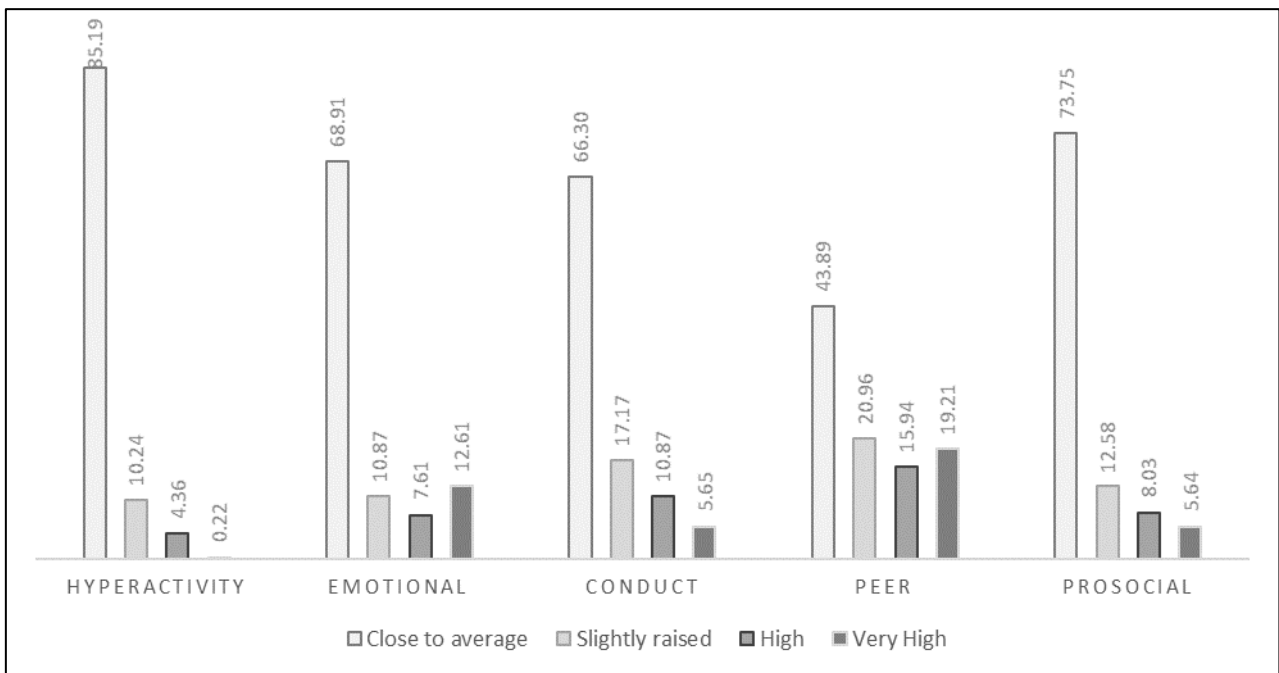


Figure 2: Relative frequency distribution of male students for Hyperactivity, Emotional conduct, Conduct problem, Peer problem and Prosocial behaviour scales

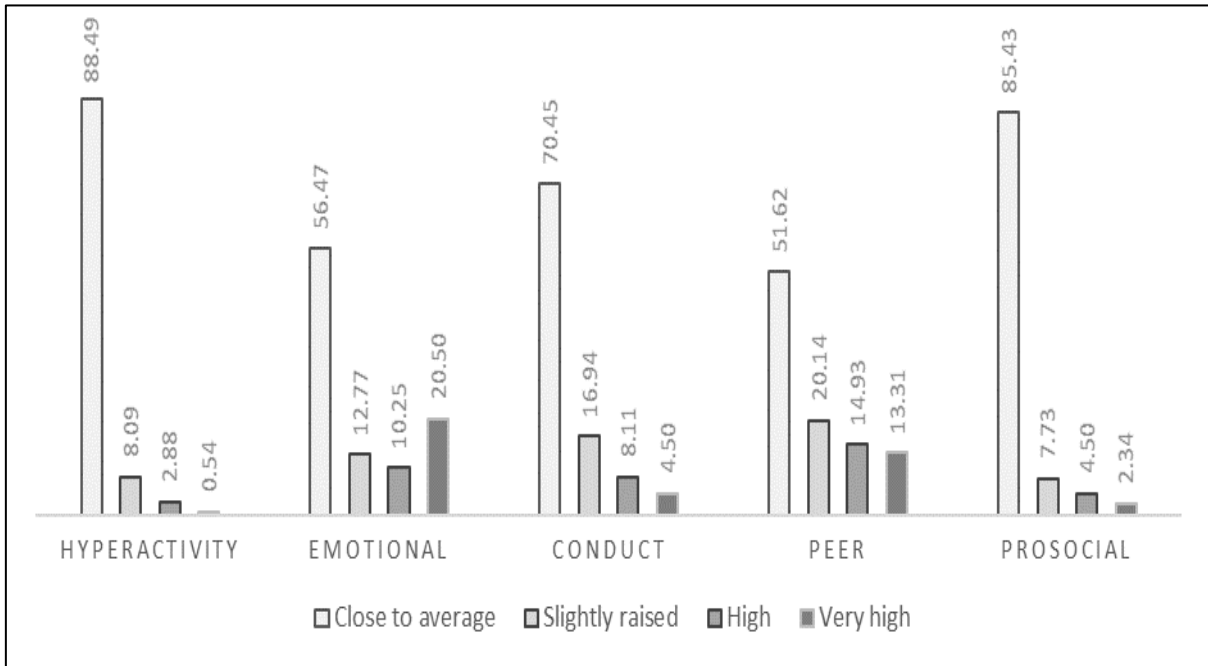


Figure 3: Relative frequency distribution of female students for Hyperactivity, Emotional conduct, Conduct problem, Peer problem and Prosocial behaviour scales

Difficulty score measures the overall psychological behaviour of the respondent. A total of 1009 (456 males and 553 females) had completed all the four scales of 'Difficulty' score. A higher proportion (65.57%) of males lies in 'Close to average' category as compared to

females (62.57%). Similar results are observed for 'Very high' category as well (12.06% and 9.95% respectively). The results are presented pictorially in Figure 4 below.

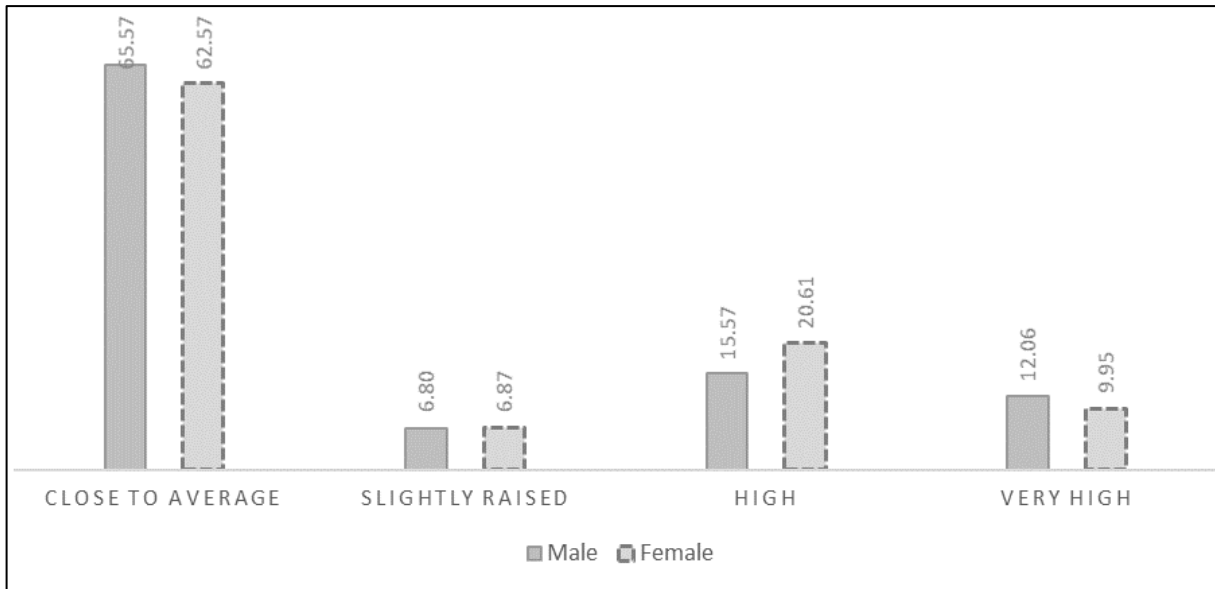


Figure 4: Relative frequency distribution of 'Difficulty' scores for males and females

Absolute and relative frequency distributions of items included in extended version: Chronicity, Overall Distress, and Burden.

The term 'chronic' describes the course or rate of onset and development of illness. Out of 877 respondents facing distress, 302 (34.4%) are having these problems for five months or less. Almost 66% of the respondents are feeling distress for more than six months. For both male and female groups, proportion of those in 'up to five

months' duration is almost the same (34.37% males and 34.69% females) and proportion is maximum for the duration 'more than year'. Relative frequencies for all durations are pictorially displayed in Figure 5. Out of 877, 387 are males and 490 females. For both the groups, proportion of those in 'Very high' category is 35.15% (males) and 42.45% (females) against standard of 5%. Figure 6 below is the pictorial representation of relative frequency distribution of 'Impact' scores.

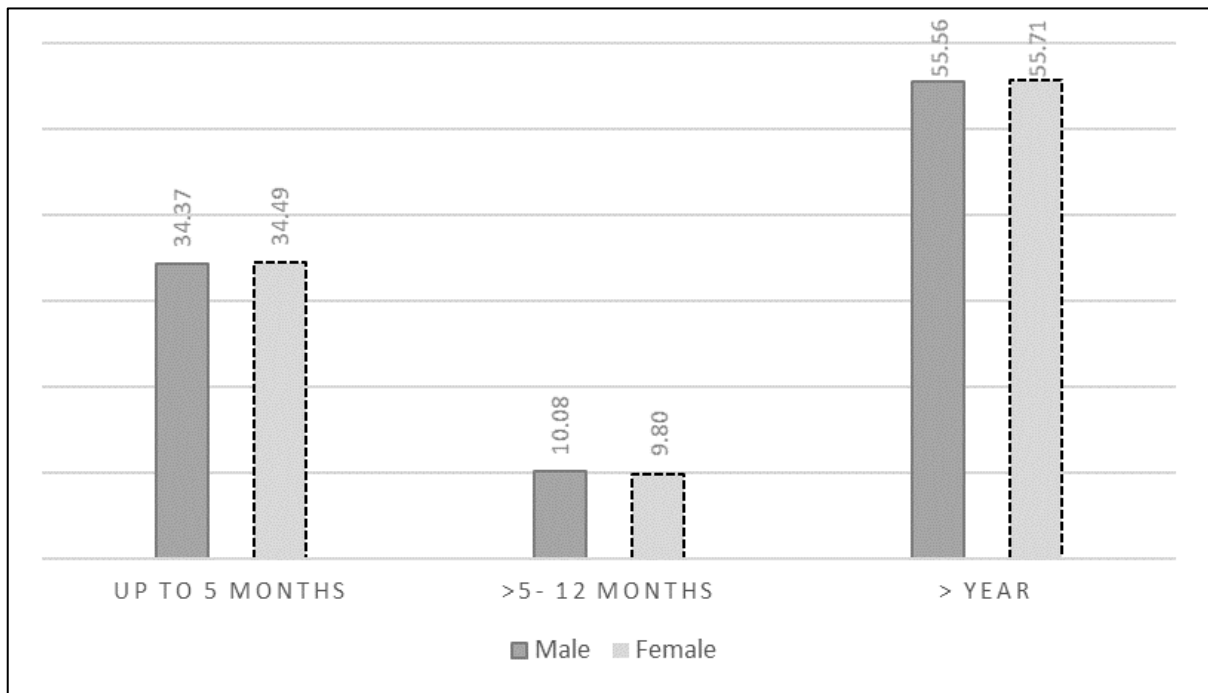


Figure 5: Relative frequency distribution of 'Chronicity' for males and females

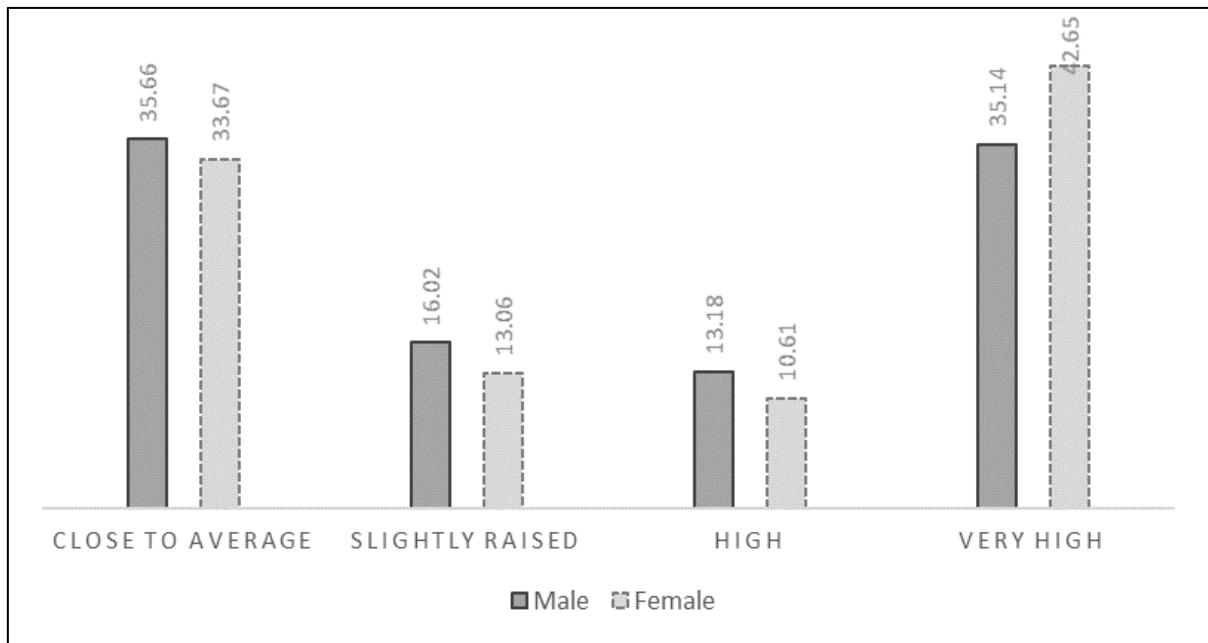


Figure 6: Relative frequency distribution of 'Impact' scores for males and females

Question 33 of the SDQ measures a different dimension of impact-burden of distress on the family of the respondent or on respondent. The scoring of burden is similar to the scoring of questions based on distress but this is not part of the impact score. For both the groups, proportion of those in no burden category with score '0' is 84.85%, 84.23% males and females respectively.

Statistical Testing: Effect of gender and chronicity of distress on the psychological behaviour as measured by the SDQ scales

Psychological health issues are generally affected by gender of the respondent. Firstly, we have tested if there is any significant difference between male and female students in respect of any of the five SDQ scales and the 'Impact' score. Secondly, we have tested the effect of

lockdown on the psychological health of college/university students, taking 'Chronicity' as the proxy variable for the 'impact of lock down'.

The following hypotheses are set:

H_{0i} : There is no significant difference between the two groups of students based on SDQ scale i ;

H_{1i} : There is significant difference between the two groups of students based on SDQ scale i .

i = Prosocial behaviour scale, Hyperactivity scale, Emotional scale, Conduct problem scale, Peer problem scale; Impact score.

Permutation test is carried and the following results are obtained

Table 3: Comparison by Permutation Test Statistic for five scales; Prosocial behaviour, Hyperactivity, Emotional, Conduct problem and Peer problem and Impact score by grouping variable (i) Gender (ii) Chronicity of distress (less than or equal to five months and more than five months)

Test Variable	Grouping Variable	Permutation Test Results at $\alpha = 0.05$			
		Statistic	Estimate	p_value	Decision
Prosocial	Gender	1.9992	0.6567	0.0456	Reject H_0
	Chronicity	0.3424	0.1135	0.732	Fail to Reject H_0
Hyperactivity	Gender	-1.0525	-0.4581	0.2928	Fail to Reject H_0
	Chronicity	1.8578	0.7707	0.0632	Fail to Reject H_0
Emotional	Gender	1.8067	0.7308	0.0708	Fail to Reject H_0
	Chronicity	1.082	0.5247	0.2793	Fail to Reject H_0
Conduct Problem	Gender	0.1462	0.0632	0.8838	Fail to Reject H_0
	Chronicity	0.2511	0.1183	0.8017	Fail to Reject H_0
Peer Problem	Gender	-1.7215	-0.8181	0.0852	Fail to Reject H_0
	Chronicity	1.9828	1.0469	0.0474	Reject H_0
Impact score	Gender	1.9791	0.3170	0.0478	Reject H_0
	Chronicity	-0.7387	-0.0580	0.46	Fail to Reject H_0

From the results shown in Table 3, firstly it is found that except for 'Prosocial behaviour' scale, there is no significant difference in the psychological scales based on gender as the p value is greater than 0.05. However, male and female groups of 'Emotional' scale and 'Peer problem' scale are significantly different at 10% level of significance. 'Impact' scores of male and female groups are significantly different as p value is 0.0478. Secondly, we have compared two chronicity groups 'less than five months' and 'more than five months' in respect all five SDQ scales and the 'Impact' score. From the permutation test results given in Table 3, chronicity/ duration of distress is affecting 'Peer problem' scale. However, at level of significance 10%, duration of distress is affecting 'Hyperactivity' scale also.

Testing the effect of lockdown on the psychological distress in terms of deviation from expected numbers

We applied the Chi-square test for independence of attributes to test

H_0 : Risk category viz, 'Close to average', 'Slightly raised', 'High' and 'Very high' of respondents' scores is independent of Chronicity.

H_1 : Risk category is dependent on Chronicity.

and concluded that the attributes are independent as p value is 0.46 at 9 degrees of freedom i.e. we fail to reject the null hypothesis.

Table 4: Chi square test of independence of attributes to test if risk category of scores is independent of Chronicity.

Chronicity	Frequency	Close to average	Slightly raised	High	Very high	Total
Up to one month	Observed	92	19	12	15	138
	Expected	75	25	15	23	
1 to 5 months	Observed	93	22	18	31	164
	Expected	89	30	18	27	
5 to 12 months	Observed	46	18	10	13	87
	Expected	47	16	10	14	
more than year	Observed	244	100	57	87	488
	Expected	264	88	54	81	
Total		475	159	97	146	877

The data has been analysed by using R-code and MS EXCEL. The results are based on online survey conducted by using only one questionnaire though reliable and sensitive tool but findings are not compared/verified by other reliable tool can be considered as the limitation of this study.

DISCUSSION

Mental health problems are on the rise among adolescents and young adults. Mental disorders may interfere with young people's ability to complete age-relevant tasks viz. attaining education, establishing a family, and participating in occupational life [2]. The COVID-19 is declared by WHO as pandemic, an epidemic occurring worldwide and usually affecting a large number of people [26] globally.

Due to increase in the number of COVID-19 cases and fear of community spread, a lock down of 21 days was imposed in India on March 25, 2020 which was subsequently increased for 3 more periods. Fear and anxiety about a new disease caused strong emotions in adults. Public health actions, such as social distancing, are making people feel isolated and lonely and stress and anxiety are on the rise. This situation is unprecedented and no one is sure of how long this situation would prevail and uncertainties among young adults are there with regard to their studies/ examination and the stigma attached with risk of contracting COVID-19. All these are causing a

change in their behaviour which motivated the need of this study with reliable psychometric and behavioural screening tool.

Goodman (1997) developed the Strengths and Difficulties Questionnaire (SDQ) to satisfy the clinical need for a short, simple, and clinically useful questionnaire and is well accepted by respondents [27]. SDQ is a brief screening tool to identify and assess mental health and behavioural disorders among young people [28] and is translated in more than 80 languages. In this paper we have conducted a cross sectional study to assess the psychological problems with an online sample of 1020 regular college/university students using SDQ 17 + extended version in original English language. In recent times, especially in this lockdown period due to COVID-19, questionnaires administered via the internet have become a serious alternative for the collection of survey data. There were 558 females and 462 males with the mean and modal age of the respondents 19 years. The data was collected in the months of May-June, 2020 when the official lock down was almost two months old, although unofficial restrictions had been in place sometime before the official lock down.

Calculating data reliability has been commonly used when multiple-item measures of a concept are employed [29]. The value of Cronbach α is 0.83, indicating high reliability and the fraction of a test score attributable to error is less and thus indicating the consistency of responses for various items of the scale. Further, high consistency in

the data is also found by significant correlation among internalizing items and externalizing items, 0.768 and 0.798 respectively with $p < 0.001$.

Most of the respondents are concentrated in the 'Close to the Average' category for different scales of SDQ which is shown by the measures of central tendency under the result section. However, we observed, 16.93% for 'Emotional' symptoms, 14.38 % for 'Conduct' disorders, 3.94 % for 'Hyperactivity', 16.07 % for 'Peer problem', 29.24% for the 'Difficulty' scores of students are under 'High' and 'Very high' categories. Proportions of both males and females obtained for 'Difficulty' score under all the four categories of 'Close to the Average', 'Slightly raised', 'High' and 'Very high' are 65%, 7%, 16% and 12% for males and 62%, 7%, 21% and 10% for females against the standard proportions of 80%, 10%, 5% and 5% used in SDQ manual. With extended version we find 86% (877 out of 1020) to have distress. Further, we find that male proportions are 36%, 16%, 13% and 35%; and 34%, 13% 11% and 42% for females against standard proportions of 80%, 10%, 5% and 5% used in SDQ manual. Altogether there are 51.08% students under 'High' and 'Very high' categories and are under distress indicating everyday life difficulties in the areas viz. family, friends, study and hobbies. These deviations of proportion from standard may be because the survey was carried when lockdown was imposed due to COVID-19 and students were facing uncertainties with regard to their studies/ examination. Further, this study is suggesting modification in cut off points of different categories in the SDQ manual under extraordinary conditions.

In the **Table 5** given below we have connected the extended version 'Chronicity' item with the 'Difficulty' scores. Using Chi square test of goodness of fit, we found that the category proportions of 143 students who answered 'no distress' are not significantly different from SDQ manual standards as the p value is 0.136. However, for remaining 877 responses the test suggested that there is significant difference in observed numbers under all categories from the expected SDQ standards as p value < 0.001 . The finding is very informative as it suggests the need to work upon the SDQ standards under extraordinary conditions. The results further suggest that young adults are in general facing distress and is indicated in their psychological behaviour as measured by 'Difficulty' score. Also, psychological behaviour problems in 46 out of 138 (33.33%) under 'less than one month' and 71 out of 164 (43.29%) with 'one to five months' chronicity may be regarded as effect of the lock down imposed due to COVID-19. The study suggests that there has been increase of 11.47% students who are facing psychological behaviour problems during nationwide lock down. Our results are in accordance with coronavirus pandemic American news, the psychological trauma and mental-health viz. depression, substance abuse, post-traumatic stress disorder and suicide problems are on the rise [30]. Also, results are consistent with a study by Mark Henick, a mental health strategist which suggested when a person faces trauma due to a pandemic then the majority of people throw themselves into survival mode, which is extremely taxing on mental health [31].

Table 5: The Chi-square goodness of fit test to examine if the observed numbers in various risk categories are significantly different from the SDQ standards for the test variable 'Chronicity'

Chronicity	Frequency	Difficulty Score					Statistic	p-value
		Close to average	Slightly raised	High	Very high	Total		
No	Observed	125	11	3	4	143	5.54021	0.1362
	Expected†	114	14	7	7	143		
Up to one month	Observed	92	19	12	15	138	17.93851	0.0004
	Expected	110	14	7	7	138		
1 to 5 months	Observed	93	22	18	31	164	90.87165	<0.0001
	Expected	131	16	8	8	164		
5 to 12 months	Observed	46	18	10	13	87	42.48276	<0.0001
	Expected	70	9	4	4	87		
more than year	Observed	244	100	57	87	488	312.7787	<0.0001
	Expected	390	49	24	24	488		

†SDQ standards- Close to average (80%), Slightly raised (10%), High (5%), Very high (5%)

CONCLUSION

However, in future studies with robust statistical modelling and with simulations under general conditions these findings shall be verified.

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