CrossRef DOI of original article:

Distressed: An Assessment of Emotional State of Young Adults during a COVID Wave

Preetinder Gill

Received: 1 January 1970 Accepted: 1 January 1970 Published: 1 January 1970

Abstract

The COVID-19 pandemic has resulted in a heavy toll on public health. The adverse health outcomes have affected the public physically, mentally and emotionally. Waves during the pandemic have resulted in lockdowns that limited people?s ability to interact socially. Due to the novel nature of the disruptions the emotional effects of COVID related lock downs have not been adequately studied. This study assessed the effects of the Jan-Feb 2022 COVID wave related lockdown on young adults aged 18 to 25 in the 11 counties that form the Detroit Metro area in the State of Michigan in the United States of America.

Index terms—

1 II. Material and Methods

Detroit residents between the ages of 18 and 25 self-reported their conditions via a survey instrument hosted on Centiment. Co, an online survey platform that T helps to target specific demographics for researchers. (Centiment, 2022) Data were collected between January 19, 2022, and February 7, 2022. The Detroit Metro area was experiencing a COVID wave during the same time. (State of Michigan, 2022) 522 people from the target population responded to the survey. 412 people completed the survey. There are approximately 600,000 people between the ages of 18 and 25 that reside in the Detroit Metro area. (Detroit Regional Chamber, 2022) 384 samples would be needed to achieve 95% confidence level with a 5% margin of error for statistical analysis. (Australian Bureau of Statistics, 2022)The collected responses are greater than the sample size target.

The survey instrument has 4 sections. The first section covered responder demographics. The second section is adapted from the Depression, Anxiety and Stress Scales (DASS-21). The DASS-21 "is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress. Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset / agitated, irritable / over-reactive and impatient". Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items. (Motor Accident Insurance Commission, Australia, 2016; Lovibond & Lovibond, 1996)DASS-21 responses are summarized as extremely severe, severe, moderate, mild, and normal.

The third section is based on the Pew Research Center's Teen Survey. (Jiang, 2020) The questions in this section cover the usage of electronic devices by the sampled population. The fourth section was derived from C.S. Mott Children's Hospital National Poll on Children's Health. **??**Freed, n.d.) This survey measures effects of COVID-19 restrictions on teens, who rely on their peer and social connections for emotional support. In total, the survey instrument had 46 multiple choices questions.

Descriptive analysis of the data collected was performed to better understand the demographics of the participants. Descriptive analysis also included breakdown of responses per question. Analysis of variance (ANOVA) was used to explore whether there are any statistically significant differences between various groups. Further, ANOVA was used to investigate the relationships between depression, anxiety, stress, and self-reported impact of COVID-19 on social interactions. Finally, ANOVA was used to investigate how young adults in the Detroit Metro area tried to deal with problems related to their emotional states.

2 III. Results

49% of the respondents identified as female, 46% identified as male. 54% of the respondents selfreported themselves as white or Caucasian, 35% as black of African American, 9% as Latino or Hispanic, 7% as Asian, 3% as Native American or Alaskan Native and 1% as Native Hawaiian or Pacific Islander. A breakdown of respondent by age is shown in table 1. In response to DASS-21 portion of the survey, most respondents reported their levels as normal. Specifically, 38.8% reported normal depression levels, 37.4% reported normal anxiety levels and 47.6% reported normal stress levels. On the other hand, 26.9% of respondents reported their depression as extremely severe or severe, 36.2% of respondents reported their anxiety as extremely severe or severe and 18.9% of respondents reported their stress as extremely severe or severe. Additionally, it can be concluded that largest number of people reported higher than normal levels of depression, anxiety, and stress. A complete breakdown of the relevant responses is included in table 2. A Pearson correlation analysis for the three emotional states was performed. The states demonstrate a high degree of correlation. The correlation analysis is shown in table 3. Furthermore, moderate degree of statistically significant correlation, with coefficients between 0.24and 0.39, were found between the levels of emotional states and various detrimental behaviors reported by the Over 62% of the respondents reported that the COVID-19 wave that was prevalent during the data collection phase has very negative or somewhat negative impact on their social interactions. A complete breakdown of the responses is included in table 4. Respondents used various modes of communication to interact with their family members, friends or loved ones. Most common modes of communications reported were phone calls, social media, gaming platforms and inperson interactions. A complete breakdown of the responses is included in table 5. During the COVID-19 wave prevalent during the data collection phase 53.6% respondents reported experiencing sleep issues, 56.8% respondents reported experiencing worry, 53.2% respondents reported experiencing sadness, 38.6% respondents reported experiencing changes in appetite, 24.8% respondents reported experiencing aggressive behavior and 32.3% respondents reported withdrawing from family. Further, to seek emotional support 57.8% of respondents looked for information on internet portals, 32% used mobile applications, 37.6% looked for professional help and 68.4% talked to people in the family and/or friends. ANOVA was performed to assess whether levels of depression, anxiety and stress varied by gender. It was found that the p-values of the F-tests were less than 0.05, hence it can be concluded that there are statistically significant differences between the means from one level of gender to another at the 95.0% confidence level. The multiple range tests showed that the levels varied significantly between the following groups. People who self-reported their gender as other had statistically significant higher levels of depression and anxiety when compared to people who self-reported their gender as male or female. People who selfreported their gender as female or other had statistically significant higher levels of stress when compared to people who self-reported their gender as male. Results of the ANOVA are shown in tables 6, 7, 8. Multiple Ranges tests are shown in tables 9, 10, 11. The results of ANOVA didn't show any statistically significant differences related to respondents' race. ANOVA did not highlight any statistically significant differences between levels of depression, anxiety, stress, and self-reported impact of COVID-19 on social interactions. All p-values were greater than 0.05. Similarly, the analysis did not demonstrate any statistically significant difference in the impact of COVID-19 based on gender or race. Tables 12, 13, 14 show that respondents turned to internet portals and professionals for help with their emotional states at statistically significant levels. The analyses show that emotional states of young adults in the Detroit Metro area were concerning. The emotional states were worse for genders other than male. The COVID-19 wave, and the associated lockdown also seems to have coincided with several detrimental behaviors. The young adults used various modes of communication to keep their social interactions active. They turned to various avenues to seek help for their emotional states.

Public health administrators could use the findings of this study to develop effective remedial programs. At individual level, young adults should keep channels of communications open via various modes with loved ones and professionals to help elevate their emotional states. The study is the first of its kind for the Detroit Metro area. Additional studies should be conducted in other geographical areas to develop a comprehensive understanding of the emotional states of young people in general and during pandemic lockdowns in specific. Further longitudinal studies will also help deepen the depth of knowledge. Regardless, of the COVID-19 related lockdown the emotional states of young people in the Detroit Metro area were found to be distressed. [1]

1

Age	Frequency	Percent
18	82	16%
19	50	10%
20	65	12%
21	88	17%
22	58	11%
23	45	9%
24	58	11%
25	68	13%
Other/Undisclosed	8	2%

Figure 1: Table 1 :

2

Volume XXII Issue III Version I
D D D D) A
(
Medical Research
Global Journal of

Figure 2: Table 2 :

3

	Depression	Anxiety	Stress	Sleep issues	Worry	Sadness	Changes in appetite	Aggressive behavior	Withdraw from family
Depression		0.67	0.68	0.30	0.39	0.39	0.24	0.37	0.30
Anxiety	0.67		0.73	0.32	0.35	0.30	0.24	0.36	0.21
Stress	0.68	0.73		0.30	0.38	0.36	0.25	0.39	0.24
Sleep issues	0.30	0.32	0.30		0.40	0.41	0.39	0.31	0.23
Worry	0.39	0.35	0.38	0.40		0.55	0.28	0.24	0.27
Sadness	0.39	0.30	0.36	0.41	0.55		0.38	0.29	0.37
Changes in appetite	0.24	0.24	0.25	0.39	0.28	0.38		0.25	0.34
Aggressive behavior	0.37	0.36	0.39	0.31	0.24	0.29	0.25		0.30
Withdrawing from family	0.30	0.21	0.24	0.23	0.27	0.37	0.34	0.30	

p values < 0.05 in all cases

Figure 3: Table 3 :

4

	Frequency	Percent
Very Negative	127	30.8%
Somewhat Negative	132	32.0%
Subtotal	259	62.9%
No Impact	114	27.7%
Somewhat Positive	27	6.6%
Very Positive	12	2.9%
Grand Total		

Figure 4: Table 4 :

5

	Text		Phone Call		Social Media	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Every day or almost every day	18	4%	32	8%	40	10%
A few times a week	44	11%	85	21%	63	15%
A few times a month or less	131	32%	145	35%	116	28%
Never	219	53%	150	36%	193	47%
Total				412		

	Gaming Platforms		In-Person (Indoor and/or Outdoor)	
	Frequency	Percent	Frequency	Percent
Every day or almost every day	113	27%	16	4%
A few times a week	91	22%	107	26%
A few times a month or less	87	21%	127	31%
Never	121	29%	162	39%
Total			412	

Figure 5: Table 5 :

6

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
Between groups	30.21	3	10.07	3.95	0.0085
Within groups	1040.42	408	2.55		

Figure 6: Table 6 :

7

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
Between groups	20.54	3	6.85	3.28	0.0210
Within groups	851.91	408	2.09		

Figure 7: Table 7 :

8

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
Between groups	25.87	3	8.62	5.84	0.0006
Within groups	602.06	408	1.48		

Figure 8: Table 8 :

9

Year 2022
Volume XXII Issue III Version I
D D D D)
(
Medical Research
Global Journal of

Contrast	Sig.	Difference	+/- Limits
Female -Male		-0.28	0.32
Female -Other	*	1.22	0.97
Female -Prefer Not to Say		0.63	1.30
Male -Other	*	1.50	0.97
Male -Prefer Not to Say		0.90	1.30
Other -Prefer Not to Say		-0.59	1.59

*[Note: * denotes a statistically significant difference.Distressed]*

Figure 9: Table 9 :

10

Contrast	Sig.	Difference	+/-Limits
Female -Male		-0.26	0.29
Female -Other	*	1.01	0.88
Female -Prefer Not to Say		0.04	1.18
Male -Other	*	1.27	0.88
Male -Prefer Not to Say		0.30	1.18
Other -Prefer Not to Say		-0.97	1.44

* denotes a statistically significant difference.

Figure 10: Table 10 :

11

Contrast	Sig.	Difference	+/-Limits
Female -Male	*	-0.39	0.24
Female -Other		0.72	0.74
Female -Prefer Not to Say		0.39	0.99
Male -Other	*	1.12	0.74
Male -Prefer Not to Say		0.78	0.99
Other -Prefer Not to Say		-0.33	1.21

Figure 11: Table 11 :

12

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
MAIN EFFECTS					
A:Advice from internet	23.35	1	23.35	11.71	0.0007
B:Help from app	1.01	1	1.01	0.51	0.4775
C:Helpfrm professional	12.61	1	12.61	6.32	0.0123
D:Helpfrmfam_friend	4.92	1	4.92	2.47	0.1169

All F-ratios are based on the residual mean square erro.

Figure 12: Table 12 :

13

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
MAIN EFFECTS					
A:Advice from internet	48.13	1	48.13	20.62	0.0002
B:Help from app	7.10	1	7.10	3.04	0.0819
C:Helpfrm professional	13.97	1	13.97	5.99	0.0148
D:Helpfrmfam_friend	0.82	1	0.82	0.35	0.5536

All F-ratios are based on the residual mean square error.

Figure 13: Table 13 :

14

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
MAIN EFFECTS					
A:Advice from internet	20.64	1	20.64	14.22	0.0002
B:Help from app	0.02	1	0.02	0.01	0.9085
C:Helpfrm professional	4.25	1	4.25	2.93	0.0879
D:Helpfrmfam_friend	0.004	1	0.004	0.00	0.9608

Figure 14: Table 14 :

.1 Acknowledgments

The authors acknowledge the support of their family in completing this research study.

.2 Disclosure

The authors report no conflicts of interest in this work.

[Canet-Juric et al. ()] 'A longitudinal study on the emotional impact cause by the COVID-19 pandemic quarantine on general population'. L Canet-Juric , M L Andrés , M Valle , H López-Morales , F Poó , J I Galli , . . &urquijo , S . *Frontiers in Psychology* 2020. p. 2431.

[Zhang et al. ()] 'A second wave? What do people mean by Covid waves?-a working definition of epidemic waves'. S X Zhang , F A Marioli , R Gao , S Wang . *Risk Management and Healthcare Policy* 2021. 14 p. 3775.

[Centiment (2022)] *Better respondents, Better Data*, Centiment . https://www.centiment.co/ 2022. June 19, 2022.

[Buheji et al. ()] 'Children and coping during COVID-19: A scoping review of bio-psycho-social factors'. M Buheji , A Hassani , A Ebrahim , K Da Costa Cunha , H Jahrami , M Baloshi , S Hubail . *International Journal of Applied Psychology* 2020. 10 (1) p. .

[Coronavirus disease 2019 (2022)] COVID-19. https://www.mayoclinic.org/diseases-conditions/coronavirus/symptoms-causes/syc-20479963 *Coronavirus disease 2019*, 2022. May 11. June 18, 2022. Mayo Foundation for Medical Education and Research.

[Fakari and Simbar ()] *Coronavirus pandemic and worries during pregnancy; a letter to editor. Archives of academic emergency medicine*, F R Fakari , M Simbar . 2020. 8 p. .

[Singh and Singh ()] 'COVID-19 and its impact on society'. J Singh , J Singh . *Electronic Research Journal of Social Sciences and Humanities* 2020. 2.

[Qian and Jiang ()] 'COVID-19 and social distancing'. M Qian , J Jiang . *Journal of Public Health* 2020. p. .

[Hotez ()] 'COVID19 meets the antivaccine movement'. P J Hotez . *Microbes and infection* 2020. 22 (4) p. 162.

[Kenny and Mallon ()] 'COVID19-clinical presentation and therapeutic considerations'. G Kenny , P W Mallon . *Biochemical and biophysical research communications* 2021. 538 p. .

[Detroit Data Center: Population by age, race, gender. Detroit Data Center | Population by Age, Race, Gender (2022)] *Detroit Data Center: Population by age, race, gender. Detroit Data Center | Population by Age, Race, Gender*, https://detroitdatacenter.org/headlight/popagerace 2022. May 29, 2022.

[Oum et al. (2022)] *Economic impact of covid-19 on PEPFAR countries. Kaiser Family Foundation*, S Oum , J Kates , A &wexler . https://www.kff.org/global-health-policy/issue-brief/economic-impact-of-covid-19-on-pepfar-countries/ 2022. February 7. June 18, 2022.

[Shanahan et al. ()] 'Emotional distress in young adults during the COVID-19 pandemic: evidence of risk and resilience from a longitudinal cohort study'. L Shanahan , A Steinhoff , L Bechtiger , A L Murray , A Nivette , U Hepp , . . Eisner , M . *Psychological medicine* 2022. 52 (5) p. .

[Schelhorn et al. ()] 'Emotions and emotion up-regulation during the COVID-19 pandemic in Germany'. I Schelhorn , S Schlüter , K Paintner , Y Shiban , R Lugo , M Meyer , S Sütterlin . *Plos one* 2022. 17 (1) p. e0262283.

[Liu et al. ()] 'Evidence for elevated psychiatric distress, poor sleep, and quality of life concerns during the COVID-19 pandemic among US young adults with suspected and reported psychiatric diagnoses'. C H Liu , C Stevens , R C Conrad , H C &hahm . *Psychiatry research* 2020. p. 113345.

[Jiang (2020)] 'How teens and parents navigate screen time and device distractions'. J Jiang . https://www.pewresearch.org/internet/2018/08/22/how-teens-and-parents-navigate-screen-time-and-device-distractions/ *Pew Research Center: Internet, Science & Tech* 2020. August 14. June 27, 2022.

[Freed et al. (2022)] *How the pandemic has impacted Teen Mental Health. National Poll on Children's Health*, G Freed , D Singer , A Gebremariam , S Schultz , S Clark . https://mottpoll.org/reports/how-pandemic-has-impacted-teen-mental-health June 27, 2022.

[Lovibond and Lovibond ()] 'Manual for the depression anxiety stress scales'. S H Lovibond , P F Lovibond . *Psychology Foundation of Australia* 1996.

[Y?ld?r?m et al. ()] 'Meaningful living, resilience, affective balance, and psychological health problems among Turkish young adults during coronavirus pandemic'. M Y?ld?r?m , G Arslan , P T Wong . *Current Psychology* 2021. p. .

[Cloud et al. ()] 'Medical isolation and solitary confinement: balancing health and humanity in US jails and prisons during COVID-19'. D H Cloud , C Ahalt , D Augustine , D Sears , B Williams . *Journal of General Internal Medicine* 2020. 35 (9) p. .

[Zhai and Du ()] 'Mental health care for international Chinese students affected by the COVID-19 outbreak'. Y Zhai , X Du . *The Lancet Psychiatry* 2020. 7 (4) p. e22.

[Li and Zhang ()] 'Mental healthcare for psychiatric inpatients during the COVID-19 epidemic'. S Li , Y Zhang . *General Psychiatry* 2020. (2) p. 33.

[Motor Accident Insurance Commission (2016)] *Motor Accident Insurance Commission*, https://maic.qld.gov.au/wp-content/uploads/2016/07/DASS-21.pdf 2016. June 28, 2022. Australia. (Dass21 -Maic. DASS21. Retrieved)

[Naming the coronavirus disease (COVID-19) and the virus that causes it. World Health Organization World Health Organizatior 'Naming the coronavirus disease (COVID-19) and the virus that causes it. World Health Organization'. https://covid19.who.int/ *World Health Organization* 2022. June 18, 2022. 2022. June 18, 2022. (WHO coronavirus (COVID-19) dashboard. World Health Organization. Retrieved)

[Liem et al. ()] 'The neglected health of international migrant workers in the COVID-19 epidemic'. A Liem , C Wang , Y Wariyanti , C A Latkin , B J Hall . *The Lancet Psychiatry* 2020. 7 (4) p. e20.

[Rubin and Wessely ()] 'The psychological effects of quarantining a city'. G J Rubin , S Wessely . *Bmj* 2020. p. 368.

[Fisayo and Tsukagoshi ()] 'Three waves of the COVID-19 pandemic'. T Fisayo , S Tsukagoshi . *Postgraduate medical journal* 2021. 1147. 97 p. .

[Cipolletta et al. ()] 'Uncertainty, shock and anger: Recent loss experiences of first-wave COVID-19 pandemic in Italy'. S Cipolletta , L Entilli , S Filisetti . *Journal of Community & Applied Social Psychology* 2022.

[Cucinotta and Vanelli ()] 'WHO declares COVID-19 a pandemic'. D Cucinotta , M Vanelli . *Acta Bio Medica: AteneiParmensis* 2020. 91 (1) p. 157.

[World Development Report 2022 Chapter (2022)] https://www.worldbank.org/en/publication/wdr2022/brief/chapter-1-introduction-the-economic-impacts-of-the-covid-19-crisis *World Development Report 2022 Chapter*, 2022. February 15. June 18, 2022. World Bank Group