Investigating the interplay of death anxiety, health anxiety and mental well-being during COVID-19 in young adults

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Abstract-

This study was conducted with the aim of investigating the interplay of Death Anxiety, Health Anxiety and Mental Wellbeing in the ongoing COVID - 19 pandemic. Cross sectional research design has been used in the study. Owing to the stringent lockdown situation, snowball sampling technique was used. The sample size was 65 participants (39 women and 26 men) comprising young adults who are university students falling in the age group of 22 to 28 years. The data was collected in virtual mode, by using Google forms. The researchers obtained a voluntary, prior written consent from them. It was ensured that their confidential information would be taken utmost care of and not be disclosed. The tools employed for the study were: Warwick-Edinburgh Mental Well-being Scale [55]. Death Anxiety Questionnaire [13] and Health Anxiety Inventory. [45]. the data was analyzed by using One-way ANOVA and Pearson Correlation. No significant relationship was found in the variables under study. However, there exists a weak positive relationship between Death Anxiety and Health Anxiety that came out to be 0.139. The relationship between Health anxiety and Mental wellbeing was also found to have a positive weak correlation (r=0.03). The results, along with the limitations and suggestions for future research have been elaborated in the paper.

Index Terms- Death Anxiety, Health Anxiety, Hypochondria, COVID-19, Mental Well-being

I. INTRODUCTION

The COVID- 19 pandemic is a relatively unique phenomenon of the twenty-first century that has changed the existing meaning of mental illness. Although research has begun to examine the psychological impact of this novel corona virus, some facets of the same are yet to be investigated. Research literature concerning the pandemics that have occurred till date, tells us that the psychological impact of infection and seclusion has much more than the mere "fear of contracting'' the virus. [7]. Pandemic does entail some aspects that significantly affect the population. For example, separation from dear ones, loss of sense of freedom, unpredictability of the growth of the infection, feelings of helplessness [11, 33]. Such facets can potentially cause hazardous aftermath [60]. A recent survey has found that children and young adults are the "at risk'' part of the population that is vulnerable to developing the symptoms of anxiety [39]. In a study that was conducted on Chinese young adults during the epidemic stage of COVID- 19, it revealed how the levels of anxiety are mediated by some "protective factors'' such as, residing in urban areas, "economic stability'' and living together with parents [11].

On the other hand, being surrounded by relatives who have contracted the virus contributes to exacerbating the symptoms of anxiety. Moreover, financial issues, and slackening in academic pursuits are associated with anxiety symptoms [4]. Additionally, a Chinese online survey suggests that college pupils are more susceptible to experience stress, depression and anxiety than the rest in the course of the pandemic [33]. Stressful conditions like the onset of a pandemic can disrupt an individual's "environmental, social, relational climate''[57]. An outbreak of a hazardous infection can lead to physical, emotional and psychological distress and is representative of an immediate threat to the individual's safety and security [26]. Major psycho-social issues that are the aftermath of the COVID- 19 pandemic comprise unemployment, deprivation of social support, and fear relating to health-related issues. [23, 36, 40]

The aftermath of the intensity of the pandemic might cause discomfort for urban university pupils and individuals of non- white origin, at physical, psychological and emotional levels. [43].

The long lasting and extensive psychological impact of the ongoing pandemic is hard to ascertain as the trauma persists especially for those who are kept under compulsory quarantine conditions, who are more likely to experience fear, anxiety and heightened

risk perceptions [29]. If the situation persists for a longer period, then the psychosocial affect is likely to be profound and unfaltering, which might further give way to aggravation of depression, substance abuse disorders and posttraumatic stress disorder [32].

Death anxiety is a term that utilizes the understanding of apprehension which is propagated by "death awareness'' [1]. Human species are exclusive as they have to learn to live and adjust with the consciousness of their own definiteness and the various domains of death anxiety, be it experiential, cognitive or emotional, are suggested by culture. [9]. A cultural buffer is expressed "symbolically" in the combination of "learned and shared'' ideology. Most of them emerge in traditional "religious dogma and ritual" [9, 46].

Death anxiety is nearly associated with the root fear pertaining to the elimination of the individual's existence [22]. Research studies on death anxiety support more the role of death attitudes, which are further a consequence of "cumulative life experiences'' in anticipating the multifaceted nature of death anxiety, as compared to the demographic criteria [37]. The significance of cognitive factors such as beliefs in the "perception of threat'' pertaining to death, have been particularly highlighted in the literature. For instance, some university pupils who were enrolled in a course on thanatology and who had a more religious orientation were found to be experiencing less death anxiety since religion provided a buffer by creating a contextual meaning of death [30]. The association between religiousness and concerns regarding death is largely based on age, gender and devotion. [37, 41]. The manifestation of death anxiety has a developmental dimension to it. Researchers working in the developmental domain highlight the "life journey'', as an essential and a sound process with peculiar identity crises that are age relevant. These crises steer towards "maturity and ego strength'' once settled [17, 19]. For the same, a study has demonstrated this increased death anxiety in undergraduate college male students. [51]. another significant component in the perception of death anxiety is age [44]. Research has shown that younger staff of a "long term care" setup reported higher levels of death anxiety about looking after the dying [42]. Health anxiety is a universal "experience'' that occurs when the somatic sensations (and, or changes) are perceived to be a significant signal of a grave disease, since, the degree of health anxiety can vary from one individual to another, the current models approach this phenomenon on a "continuum'' varying from mild to severe [45, 54]. Milder forms of health anxiety are usually suggestive to "clinical care'' in which clinical care is guaranteed. But if "preoccupation and worry'' come into the clinical picture, health anxiety can be a cause of dysfunctioning in personal, social and occupational domains, and thereby overuse of "general and special'' health- care assistance. The clinical manifestation of health anxiety encompasses hypochondriasis, symptoms not meeting the criteria of diagnosis for hypochondriasis, disease phobia and delusional disorder, somatic type [54]. In light of the diagnostic nomenclature employed in DSM-IV- TR, hypochondriasis is regarded as a somatoform disorder [16].

Extreme health anxiety is delineated by various core cognitive, somatic, and behavioral markers that usually exhibit as an aftermath of stress, illness or loss of a relative [8]. It can also exhibit itself after being exposed to disease related to the popular media. [54]. A research study has found that health anxiety was high in university students who searched online for symptoms of COVID - 19 and were consuming herbal substances that act against COVID- 19 [31].

 Behaviors of people who perceive clinics and hospitals as a threat tend to increase the "undue burden'' on the healthcare system, as was evident in Utah State in 2009 [34]. An article published in the Journal of the American Medical Association mentioned the importance of "hospital and medical clinic preparedness'' so that the distress pertaining to COVID-19 doesn't negatively affect the effectiveness of medical care or worsen their direct "morbidity and mortality'' [2].

Low health anxiety can also adversely affect health behavior [6], that entails "public health strategies'' for handling pandemics and epidemics. For example, individuals who perceived themselves to be at low risk of disease at the time of 2009 H1N1 influenza pandemic had less chances of washing their hands. [21] and seeking vaccination [53].

Health anxiety is amongst the various psychological factors that will affect the way any individual reacts to the viral outburst. [54]. Mental well-being has gained considerable recognition in the health domain. [61]. It is not merely the absence of mental illness and has been illustrated with regard to the hedonic emotions like feelings of happiness, tranquility and so on. Low mental wellbeing becomes a predisposition for mental illness and a boost in mental well-being leads to resilience for the distressing events of life that can be a significant source of mental illness in adulthood [12]. The crisis of life varies from adolescence and adulthood [38]. Researchers differ if they are communicating in terms of experiential aspects or the impact of social constructs on health, or if they are studying the relationship of social constructs with the long term health of young adults. The outcomes of these issues might be fairly different [52].

Research has outlined some key determinants that play a vital role in determining the mental well-being of young adults [24]. Family structure throughout adolescence can affect health over the lifespan [20]. Teenagers who hail from nuclear households have demonstrated high self-rated health at the age of thirteen. While these variations sustain till early adulthood [48]. But there are conflicts in this research outcome, as other studies recommend that family structure throughout adolescence has less impact on obesity [14] and self-rated health [25] during young adulthood [24]. Parental interest has been related with better self-related

health in young adults [35]. Family affinity, which includes interest, support and control) appears to be one of the significant reasons for youngsters' later years [56]. Education, especially attaining the highest educational degree, anticipates mortality, physical health and mental health in the long run. [15,18].

I.1. Rationale of the Study

Young adults, especially university pupils, have been growingly acknowledged as a "vulnerable population'' that is experiencing psychological issues like anxiety, substance abuse, depression and so on, when contrasted with the "general population'' [10]. It has been established that COVID - 19 pandemic is a cause of "high distress'' in the youngsters [5]. This study aims to examine the interplay of certain psychological variables- death anxiety, health anxiety and mental well-being in the light of the ongoing COVID-19 pandemic, which is perceived as an uncontrolled condition by the researchers. It has been conceptualized in the literature that health anxiety is an important predictor of the fear of contracting COVID-19 which was also seen in studies conducted during the progress of the Swine Flu pandemic [59]. The research literature indicates a potential relationship amongst the variables under study, but there is paucity of research on the interplay of these variables in the young adults in the context of COVID-19 pandemic.

The present study is aimed at understanding the relationship between health anxiety and other correlates during COVID- 19. It has been hypothesized that there will be a significant relationship amongst health anxiety, death anxiety and mental well-being.

II.   METHOD

II.1 Participants
The sample for this study consisted of 65 participants, out of which it consisted of 26 men and 39 women. The participants were recruited from districts of Punjab and Delhi.

II.2 Design
Owing to the stringent lockdown situation in the country, at the time of the second wave of the COVID-19 pandemic, the Snowball sampling method was used for data collection. The design used for the study was, "Cross sectional''. The inclusion-criteria of the study was university students of the age range of 22-28 years. Overall data was collected from 80 participants, out of whom we included the scores of 65 participants, 7 were not included since they were high in severity and 8 participants had not filled the google forms. Participants who scored high on the Health Anxiety inventory [45] were excluded from the study since the majority of the data was from the normal population and the dispersion of scores was coming high thereby they were excluded from the study. Google Forms were used as a medium for data collection.

II.2.3. Ethical Considerations
For the purpose of safeguarding the welfare of the participants in the process of this study, the researchers obtained a voluntary, prior written consent from them. It was ensured that their confidential information would be taken utmost care of and not be disclosed. And their safety would be rest assured. The participants were also briefed about the purpose and methods used in this research, and the manner in which the reporting of the results would be carried out.

II.3 Measures
For the purpose of the study, three instruments were administered. They include The Warwick-Edinburgh Mental Well-being scale [55]. Death Anxiety Questionnaire [13] and Health Anxiety Inventory [45].

II.3.1 The Warwick-Edinburgh Mental Well-being Scale (Tennant, Hiller, Brown, 2007)
The Warwick-Edinburgh Mental Well-being Scale (WEMWBS) comprises 14 items that relate to an individual's state of mental well-being (thoughts and feelings). Responses are made on a 5-point scale ranging from 'none of the time' to 'all of the time'. Each item is worded positively and together they cover most, but not all, attributes of mental well-being including both hedonic and eudemonic perspectives. The scale has good content validity with test- retest reliability of 0.83. A high correlation of the scale was seen with mental health and well-being scales whereas lower correlations were seen with overall mental health. Social desirability bias of the scale was lower in comparison to that of other scales. [55]

II.3.2 Death Anxiety Questionnaire (Conte, Weiner, Plutchik, 1982)
Death anxiety questionnaire is used to measure the anxiety related to death in an individual. The questionnaire consists of 15 items on which responses are made on a 3- point Likert scale ranging from 'not at all' to 'very much'. The scoring is further done as per the instructions provided in the manual. Internal consistency of the DAQ was .83, and test–retest reliability was .87. No significant sex or age differences were found. A principal-components factor analysis suggested 4 independent dimensions of death anxiety: Fear of the Unknown, Fear of Suffering, Fear of Loneliness, and Fear of Personal Extinction [13].

II. 3.3 Health Anxiety Inventory (Salkovskis, Rimes, Warwick, Clarke, 2002)

The Health Anxiety Inventory is a brief screening measure of health anxiety. It consists of 18 items. The scale was found to be reliable and to have a high internal consistency. Version of the scale was found to have comparable properties to the full length scale. The Pearson product-moment correlation coefficient was 0±90, indicating a very high level of test–retest reliability. The alpha coefficient for the HAI was good:0.95 for all participants together. For the separate groups the alpha coefficients were also all satisfactory (hypochondria 0.88; hypo-chondriacal with panic disorder, 0.88; panic, 0.92; anxious controls, 0.82; and, non-patient controls, 0.71).

II.4 Procedure

The data had been collected by administering standardized questionnaires. The data was collected with the help of google forms, since it was not possible to collect the data personally owing to the pandemic conditions. After collecting the data, scoring was done as per the instructions given in the manual and further analysis and interpretations have been discussed.

III.   Results

The data was collected from a sample of 65 participants (among which 39 were female respondents and 26 were male respondents). The data was collected with the help of Death Anxiety Questionnaire [13], Health Anxiety Inventory [47], and The Warwick-Edinburgh Mental Well-being Scale [55]. The Death Questionnaire Inventory had 15 items, they were scored on the 3-point Likert scale- Not at all , Somewhat and Very much .Not at all was scored as 0, Somewhat was scored as 1 and Very much was scored as 2. The scoring was performed in a continuous order and the total score included the sum of all the items. Higher scores meant higher anxiety and lower scores meant lower anxiety. Health anxiety inventory consisted of 18 items in total. Each item was scored on a scale from 0-3, The items were marked that best suited the participants' feelings over the past six months as instructed in the manual.

 However, items 15-18 were reverse scored. WEMWBS has 14 number of items that are scored from 1 (none of the time) to 5 (all of the time) and a total scale score is calculated by summing the 14 individual item scores.

After the scoring of the inventories, one-way ANOVA was calculated with the help of SPSS Version 16.0. With, Health Anxiety as an independent variable and Death Anxiety and Mental Well Being as dependent variables.

Table 1: Table showing relationship between Death Anxiety, Mental Well-being and health anxiety, with the help of one-way ANOVA (N=65)

		Sum of squares	df	Mean square	F	Sig.
Death_anxiety	Between Groups Within Groups Total	392.84 1142.714 1535.538	21 43 64	18.706 26.575	.704	.806
Well_being	Between Groups Within Groups Total	2234.847 584.707 8076.554	21 43 64	106.421 135.854	.783	.723

From table 1, it can be interpreted that the relationship between death anxiety and health anxiety is non-significant. The sum of squares for Death Anxiety and Health Anxiety came out to be 392.824, 1142.714 and 1535.538 for between groups, within groups and total respectively. The degrees of freedom were 21, 43 and 64 for between, within and total. The mean square came out to be 18.706 and 26.575. F ratio was 0.704 and Significance came out to be 0.806.

The sum of squares for health anxiety and well-being came out to be 2234.847, 5841.707, and 8076.554 for between, within and total groups. The df for the same came out to be 21, 43 and 64. The mean square came out to be 106.421 and 135.84. The F score and significance scores came out to be 0.783 and 0.723.

Table-2: Showing the mean and standard deviation of death anxiety, mental well-being and health anxiety (N=65)

	N	Minimum	Maximum	Mean	Standard Deviation
Death_anxiety Well_Being Health_anxiety Valid N (listwise)	65 65 65 65	.00 20.00 10.00	19.00 68.00 37.00	6.7692 47.6615 23.4308	4.89824 11.23371 6.88742

Table 2 shows the mean and standard deviation of Death Anxiety, Mental Well-Being and Health Anxiety. The N for all the inventories was 65. The minimum and maximum score for death anxiety came out to be .00 and .09, mean 6.7692 and standard deviation 4.89824. The minimum and maximum value for Well-Being came out to be 20 and 68. The mean and standard deviation came out to be 47.6615 and 11.23371 respectively. The scores for Health Anxiety were 10 and 37 as minimum and maximum values and 23.4308 and 6.88742 as mean and standard deviation respectively.

Table 3: Table showing the Pearson's correlation between death anxiety and health anxiety (N=65)

		Death_anxiety	Health_anxiety
Death_anxiety	Pearson correlation Sig. (2-tailed) N	1 65	.139 .271 65
Health_anxiety	Pearson correlation Sig. (2-tailed) N	.139 .271 65	1 65

Table-3 is demonstrating the relationship between Death Anxiety and Health Anxiety. The Pearson correlation coefficient between the two variables came out to be 0.139. N was 65. The level of significance (2-tailed) value came out to be 0.271.

Table 4: Showing the Pearson's correlation between death anxiety and mental well-being (N=65)

	Death_anxiety	Well_being

Death_anxiety	Pearson correlation	1	.140	
	Sig. (2-tailed)		.267	
	N	65	65	
Well_being	Pearson correlation	.140	1	
	Sig. (2-tailed)	.267		
	N	65	65	

Table 4 is demonstrating the relationship between Death Anxiety and Well Being with the help of Pearson-correlation. The correlation between the two came out to be 0.140. N was 65. The level of significance (2-tailed) value came out to be 0.267.

Table 5: Showing the Pearson's correlation between health anxiety and mental well being (N=65)

		Well_being	Health_anxiety
Well_being	Pearson correlation	1	.003
	Sig. (2-tailed)		.980
	N	65	65
Health_anxiety	Pearson correlation	.003	1
	Sig. (2-tailed)	.980	
	N	65	65

Table 5 is demonstrating the relationship between Well Being and Health Anxiety with the help of Pearson-correlation. The correlation between the two came out to be 0.003. N was 65. The level of significance (2-tailed) value came out to be 0.980.

Table 6: Showing the mean and standard deviation for gender (N=65)

	N	Minimum	Maximum	Mean	Std. Deviation
Male	26	22.00	28.00	25.0000	1.93907

Female	39	22.00	28.00	23.6667	1.81127
Total	65	22	28	24.2000	1.96214

From Table 6 it can be interpreted that mean for males is 26 and for females is 39. Standard deviation for males is 1.93 and for females is 1.81

Table 7: Showing the mean and standard deviation for age (N=65)

N	Mean	Median	Standard deviation	Range	Minimum	Maximum
65	1.6000	2.0000	49371	1.00	1.00	2.00

Table 7 shows that mean is 1.60 and standard deviation is 49371.

IV.   DISCUSSION

The main aim of this research was to investigate the relationship between Death Anxiety, Health Anxiety and Mental Well-being during this ongoing COVID - 19 pandemic. For this purpose, the researchers have used "Cross sectional'' research design and snowball sampling technique because of the limitations faced due to the lockdown situation.

As demonstrated in Table-1, there is no significant interplay among death anxiety, health anxiety and mental-well-being in the COVID-19 pandemic "situation''. Table-3.5 demonstrates that there is a weak positive correlation between all the variables.

Since the pandemic is in progress, the researchers did not get proper access for creating "controlled'' conditions for measuring the effect of COVID-19 variable. Also, there was no viable tool accessible during the time span of this research that assesses the psychological dynamics of COVID-19. This might have been a significant cause of error variance. In order to further understand this aspect, the researchers calculated the "Effect Size'' for between the groups by using Cohen's D formula (n2= 0.255) that denotes there was 25% variance due to the Independent Variable (IV).

The non-significance of the results prompted the researchers to re-visit the research literature so as to understand the "probable processes'' behind the results of the primary analysis. Thorough and careful dissection of the studies further guided the research into the shareable domain of the functioning of these variables.

A research study that has been published in The British Journal of Clinical Psychology revealed that optimistic beliefs about death were negatively correlated with health anxiety [27]. However, systematic review has highlighted that there exists a positive association between death anxiety and hypochondriasis [51]. Moreover, in this study, the Pearson Correlation Coefficient of the variables; death anxiety and health anxiety came out to be 0.139 that indicates a weak positive correlation. The level of significance (2-tailed) value was 0.271. A research that was published in the "Journal of Contemporary Medicine'' has established a significant relationship between Death anxiety and Health anxiety in young adults [49].

In our study, the relationship between health anxiety and mental well-being was found to have a positive weak correlation (r=0.03). Though, there is a study that has found a positive "moderate level'' relationship between Health Anxiety and Psychological well- being [3], but still there is a need for investigating the relationship between Health anxiety and mental wellbeing.

Another study has demonstrated a non- significant relationship between anxiety, depression and stress in COVID-19 [28]. The non-significant differences in this study can be attributed to the Organismic variables-as it wasn't determined what percentages of the sample was infected and non- infected respectively. Psychological health emergencies are not only for COVID infected individuals, but for the asymptomatic people too, the caregivers, the relatives and so on. This further makes it a unique situation to examine.

This study has several limitations. Since the COVID-19 pandemic has affected the whole world, sensitivity of which has to prevent restrictions, researchers adopted a non-probabilistic snowball sampling methodology which is one of the limitations.

Since it is a web-based survey, technologically illiterate and non-social media users couldn't participate, furthermore the research has a small sample size that possibly explains less generalizable results. Lastly, enough literature was not available to support these studies, since COVID-19 is ever changing and dynamic in nature and therefore no proper tool has been made to evaluate COVID-19 and psychological correlates. There is a dearth of studies that investigate the relationship between Mental wellbeing and Health Anxiety.

Future researchers can investigate Gender differences in Death anxiety and how individual differences, especially in health anxiety affect the "behavioral response" in the light of COVID-19' pandemic [6].

V.   CONCLUSION

It can be concluded from the above research that there is no significant relationship between death anxiety, mental well-being and health anxiety. It has also been observed that there is a weak positive relationship between death anxiety and health anxiety, death anxiety and mental well-being, and mental well-being and health anxiety.

REFERENCES

[1] Abdel-Khalek, A. M., & Tomás-Sábado, J. (2005). Anxiety and Death Anxiety In Egyptian and Spanish Nursing Students. *Death Studies, 29*(2), 157–169. https://doi.org/10.1080/07481180590906174

[2]   Adalja, A. A., Toner, E., & Inglesby, T. V. (2020). Priorities for The US health Community Responding To COVID-19. *JAMA, 323*(14), 1343. https://doi.org/10.1001/jama.2020.3413

[3] Akbas, M., Sulu, R., & Gozuyesil, E. (2021). Women's Health Anxiety and Psychological Wellbeing During The COVID-19 pandemic. A descriptive study. *Sao Paulo Medical Journal, 139*(5), 496-504. https://doi.org/10.1590/1516-3180.2021.0155.r1.22042021

[4] Alvarez, F., Argente, D., & Lippi, F. (2020). A simple planning problem for COVID-19 lockdown. https://doi.org/10.3386/w26981

[5] Anand, V., Verma, L., Aggarwal, A., Nanjundappa, P., & Rai, H. (2021). COVID-19 and psychological distress: Lessons for India. *PLOS ONE, 16*(8), e0255683. https://doi.org/10.1371/journal.pone.0255683

[6] Asmundson, G. J., Taylor, S., Nicholas Carleton, R., Weeks, J. W., & Hadjstavropoulos, H. D. (2012). Should health anxiety be carved at the joint? A look at the health anxiety construct using factor mixture modeling in a non-clinical sample. *Journal of Anxiety Disorders, 26*(1), 246-251. https://doi.org/10.1016/j.janxdis.2011.11.009.

[7] Barbisch, D., Koenig, K. L., & Shih, F. (2015). Is there a case for quarantine? Perspectives from SARS to Ebola. *Disaster Medicine and Public Health Preparedness, 9*(5), 547-553. https://doi.org/10.1017/dmp.2015.38

[8] Barsky AJ, Klerman GL. (1983). Overview: hypochondriasis, bodily complaints, and somatic styles. *Am J Psychiatry, 140*:273– 28

[9] Becker, E. (1973). The denial of death. New York: Free Press.

[10] Browning, M. H., Larson, L. R., Sharaievska, I., Rigolon, A., McAnirlin, O., Mullenbach, L., Cloutier, S., Vu, T. M., Thomsen, J., Reigner, N., Metcalf, E. C., D'Antonio, A., Helbich, M., Bratman, G. N., & Alvarez, H. O. (2021). Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. *PLOS ONE, 16*(1), e0245327. https://doi.org/10.1371/journal.pone.0245327

[11] Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, *287*, 112934. https://doi.org/10.1016/j.psychres.2020.112934

[12] Chida, Y., & Steptoe, A. (2008). Positive psychological well-being and mortality: A quantitative review of prospective observational studies. *Psychosomatic Medicine, 70*(7), 741-756. https://doi.org/10.1097/psy.0b013e31818105ba

[13] Conte, H. R., Weiner, M. B., & Plutchik, R. (1982). Measuring death anxiety: Conceptual, psychometric, and factor-analytic aspects. *Journal of Personality and Social Psychology, 43*(4), 775-785. https://doi.org/10.1037/0022-3514.43.4.775

[14] Crossman, A., Anne Sullivan, D., & Benin, M. (2006). The family environment and American adolescents' risk of obesity as young adults. *Social Science & Medicine, 63*(9), 2255-2267. https://doi.org/10.1016/j.socscimed.2006.05.027

[15] Denault, A., Poulin, F., & Pedersen, S. (2009). Intensity of participation in organized youth activities during the high school years: Longitudinal associations with adjustment. *Applied Developmental Science*, *13*(2), 74-87. https://doi.org/10.1080/10888690902801459

[16] Diagnostic and statistical manual of mental disorders, fourth edition, text revision (DSM-IV-TR). (2000). https://doi.org/10.1176/appi.books.9780890423349

[17] Erikson, E. H. (1959). Identity and the life cycle. New York: International Universities Press.

[18] Feinstein, L., Sabates, R., Sorhaindo, A., Rogers, I., Herrick, D., Northstone, K., & Emmett, P. (2008). Dietary patterns related to attainment in school: The importance of early eating patterns. *Journal of Epidemiology & Community Health, 62*(8), 734-739. https://doi.org/10.1136/jech.2007.068213

[19] Fortner, Robert A. Neimeyer, B. (1999). Death anxiety in older adults: A quantitative review. *Death Studies, 23*(5), 387-411. https://doi.org/10.1080/074811899200920

[20] Francesconi. M., Jenkins, SP., Siedler T. (2009). The effect of lone motherhood on the smoking behaviour of young adults ; Available from: https://www.iser.essex.ac.uk/files/iser_working_papers/2009-25.pdf

[21] Gilles I., Bangerter A., Clémence A., Green E.G.T., Krings F., Staerklé C. Trust in medical organizations predicts pandemic (H1N1) 2009 vaccination behavior and perceived efficacy of protection measures in the Swiss public. *European Journal of Epidemiology.* 2011;26:203–210

[22] Greenberg, J., Pyszczynski, T., Solomon, S., Simon, L., & Breus, M. (1994). Role of consciousness and accessibility of death-related thoughts in mortality salience effects. *Journal of Personality and Social Psychology, 67*(4), 627-637. https://doi.org/10.1037/0022-3514.67.4.627

[23] Groarke, J. M., Berry, E., Graham-Wisener, L., McKenna-Plumley, P. E., McGlinchey, E., & Armour, C. (2020). Loneliness in the UK during the COVID-19 pandemic: Cross-sectional results from the COVID-19 psychological wellbeing study. *PLOS ONE*, *15*(9), e0239698. https://doi.org/10.1371/journal.pone.0239698

[24] Hagell A, Shah R, Viner R, Hargreaves D, Varnes L and Heys M .(2018). The social determinants of young people's health: Identifying the key issues and assessing how young people are doing in the 2010s.Health Foundation Working Paper. London: Health Foundation

[25] Heard, H. E., Gorman, B. K., & Kapinus, C. A. (2008). Family structure and self-rated health in adolescence and young adulthood. *Population Research and Policy Review, 27*(6), 773-797. https://doi.org/10.1007/s11113-008-9090-9

[26] Huremović, D. (2019). Mental health of quarantine and isolation. *Psychiatry of Pandemics,* 95-118. https://doi.org/10.1007/978-3-030-15346-5_9

[27] James, A., & Wells, A. (2002). Death beliefs, superstitious beliefs and health anxiety. *British Journal of Clinical Psychology*, *41*(1), 43-53. https://doi.org/10.1348/014466502163787

[28] Jigme,T., Sonam,T., Prem, D., Choki, D., Lhapkpa, S., Kinley, G., Dolkar, L. (2021). Psychological Status During COVID-19 Pandemic Among The General Population In Bhutan.*Novateur Publications,* 7(4):352-358

[29] Johal, S. S. (2009). Psychosocial impacts of quarantine during disease outbreaks and interventions that may help to relieve strain. *The New Zealand Medical Journal, 122*(1296), 47–52. https://doi.org/10.1177/ 070674370404900612

[30] Knight, K.H., & Elfenbein, M.H. (1993). Relationship of death education to the anxiety, fear, and meaning associated with death. *Death Studies, 17*, 411-425.

[31] Kurcer, M. A., Erdogan, Z., & Cakir Kardes, V. (2021). The effect of the COVID-19 pandemic on health anxiety and cyberchondria levels of university students. *Perspectives in Psychiatric Care.* https://doi.org/10.1111/ppc.12850

[32] Lancaster, M., & Arango, E. (2021). Health and emotional well-being of urban university students in the era of COVID-19. *Traumatology, 27*(1), 107-117. https://doi.org/10.1037/trm0000308

[33] Li, L. Z., & Wang, S. (2020). Prevalence and predictors of general psychiatric disorders and loneliness during COVID-19 in the United Kingdom. *Psychiatry Research, 291*, 113267. https://doi.org/10.1016/j.psychres.2020.113267

[34] McDonnell, W. M., Nelson, D. S., & Schunk, J. E. (2012). Should we fear "flu fear" itself? Effects of H1N1 influenza fear on ED use. *The American Journal of Emergency Medicine, 30*(2), 275-282. https://doi.org/10.1016/j.ajem.2010.11.027

[35] Mensah, FK., Hobcraft J.(2008). Childhood deprivation, health and development: associations with adult health in the 1958 and 1970 British prospective birth cohort studies. *J Epidemiol Community Heal* [Internet].;62(7):599–606. Available from: http://www.ncbi.nlm.nih.gov/pubmed/18559442

[36] Montenovo, L., Jiang, X., Rojas, F. L., Schmutte, I. M., Simon, K. I., Weinberg, B. A., & Wing, C. (2020). Determinants of disparities in covid-19 job losses (Working Paper No. 27132). *National Bureau of Economic Research*. https://doi.org/10.3386/w27132

[37] Neimeyer RA, Wittkowski J, Moser RP. (2004).Psychological research on death attitudes: an overview and evaluation. *Death Studies*. 28: 309-40. PMID 15129688 DOI: 10.1080/07481180490432324

[38] Newnham, E. A., Hooke, G. R., & Page, A. C. (2010). Monitoring treatment response and outcomes using the World Health Organization's wellbeing index in psychiatric care. *Journal of Affective Disorders, 122*(1-2), 133-138. https://doi.org/10.1016/j.jad.2009.06.005

[39] Orgilés, M., Morales, A., Delvecchio, E., Mazzeschi, C., & Espada, J. P. (2020). Immediate psychological effects of the COVID-19 quarantine in youth from Italy and Spain. https://doi.org/10.31234/osf.io/5bpfz

[40] Pfefferbaum, B., & North, C. S. (2020). Mental health and the Covid-19 pandemic. *The New England Journal of Medicine, 383*(6), 510–512. https://doi.org/10.1056/NEJMp2008017

[41] Pierce, J. D. (2007). Gender differences in death anxiety and religious orientation among U.S.high school and college students. Mental Health, Religion, and Culture, 10, 143–150.

[42] Robbins, I., Lloyd, C., Carpenter, S., & Bender, M. P. (1992). Staff anxieties about death in residential settings for elderly people. *Journal of Advanced Nursing, 17*(5), 548-553. https://doi.org/10.1111/j.1365-2648.1992.tb02831.x

[43] Rudenstine, S., McNeal, K., Schulder, T., Ettman, C. K., Hernandez, M., Gvozdieva, K., & Galea, S. (2020). Depression and anxiety during the COVID-19 pandemic in an urban, low-income public university sample. *Journal of Traumatic Stress*. Advance online publication. https://doi .org/10.1002/jts.22600

[44] Russac, R. J., Gatliff, C., Reece, M., & Spottswood, D. (2007). Death anxiety across the adult years: An examination of age and gender effects. *Death Studies , 31,* 549–561

[45] Salkovskis, P., Rimes, K., Warwick, H., & Clark, D. (2002). The health anxiety inventory: Development and validation of scales for the measurement of health anxiety and hypochondriasis. *Psychological Medicine*, 32(05). https://doi.org/10.1017/s0033291702005822

[46] Schumaker, J. F., Barraclough, R. A., & Vagg, L. M. (1988). Death anxiety in Malaysian and Australian University students. *The Journal of Social Psychology*, 128(1), 41-47. https://doi.org/10.1080/00224545.1988.9711682

[47] Shah, R., & Hagell, A. (2018). G422 Why we need to invest more in young people's health. British Academy of Childhood Disability and British Association for Child and Adolescent Public Health. https://doi.org/10.1136/archdischild-2018-rcpch.411

[48] Sokol, R., Ennett, S., Gottfredson, N., & Halpern, C. (2017). Variability in self-rated health trajectories from adolescence to young adulthood by demographic factors., 73-76. https://doi.org/10.1016/j.ypmed.2017.08.015

[49] Söğütlü, Lütfiye & GÖKTAŞ, Seyyide. (2021). The Effect of COVID-19 Pandemic on Health Anxiety, Death Anxiety and Somatic Symptoms in University Students. *Journal of Contemporary Medicine, 11*. 323-329. 10.16899/jcm.878671.

[50] Stegge, B.M., Tak, L.M., Rosemalen, JGM., Voshaar, R.C. (2018). Death anxiety and its association with hypochondriasis and medically unexplained symptoms: A systematic review. Journal of Psychosomatic Research, 115, 58-65.https://doi.org/10.1016/j.jpsychores.2018.10.002

[51] Sterling, C. M., & Van Horn, K. R. (1989). Identity and death anxiety. Adolescence, 24. 321– 326.

[52] Taggart, F., Brown, S.S. (n.d). A Review of Questionnaires Designed to Measure Mental Wellbeing. Available at:https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/research/validation/frances_taggart_research.pdf

[53] Taha, S. A., Matheson, K., & Anisman, H. (2013). The 2009 H1N1 influenza pandemic: The role of threat, coping, and media trust on vaccination intentions in Canada. *Journal of Health Communication*, *18*(3), 278-290. https://doi.org/10.1080/10810730.2012.727960

[54] Taylor, S. (2004). Understanding and treating health anxiety: A cognitive-behavioral approach. *Cognitive and Behavioral Practice, 11*(1), 112-123. https://doi.org/10.1016/s1077-7229(04)80015-4

[55] Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., Parkinson, J., Secker, J., & Stewart-Brown, S. (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): Development and UK validation. Health and Quality of Life Outcomes, 5(1). https://doi.org/10.1186/1477-7525-5-63

[56] Viner, R. M., Ozer, E. M., Denny, S., Marmot, M., Resnick, M., Fatusi, A., & Currie, C. (2012). Adolescence and the social determinants of health. *The Lancet, 379*(9826), 1641-1652. https://doi.org/10.1016/s0140-6736(12)60149-4

[57] Voitsidis, P., Gliatas, I., Bairachtari, V., Papadopoulou, K., Papageorgiou, G., Parlapani, E., Syngelakis, M., Holeva, V., & Diakogiannis, I. (2020). Insomnia during the COVID-19 pandemic in a Greek population. *Psychiatry Research, 289,* 113076. https://doi.org/10.1016/j.psychres.2020.113076

[58] Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). 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

[59] Wheaton MG, Prikhidko A, Messner GR. (2021). Is Fear of COVID-19 Contagious? The Effects of Emotion Contagion and Social Media Use on Anxiety in Response to the Coronavirus Pandemic. Front Psychol. doi: 10.3389/fpsyg.2020.567379.

[60]   Weir, K. (2020). Grief and COVID-19: Mourning our bygone lives. PsycEXTRA Dataset. https://doi.org/10.1037/e502612020-001

[61] World Health Organization (2004) Melbourne DoMHaSAicwtVHPFaTUo. Promoting Mental Health: Concepts, Emerging Evidence, Practice. World Health Organisation Geneva.