NATURALISTA CAMPANO
ISSN: 1827-7160
Volume 28 Issue 1, 2024

Parametric Analysis of Pandemic Data on Health Anxiety and Obsessive Compulsive Symptoms during Global Emergency

Nandita Chaube*, Shail Shankar**, Navtika Nautiyal*** Huma Hilal****
*Assistant Professor, Department of Behavioural Forensics, National Forensic Sciences University, Delhi Campus
Email: nandichaube@gmail.com,
**Assistant Professor, Department of Humanistic Studies, IIT (BHU). Email: shailshankar.hss@iitbhu.ac.in,
***Assistant Professor National Forensic Sciences University, Gandhinagar Campus, Gujarat, India; email: navtika.nautiyal@nfsu.ac.in
****Assisnat Professor, Raja Mahendra Pratap Singh State University Aligarh, Email: humahilal@gmail.com,
Corresponding Author: Nandita Chaube

Abstract
Background: The novel coronavirus Covid-19 pandemic has created panic and behaviour changes among the society.
Purpose: This study aimed at assessing the awareness of covid-19, health anxiety and obsessive compulsive symptoms in the non-clinical population across the countries. It was hypothesized that awareness of coronavirus will significantly related to health anxiety and obsessive compulsive (OC) symptoms in the healthy population. A total of 264 participants inclusive of 127 males and 137 females completed the questionnaires which consist of Covid-19 awareness, health anxiety and obsessive compulsive symptoms.
Results: Correlation analysis showed significant relationship between awareness, health anxiety and obsessive compulsive symptoms.
Conclusion: The study concludes that increased awareness of Covid-19 is associated with an increase in health anxiety and obsessive compulsive symptoms in healthy population, where health anxiety independently correlates with obsessive and compulsive symptoms in healthy individuals.
Key words*:* Covid-19 pandemic, health anxiety, obsessive compulsive symptoms

Introduction

As per the World Health Organization (WHO) updates, Novel Corona Virus known as Covid-19 is a respiratory illness which primarily spreads through droplets of saliva or nasal discharge when an infected person coughs or sneezes. Covid-19 was first noticed in Wuhan city of China in December 2019 which was later declared as Pandemic. The virus resembling pneumonia is said to be originated from a seafood market (Zhu et al., 2020) which is more threating for aged population with chronic morbid conditions (Zhou et al., 2020). Common symptoms include fever, sore throat, dry cough, nasal congestion, tiredness, diarrhoea and aches and pains (WHO, 2020).

Previous studies which were conducted during other viruses' outbreak in the past such as H1N1 (swine Flu), SARS, MERS, Zika virus etc., demonstrated that such virus outbreaks were significantly associated with psychological breakdown (Lau et al., 2003). These findings were endorsed by Leung et al. (2005) and Petrie and Faasse (2009) when they found a strong association between illness anxiety and recommended preventive behaviours in their sample.

A study on web behaviour, public anxiety and information seeking after the H1N1 outbreak reported higher levels of anxiety and the language based analysis showed higher use of the words like health and death with lower levels of positive emotions. However, this view was further researched by Rubin et al. (2009) who attributed these concerns to the public perception of the disease outbreak. Thus, it can be inferred that the knowledge and awareness about virus outbreak plays a significant role in the mental health of an individuals.

Another study on psychological predictors of anxiety in response to the H1N1 (swine flu) pandemic indicated a flu related anxiety predicting health anxiety, fears of contamination and disgust sensitivity (Michel et al., 2012). However, this health anxiety, hyper-vigilance and misinterpretation of benign bodily signs was found in healthy individuals also (Taylor & Asmundson, 2004).

In case of Zika virus outbreak, the research suggested a common prevailing fear among the U.S. citizens despite the assurance of low risk by the National Institute of Allergy and Infectious Diseases (Santora, 2016). The increased estimation of perceived threats to the disease outbreaks such as in case of SARS, H1N1 flu, avian flu, ebola virus etc. are found to be the potential predictors of anxiety (Blakey, et al., 2015; Wheaton et al, 2012; Xie et al, 2011).

Previous research on health anxiety indicates that increased assumption of illness and perception of the negative consequences of having a serious illness are positively related (Wheaton et al., 2010). These findings were supported by (Olatunji et al., 2007), when they concluded that excessive swine flu anxiety can be predicted by body vigilance. Anxiety sensitivity and health anxiety were also found to predict swine flu related fears. The contamination fears during H1N1 outbreak were found to be parallel to obsessive compulsive disorder (OCD; Abramowitz et al., 2010; American Psychiatric Association, 2000). These studies reassured of elevated level of contamination related fears in such population (Olatunji & Sawchuk, 2005; Olatunji et al. 2004).

Existing studies confirm that the mistaken beliefs about illness, health and interpretations of unclear physical symptoms contribute to the related distress (Abramowitz & Braddock, 2011; Taylor & Asmundson, 2004). Health anxiety is also driven by the overestimates about the severity of illness (Abramowitz & Braddock, 2011; Taylor & Asmundson, 2004). The media information is also found to be related with anxiety in the population during the SARS and Ebola outbreak (Xie et al., 2011; Cheung, 2015).

Increased level of health anxiety in such conditions is commonly aligned with recurrent checking behaviours in various aspects such as physical checking and checking the medical sources of diseases (Brand et al., 2013). In a study on OC beliefs and symptoms, anxiety and disgust sensitivity during swine flu outbreak, the said beliefs and symptoms significantly predicted the fears of swine flu but the later mediated between the said beliefs and symptoms and swine flu fears (Brand et al., 2013). Also, the individuals suffering from other anxiety related disorders such as OCD, panic disorder are more likely to overestimate the health related anxiety. Specially in contamination based OCD, the excessive estimation of threat of illness is perceived more (Cisler et al., 2010). The covid-19 outbreak has been reported to be associated with relapse of OCD (Kumar & Somani 2020) as well as worsening of OCD and anxiety symptoms among those with pre-existing illness (Arnout et al., 2020; Adam, 2020). Such findings can infer the risk of symptom severity in existing patients of OCD. The tendencies of hoarding, which is a broader part of broader OC spectrum in DSM-V, can also increase in the period of lockdown. The distress of OCD patients has drawn attention of researchers in the recent period. An increase in OC patients is noticed in various countries like United Kingdom China, United States, United Kingdom, Italy and India, which is yet to be statistically established (www.time.com).

However, the OC symptoms are not confined to existing patients of OCD during Covid-19. A recent study conducted in Wuhan city of China reveals a significantly higher levels of OC symptoms along with general anxiety in health care workers (Deng et al., 2020). These prominent manifestations of OCD during covid-19 are also observed in middle eastern countries (Arnout et al., 2020). Another study in Italy also endorsed the occurrence of anxiety with other mental health issues in non-clinical sample specially the health care workers ,(Neto et al., 2020). Thus, the recent findings pose towards the high possibilities of OC symptoms in the non-clinical population also.

The existing literature strongly suggest an association between the awareness of disease, health anxiety and OC symptoms. As the health anxiety is found to be relevant and associated with illness anxiety, OCD and other somatic concerns (Taylor, at el., 2012), it is very relevant to examine the consistency of these constructs in the current pandemic conditions and the ones may occur in the future. In the current scenario the increased demand of hygiene products like soap, sanitizers masks and hand wash etc. indicates an unusual psychological states of public and these behaviours are solely attributed to the covid-19 outbreak. Therefore the mental health problems such as anxiety, depression, sleep troubles, post-traumatic stress and terror are seen prevalent in the current pandemic (Torales et al., 2020; Liu et al., 2020; Zhang & Ma, 2020). Whereas, in the other studies, social factors such as family income, living conditions (Cao et al., 2020) and demographic characteristics like

occupation, education and gender (Wang et al., 2020) are also proved to be associated with anxiety symptoms. Thus, this scenario poses towards a dire need of more evidence based research in this area to reach to a strong conclusion.

The aim of this study was to assess the awareness of covid-19, health anxiety and OC symptoms in the non-clinical population across the countries. It was hypothesized that awareness of coronavirus will significantly relate to health anxiety and OC symptoms in the general population.

Methods

Sample

A purposive sample of 264 respondents was taken for this surves, out of which, 127 were males and 137 were females. The mean age of respondents was 32.27 (SD 11.05) years ranging from 18 to 75 years. The minimum educational qualification of the sample was graduation. With an effect size of 0.6, alpha value at 0.05 level and power of 0.85 level, a minimum of 86 subjects were required. Hence the adequacy in the data strength was assured.

Tools

Information was collected based on sociodemographic data including age, gender, country of residence and education and other measures mentioned below-

1. **COVID-19 awareness measure:** Covid-19 awareness is self-report measure developed by authors in light of WHO press releases which intended to measure the participants' awareness level in respect to COVID – 19 pandemic. It consisted of 14 questions related to Covid-19 with response categories categorically coded as right and wrong. The response score ranged from 14-28. The total score of all 14 items was calculated in SPSS for the analysis purpose. Cronbach's Alpha of 14 items was found to be 0.63
2. **The Health Anxiety Questionnaire (Luckok, 1996):** The test consists of 21 items divided in to four sub scales, health worry and pre occupations, fear of illness and death, reassurance seeking behaviour and interference with life on a four point Likert scale ranging from '*not at all/rarely'* to '*most of the time'*. The internal consistency was calculated to be .92 by coefficient alpha reliability model. Test retest reliability was found to be .87 and split half reliability of the total sample was found to be .907. The discriminant validity by between group analysis of variance showed significant group effect (F=25.9; p< .0001).
3. **Y-Bocs Symptom Checklist (Goodman et al, 1989):** The Y-BOCS–II showed strong internal consistency for the Symptom Checklist (Kuder–Richardson-20=.91) and Severity Scale (alpha= .89). Test–retest and interrater reliabilities were both high (intraclass correlations > .85). It consists of 54 obsessions and compulsions based on a dichotomous rating. The interrater reliability (correlation coefficients) for total Y-Bocs score was calculated to be above (r=0.85).

Analysis

Required sample size was calculated with the help of G*power (version 3.1.9.4) software. A Pearson correlation was employed with the help of SPSS version 23 to explore the relationship between awareness about Covid-19 and various sub scales of Health Anxiety Questionnaire and Y-Bocs Symptom Checklist.

Procedure

This cross sectional study, designed via computer assisted self-interview (CASI) was conducted during the global lockdown period within Covid-19 affected countries of Asia, Middle East and European territory. The respondents were contacted by survey team members via email, Facebook and whatsapp platforms. Informed consent was obtained in the first section of the google form and hence the approval of institutional review board was not required considering the voluntary participation of the subjects. 264 respondents consented for the study and completed the survey. Respondents below the age of 18 years and below graduation level of education were not included in the study. All data records were anonymous and kept confidential. The period for data collection spanned one month (mid-May to mid-June 2020) when the Covid-19 cases were on a greater increase. After this no further responses were accepted. All data records were anonymous and kept confidential to avoid any controversies.

Results

Table1 to be pasted here

Table1 demonstrate Pearson's correlation to determine the relationship between awareness, health anxiety and obsession. A positive correlation was found between health anxiety and obsession (r = .185, p < .01) and health anxiety and compulsion (r = .162, p < .01). Significant positive correlation was also found between obsession and compulsion (r = .459, p < .01). This means that the increase in one variable will also increase the other.

Table 2 to be pasted here

The analysis in table 2 shows a significant positive correlation between awareness and interference with life (r= .155, p < .05) and repeating rituals compulsion (r= .170, p < .01) and a negative correlation with counting compulsion (r= -.206, p < .01), ordering arranging compulsion (r= -.162, p < .01) and hoarding collecting compulsion (r= -.146, p < .05).

A strong positive correlation was found between health worry pre occupation and fear of illness and death (r = .831, p < .01), reassurance seeking behaviour (r = .672, p < .01), interference with life (r = .667, p <. 01), aggressive obsession (r = .180, p < .01), contamination obsession (r = .174, p < .01), miscellaneous obsession (r = .184, p < .01), somatic obsession (r = .241, p < .01), cleanliness compulsion (r = .344, p < .01), checking compulsion (r = .144, p < .05), repeating rituals compulsion (r = .215, p < .01), miscellaneous compulsion (r = .195, p < .01) and negatively related with saving obsession (r = -.211, p < .01), counting compulsion (r = -.293, p < .01), ordering arranging compulsion *(*r = -.252, p < .01) and hoarding collecting compulsion*(*r = -.257, p < .01).

Fear of illness and death was significantly positive associated with reassurance seeking behavior (r = .647, p < .01), interference with life (r = .621, p < .01), aggressive obsession (r = .171, p < .01), contamination obsession (r =.145, p < .05), miscellaneous obsession (r =.180, p < .01), somatic obsession (r= .189, p < .01), cleanliness compulsion (r = .278, p < .01), checking compulsion(r = .163, p < .01), repeating rituals compulsion (r = .122, p < .05), miscellaneous compulsion (r= .137, p <.05) and negatively associated with saving obsession (r= -.163, p < .01), counting compulsion (r= -.209, p < .01), ordering arranging compulsion (r= -.175, p < .01) and hoarding collecting compulsion (r= -.272, p < .01).

Reassurance seeking behavior was significantly positively related with interference with life (r = .465, p < .01), miscellaneous obsession (r= .186, p < .01), somatic obsession (r= .167, p < .01), cleanliness compulsion (r= .188, p < .01), checking compulsion (r= .150, p < .05) and negatively related with saving obsession (r= -.200, p < .01), counting compulsion (r= -.222, p < .01), ordering arranging compulsion (r= -.198, p < .01) and hoarding collecting compulsion (r= -.241, p < .01).

Interference with life was significantly positively associated with sexual obsession (r= .160, p < .01), miscellaneous obsession (r= .141, p < .05), cleanliness compulsion (r= .142, p < .05), miscellaneous compulsion (r=.143, p < .05) and negatively associated with counting compulsion (r= -.138, p < .05) and hoarding collecting compulsion (r= -.180, p < .01).

Aggressive obsession was significantly positively correlated with contamination obsession (r= .532, p < .01), sexual obsession (r= .153, p < .05), miscellanies obsession (r= .457, p < .01), cleanliness compulsion (r= .272, p < .01), checking compulsion (r= .370, p< .01), repeating rituals compulsion (r =.222, p < .01), miscellaneous compulsion (r= .336, p< .01) and negatively correlated with saving obsession (r= -.176, p < .01), counting compulsion (r= -.259, p < .01), ordering arranging compulsion (r= -.187, p < .01) and hoarding collecting compulsion (r= -.212, p < .01).

Contamination obsession was significantly positively associated with sexual obsession (r= .131, p < .05), miscellaneous obsession (r= .410, p < .01), somatic obsession (r= .242, p < .01), cleanliness compulsion (r= .460, p < .01), checking compulsion (r=.407, p < .01), repeating rituals compulsion (r= .221, p < .01), miscellaneous compulsion (r= .308, p < .01) and negatively associated with saving compulsion (r= -.246, p < .01), counting compulsion (r= -.265, p < .01), ordering arranging compulsion (r= -.148, p < .05) and hoarding collecting compulsion (r= -.237, p < .01).

The result of correlation coefficient shows there was a significant positive relationship between sexual obsession and repeating rituals compulsion (r= .126, p < .05). Saving obsession was significantly negatively correlated with miscellaneous obsession (r= -.203, p < .01), cleanliness compulsion (r= -.220, p < .01), checking

compulsion (r= -.208, p < .01), repeating rituals compulsion (r= -.246, p < .01), miscellaneous compulsion (r= -.188, p < .01) and positively correlated with counting compulsion (r= .174, p < .01), ordering arranging compulsion (r= .158, p < .05) and hoarding collecting compulsion (r= .437, p < .01).

There was positive correlation between religious obsession and checking compulsion which was statistically significant (r= .132, p < .05).

Symmetry obsession was significantly negatively correlated with checking compulsion (r= -.196, p < .01), repeating rituals compulsion (r= -.189, p < .01), miscellaneous compulsion (r= -.173, p < .01) and positively correlated with counting compulsion (r= .149, p < .05), hoarding collecting compulsion *(*r= .139, p < .05). Miscellaneous obsession was significantly positively associated with cleanliness compulsion (r= .284, p < .01), checking compulsion (r= .510, p < .01), repeating rituals compulsion (r= .220, p < .01), miscellaneous compulsion (r= .394, p <.01) and negatively associated with counting compulsion (r= -.218, p < .01), ordering arranging compulsion (r= -.187, p < .01) and hoarding collecting compulsion (r= -.323, p < .01).

The result of correlation coefficient shows there was a significant positive relationship between somatic obsession and cleanliness compulsion (r= .322, p < .01).

Cleanliness compulsion was significantly positively correlated with checking compulsion (r= .283, p < .01), repeating rituals compulsion (r= .288, p < .01), miscellaneous compulsion (r= .328, p < .01) and negatively correlated with counting compulsion (r= -.328, p < .01), ordering arranging compulsion (r= -.197, p < .01), hoarding collecting compulsion (r= -.269, p < .01).

Checking compulsion was significantly positively associated with repeating rituals compulsion (r= .192, p < .01), miscellaneous compulsion (r= .431, p < .01) and negatively associated with counting compulsion (r= -.160, p < .01), ordering arranging compulsion (r= -.125, p < .05), hoarding collecting compulsion (r= -.290, p < .01).

Repeating rituals compulsion was significantly negatively related with counting compulsion (r= -.247, p < .01), ordering arranging compulsion (r= -.193, p< .01), hoarding collecting compulsion (r= -.234, p < .01) and positively related with miscellaneous compulsion (r= .284, p < .01).Counting compulsion was significantly positively correlated with ordering arranging compulsion (r= .439, p < .01), hoarding collecting compulsion (r= .310, p < .01) and negatively correlated with miscellaneous compulsion (r= -.305, p < .01).

Ordering arranging compulsion was significantly positively associated with hoarding collecting compulsion (r= .350, p < .01) and negatively associated with miscellaneous compulsion (r= -.152, p < .05). The result of correlation coefficient shows there was significant negative relationship between hoarding collecting compulsion and miscellaneous compulsion (r= -.273, p < .01).

Discussion

The overall correlation results of the present study indicate a significant relationship between health anxiety and OC symptoms which confirm the hypothesis that awareness of coronavirus will significantly relate to health anxiety and OC symptoms in healthy population.

Further results demonstrated that awareness of Covid-19 has significant relationship between various sub scales of HAI and Y-Bocs Symptom Checklist. Wherein, apart from the interrelations between sub scales of HAI and Y-Bocs, a correlation was found between the subscales of both. Awareness of Covid-19 was found to be positively correlated with interference with life and various types of obsessions and compulsions. Most relevant findings present a direct relationship of awareness with interference with life and repeating ritual compulsions. Whereas an inverse relationship could be seen with counting, ordering, arranging, hoarding and collecting compulsions. It means that when the individual is more aware about the pandemic information, he/she is more likely to be engaged in repeating rituals and experiencing an interference in their lives. However this awareness leads to a decrease in other compulsions such as counting, ordering, arranging, hoarding and collection.

Moreover, the findings also show a positive relationship of contamination obsession with cleanliness compulsion, health worry preoccupation and fear of illness of death. Health worry preoccupation is directly related to contamination and somatic obsession and other obsessions and compulsions as well. These findings seem to be appropriate as all these constructs are related and statistically significant. Fear of illness is also found

to be related with obsessions (such as, aggression, contamination, saving, somatic and others obsessions) and compulsions (such as, cleanliness, repeating, counting, checking, hoarding, ordering and other compulsions).

Reassurance seeking behaviour is found to be related with saving, somatic and other obsession and compulsions (like cleanliness, counting, checking, ordering and hoarding and other obsessions). Interference with life is significantly related with saving and other obsessions and compulsions (like cleanliness, counting, hoarding and other compulsions).

In the context of prevailing pandemic, these results project a very strong and reassuring findings which are in consistence with few contemporary studies where psychological effects of virus outbreak are found related (Rosenbaum, 2020; Özdin & Özdin, 2020; Xiong et al., 2020). The faulty ways of increasing the corona virus awareness through internet surfing, resulting in cyberchondria has also emerged as a strong associate of anxiety (Jungmann, & Witthöft, 2020) and have demonstrated other psychological problems. These studies are inclusive of most affected countries like Italy and China (Qiu et al., 2020; Nato et al., 2020).

So, in a continuum of high and low of health anxiety as defined by Taylor (2019), some fall under high and some under low, where people with high anxiety crowd the hospitals by frequent face to face consultations (Asmundson & Taylor, 2020). A study in UK demonstrated a greater increase in anxiety, sleep difficulties and alcohol consumption by 50% during the lockdown (Allington et al., 2020). This anxiety is also observed to have functional impairments in people ((Lee et al., 2020a; Lee et al., 2020b). Similarly, in USA, the demand of anti-anxiety drugs is also observed to be at a higher increase during lockdown period (Digon, 2020).

The association of H1N1 flu anxiety with OCD symptoms is well established in other studies (Abramowitz et al. 2011; APA, 2000). The similar responses were seen in case of SARS, Ebola, Zikavirus, Avian and other viruses outbreak (Bish & Michie, 2010; Blakey et al., 2015; Wheaton, et al., 201).

Conclusion

Comprehensive findings of the present study across the globe suggest that awareness of Coronavirus is associated with increased level of health anxiety and OC symptoms in general population. It is also concluded that health anxiety significantly correlates with obsessive and compulsive symptoms among this group..

Limitations

The findings of this study should be evaluated within its limitations. First, a bigger sample size will demonstrate better results. Second, CASI sampling led to an unequal country wise participation of subjects in the study because of which a separate country-wise investigation of the data could not be done. This left the authors with an inability to explore a nation wise scenario to check differentiated effects of coronavirus in various countries. Third, it is significantly limited in terms of revealing a cause–effect relationships, because the research is a cross-sectional and was based on convenience sampling.

Future recommendations

Further studies are recommended including the nation wise data to draw more concrete conclusions.

References

[1] Abramowitz, J. S., & Braddock, A. E. (2011). *Hypochondriasis and health anxiety*. Hogrefe & Huber.

[2] Abramowitz, J. S., Deacon, B. J., Olatunji, B. O., Wheaton, M. G., Berman, N. C., Losardo, D., Timpano, K. R., McGrath, P. B., Riemann, B. C., Adams, T., Björgvinsson, T., Storch, E. A., & Hale, L. R. (2010). Assessment of obsessive-compulsive symptom dimensions: Development and evaluation of the Dimensional Obsessive-Compulsive Scale. *Psychological Assessment, 22*(1), 180–198.https://doi.org/10.1037/a0018260

[3] American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders (Vol. 4 text revision). Washington, DC: Author. DOI: https://doi.org/10.1192/bjp.179.1.85-a

[4] Arnout, B.A., Al-Dabbagh, Z.S., Al-Eid, N.A., Al Eid, M.A., Al-Musaibeh, S.S., Al-Miqtiq, M.N., Alamri, A.S., & Al-Zeyad, G.M. (2020). The effects of corona virus (covid-19) outbreak on the individuals' mental health and on the decision makers: A comparative epidemiological study. *International Journal of Medical Research & Health Sciences*,*9*, 3, 26-47.

[5] Asmundson, G. J. G., & Taylor, S. (2020). How health anxiety influences responses to viral outbreaks like COVID-19: What all decision-makers, health authorities, and health care professionals need to know. Journal of Anxiety Disorders, 71, 102211. https://doi.org/10.1016/j.janxdis.2020.102211

[6] Banerjee, D. (2020). The other side of COVID-19: Impact on obsessive compulsive disorder (OCD) and hoarding. *Psychiatry Research, 288*, 112966. https://doi.org/10.1016/j.psychres.2020.112966

[7] Bish, A., & Michie, S. (2010). Demographic and attitudinal determi- nants of protective behaviors during a pandemic: A review. *British Journal of Health Psychology, 15*, 797–824. https://doi.org/10.1348/135910710X485826

[8] Blakey, S. M., Reuman, L., Jacoby, R. J., & Abramowitz, J. S. (2015). Tracing "Fearbola": Psychological predictors of anxious responding to the threat of Ebola. *Cognitive Therapy and Research, 39*, 816–825. https://doi.org/10.1007/s10608-015-9701-9

[9] Brand, J., McKay, D., Wheaton, M.G., & Abramowitz, J.S. (2013). The relationship between obsessive compulsive beliefs and symptoms, anxiety and disgust sensitivity, and Swine Flu fears. *Journal of Obsessive-Compulsive and Related Disorders, 2*,2, 200-206. https://doi.org/10.1016/j.jocrd.2013.01.007

[10] 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

[11] Allington, D., Duffy, B., Meyer, C., Moxhamhall, V., Murkin, G., Rubin, J., Strang, L., & Wessely, S. (2020, April 27). Accepting, the Suffering and the Resisting: the different reactions to life under lockdown. https://www.kcl.ac.uk/policy-institute/assets/Coronavirus-in-the-UK-cluster-analysis.pdf

[12] Deng, G., Li, H., & Song, X. (2020). Psychological status of health care workers during the outbreak of Coronavirus disease in China: a cross-sectional study. *Research Square*. https://doi.org/10.21203/rs.3.rs-18641/v1

[13] Goodman, W.K., Price, L.H., Rasmussen, S.A., Mazure, C., Fleischmann, R.L., Hill, C.L., Heninger, G.R., & Charney, D.S. (1989). The Yale-Brown Obsessive Compulsive Scale (Y-BOCS): Part I. Development, use, and reliability. *Archives of General Psychiatry*,*46*, 1006-1011, 1989. https://doi:10.1001/archpsyc.1989.01810110048007

[14] https://www.kcl.ac.uk/policy-institute/assets/Coronavirus-in-the-UK-cluster-analysis.pdf

[15] Jungmann, S. M., & Witthöft, M. (2020). Health anxiety, cyberchondria, and coping in the current COVID-19 pandemic: Which factors are related to coronavirus anxiety?. *Journal of Anxiety Disorders*, 102239. https://doi.org/10.1016/j.janxdis.2020.102239

[16] Kumar, A., & Somani, A. (2020). Dealing with Corona virus anxiety and OCD. *Asian Journal of Psychiatry*,*51*, 102053. https://doi.org/10.1016/j.ajp.2020.102053

[17] L. Rosenbaum, L. (2020). Facing covid-19 in italy - ethics, logistics, and therapeutics on the epidemic's front line. The New England Journal of Medicine. 10.1056/NEJMp2005492

[18] Lau, J.T.F., Yang, X., Tsui H., & Kim, J.H. (2003). Monitoring community responses to the SARS epidemic in Hong Kong: from day 10 to day 62. *Journal of Epidemiology and Community Health*,*57*, 864-70. http://dx.doi.org/10.1136/jech.57.11.864

[19] Leung, G. M., Ho, L. M., Chan, S. K. K., Ho, S. Y., Bacon-Shone, J., Choy, R. Y. L., & Fielding, R. (2005). Longitudinal assessment of community psychobehavioral responses during and after the 2003 outbreak of severe acute respiratory syndrome in Hong Kong. *Clinical Infectious Diseases*,*40*, 1713–20. https://doi.org/10.1086/429923

[20] Liu, N., Zhang, F., Wei, C., Jia, Y., Shang, Z., Sun, L., Wu, l., Sun, Z., Zhou, Y., Wang, Y., & Liu, W. (2020). Prevalence and predictors of PTSS during COVID-19 outbreak in China hardest-hit areas: Gender differences matter. Psychiatry Research, 287, 112921. https://doi.org/10.1016/j.psychres.2020.112921

[21] Nato, M., Almeida, H. G., Esmeraldo, J. D., Nobre, C. B., Pinheiro, W. R., de Oliveira, C., Sousa, I., Lima, O., Lima, N., Moreira, M. M., Lima, C., Júnior, J. G., & da Silva, C. (2020). When health professionals look death in the eye: the mental health of professionals who deal daily with the 2019 coronavirus outbreak. *Psychiatry Research*,*288*, 112972. https://doi.org/10.1016/j.psychres.2020.112972

[22] Olatunji, B. O., & Sawchuk, & C. N. (2005). Disgust: Characteristic features, social implications, and clinical manifestations. *Journal of Social and Clinical Psychology*,*24*, 932–962. https://doi.org/10.1521/jscp.2005.24.7.932

[23] Olatunji, B. O., Deacon, B. J., Abramowitz, J. S., & Valentiner, D. P. (2007a). Body vigilance in nonclinical and anxiety disorder samples: Structure, correlates, and prediction of health concerns. *Behavior Therapy*,*38*, 392–401. https://doi.org/10.1016/j.beth.2006.09.002

[24] Olatunji, B. O., Sawchuk, C. N., Lohr, J. M., & de Jong, P. J. (2004). Disgust domains in the prediction of contamination fear. *Behaviour Research and Therapy*,*42*, 93–104. https://doi.org/10.1016/S0005-7967(03)00102-5

[25] Özdin, S., & Özdin, Ş. B. (2020). Levels and predictors of anxiety, depression and health anxiety during COVID-19 pandemic in Turkish society: The importance of gender. *International Journal of Social Psychiatry*, 0020764020927051. https://doi.org/10.1177/0020764020927051

[26] Petrie, K. J., & Faasse, K. (2009, June 11). *Monitoring public anxiety about flu*. http://blogs.bmj.com/bmj/2009/06/ http://blogs.bmj.com/bmj/2009/06/11)

[27] Qiu, J., Shen, B., Zhao, M., Wnag, Z., Xie, B., & Xu, Y. (2020). A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations General Psychiatry 2020;33:e100213. http://dx.doi.org/10.1136/gpsych-2020-100213

[28] Rubin, G. J., Amlot, R., Page, L., & Wessely, S. (2009). Public perceptions, anxiety, and behaviour change in relation to the swine flu outbreak: Cross sectional telephone survey. *British Medical Journal*,*339*, b2651. https://doi.org/10.1136/bmj.b2651

[29] S. Digon (2020). Anti-anxiety prescription meds increase amid COVID-19 pandemic, report says. International Business Times. https://www.ibtimes.com/anti-anxiety-prescription-meds-increase-amid-covid-19-pandemic-report-says-2962093

[30] Lee, S.A. , Mathis, A.A. , Jobe, M.C. & Pappalardo, E.A. (2020). Clinically significant fear and anxiety of COVID-19: a psychometric examination of the Coronavirus Anxiety Scale Psychiatry Research. https://doi.org/10.1016/j.psychres.2020.113112

[31] Lee, S.A., Jobe, M.C., Mathis, A.A., & Gibbons, J.A. (2020). Incremental validity of coronaphobia: coronavirus anxiety explains depression, generalized anxiety, and death anxiety. *Journal of Anxiety Disorder., 74.* https://doi.org/10.1016/j.janxdis.2020.102268

[32] Santora, M. (2016). As experts confront the hazards of Zika, fear and uncertainty hover. *The New York Times*. http://www.nytimes.com/2020/04/26/nyregion/ theyre-out-there-in-zika-health-officials-see-a-mystery-on-mos-quito-wings.html?_r=0.

[33] Tausczik, Y., Faasse, K., Pennebaker, J.W., & Petrie, K.J. (2012). Public anxiety and information seeking following the h1n1 outbreak: blogs, newspaper articles, and wikipedia visits. *Health Communication*,*27*,*2*, 179-85. https://doi.org/10.1080/10410236.2011.571759

[34] Taylor, S. (2019). The psychology of pandemics: Preparing for the next global outbreak of infectious disease. Cambridge Scholars Publishing.

[35] Taylor, S., & Asmundson, G. (2004). *Treating health anxiety: A cognitive-behavioral approach*. Guilford.

[36] Taylor, S., McKay, D., & Abramowitz, J. S. (2012). Hypochondriasis and health-related anxiety. In P. Sturney & M. Hereson (Eds.), *Handbook of evidence-based practice in clinical psychology, Volume II* (pp. 603–619). Wiley.

[37] Torales, J., O'Higgins, M., Castaldelli-Maia, J. M., & Ventriglio, A. (2020). The outbreak of COVID-19 coronavirus and its impact on global mental health. International *Journal of Social Psychiatry*. *Advance online publication.* https://doi.org/10.1177/0020764020915212

[38] Wang, Y., Di, Y., Ye, J., & Wei, W. (2020). Study on the public psychological states and its related factors during the outbreak of coronavirus disease 2019 (COVID-19) in some regions of China. *Psychology, Health & Medicine*. *Advance online publication*. https://doi.org/10.1080/13548506.2020.1746817

[39] Wheaton, M. G., Abramowitz, J. S., Berman, N. C., Fabricant, L. E., & Olatunji, B. O. (2012). Psychological predictors of anxiety in response to the H1N1 (swine flu) pandemic. *Cognitive Therapy and Research*,*36*, 210–218. https://doi.org/10.1007/s10608-011-9353-3

[40] Wheaton, M. G., Berman, N. C., Franklin, J. C., & Abramowitz, J. S. (2010). Health anxiety: Latent structure and associations with anxiety-related psychological processes. *Journal of Psychopathology and Behavioral Assessment,32*, 565–574. https://doi.org/10.1007/s10862-010-9179-4

[41] World Health Organization (2020, April 19). *Coronavirus disease 2019 (COVID-19) Situation Report – 73.* https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200402-sitrep-73-Covid-19.pdf .

[42] Xie, X.F., Stone, E., Zheng, R., & Zhang, R.G. (2011). The 'Typhoon Eye Effect': Determinants of distress during the SARS epidemic. *Journal of Risk Research,14*, 1091–1107. https://doi.org/10.1080/13669877.2011.571790

[43] Xiong, J., Lipsitz, O., Nasri, F., Lui, L.M.W., Gill, H., Phan, L., Chen-Li, D., Lacobucci, M., Ho, R., Majeed, A., & Mclntyre, R.S. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of Affective Disorders*. https://doi.org/10.1016/j.jad.2020.08.001

[44] Zhang, Y., & Ma, Z. F. (2020). Impact of the COVID-19 pandemic on mental health and quality of life among local residents in Liaoning Province, China: A cross-sectional study. *International Journal of Environmental Research and Public Health*, *17*(7), Article 2381. https://doi.org/10.3390/ijerph17072381

[45] Zhou, F., Yu, T., Du, R., Fan, G., Liu, Y., Liu, Z., Xiang, J., Wang, Y., Song, B., Gu, X., Guan, L., Wi, Y., Li, H., Wu, X., Xu, J., Tu, S., Zhang, Y., Chen, H., & Cao, B. (2020). Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: A retrospective cohort study. *The Lancet, 395*(10229), 1054–1062. https://doi.org/10.1016/s0140-6736(20)30566-3

[46] Zhu, N., Zhang, D., Wang, W., Li, X., Yang, B., Song, J., Zhao, X., Huang, B., Shi, W., Lu, R., Niu, P., Zhan, F., Ma, X., Wang, D., Xu, W., Wu, G., Gao, G.F., & Wenjie, T. W. (2020). A Novel Coronavirus from Patients with Pneumonia in China, 2019. *The New England Journal of Medicine, 382*,727-733. http://doi.org/10.1056/NEJMoa2001017

Table1
Correlation between total scores of awareness, health anxiety obsessions and compulsions

Variables	Awareness	Health Anxiety	Obsessions	Compulsions
Awareness	1	.070	-.082	-.029
Health Anxiety		1	.185**	.162**
Obsessions			1	.459**
Compulsions				1

Note: ** p< .01 level

Table 2
Correlation between awareness and subscales of health anxiety, obsessions and compulsions

Variables	AWT	HWP	FID	RSB	IWL	AO	CO	SxO	SvO	RO	SymO	MO	SomO	CC	ChkC	RRC	CountC	OAC	HC	MC
AWT	1	.044	.043	.071	.155*	-.047	-.069	.053	-.031	.021	-.039	-.067	.007	.039	.005	.170**	-.206**	-.162**	-.146*	.038
HWP		1	.831**	.672**	.667**	.180**	.174**	.075	-.211**	.051	-.069	.184**	.241**	.344**	.144*	.215**	-.293**	-.252**	-.257**	.195**
FID			1	.647**	.621**	.171**	.145*	.084	-.163**	.018	.020	.180*	.189**	.278**	.163*	.122*	-.209**	-.175**	-.272**	.137*
RSB				1	.465**	.067	.074	.054	-.200	.071	.010	.186**	.167**	.188**	.150*	.117	-.222*	-.198	-.241	.100

									**								*	**	**	
IWL					1	.074	.005	.160**	-.074	-.037	-.108	.141*	-.008	.142*	.083	.086	-.138*	-.120	-.180**	.143*
AO						1	.532**	.153*	-.176**	.005	-.029	.457**	.090	.272**	.370**	.222**	-259**	-.187**	-.029	.006
CO							1	.131*	-.246**	.012	-.081	.410**	.242**	.460**	.407**	.221**	-265**	-.148**	-.237**	-.188**
SxO								1		-.019	.064	.044	-.027	-.006	.057	.126*	-045	-.050	-.029	.006
SvO									1	-.027	.101	-.203**	-.068	-.220**	-.208**	-.246**	.174**	.158*	.437**	-.188**
RO										1	-.088	.091	-.038	.046	.132*	.107	-.060	-.045	-.003	.024
SymO											1	-.098	.083	-.095	-.196**	-.189**	.149	.106	.139*	-.173**
MO												1	.070	.284**	.510**	.220**	-.218**	-.187**	-.323**	.394**
SomO													1	.322**	-.010	.040	-.051	-.094	-.101	.114
CC														1	.283**	.288**	-.328**	-.197**	-.269**	.328**
ChkC															1	.192**	-.160**	125*	-.290**	.431**
RRC																1	-247**	-.193**	-.234**	.284**
CountC																	1	.439**	.310**	-.305**
OAC																		1	.350**	-.152*
HC																			1	-.273**
MC																				1

*Note: ** p<.01 level ; Note: *p<.05 level ; AWT= Awareness total; HWP=health worry preoccupation; FID=fear of illness and death; RSB=reassurance seeking behavior; IWL=interference with life; AO=aggressive obsession; CO=contamination obsession; SxO=sexual obsession; SvO=saving obsession; RO=Religious obsession; SymO= symmetry obsession; MO= Miscellaneous obsession; SomO= somatic obsession; CC=cleanliness compulsion; ChkC=checking compulsion; RRC= repeating ritual compulsion; CountC=counting compulsion; OAC=ordering arranging compulsion; HC=Hoarding collecting compulsion; MC=miscellaneous compulsions*