The Relationships` Models between Anxiety Sensitivity, Disgust and Health Orientation Pre and During the COVID-19 Pandemic

Fouad Mohammed Aldawash Ph.D
Associate Professor of Counselling Psychology
Department of Psychology, A'Sharqiyah University, Ibra, Oman

Abstract: COVID-19 has had a significant impact on almost all aspects of students' lives, including their emotional states and Health Thoughts. The Current Research aimed to explore The Relationships Models of anxiety sensitivity, disgust, and health orientation Pre and During Covid-19 As the Students Self Reported. The sample consisted (705) male and female university students living in the Sultanate of Oman. They were graduates and undergraduates aged between 17 and 28 years, with a mean age of 24 years and a standard deviation (SD) of 2.56. The Anxiety Sensitivity Index, Disgust Scale-Revised, and Health Orientation Scale were administered; self-report for every Item of the Three Scales its continuum was repeated twice: one Pre the Covid 19 pandemic and the other During the Covid 19 pandemic. The results indicated that both anxiety sensitivity and disgust were significantly correlated with some aspects of health orientation Pre and during Covid-19, and the Indices Showed Goodness Fit of the Proposed Models Pre and During the Pandemic of Covid-19. These Results support Future Thinking in any Pandemic for Orienting counseling Programs for University students.

Keywords: Relationships` Models, anxiety sensitivity; disgust; health orientation; covid-19 pandemic

Introduction

The Outbreak of COVID-19 began in Dec 2019 in Wuhan City, China, and quickly spread to a global pandemic. In Jan 2020, the World Health Organization (WHO) declared a public health emergency based on the number of cases and deaths worldwide.

The pandemic has caused sudden and drastic disruptions in everyday life, resulting in a host of significant and interrelated stressors, including fear and uncertainty about the virus, loss of loved persons, social isolation, economic uncertainty, and increased caregiving demands (Czeisler et al., 2020; Xiong et al., 2020).

The negative consequences of the covid19 have been widely reported in healthcare (Bigiani et al., 2020), education (Radu et al., 2020), the economy (Agha & Agha, 2020), individuals’ daily lives (Di
Renzo et al., 2020) and mental health (Torales et al., 2020). Owing to unpredictable and uncontrollable attacks of COVID-19, a series of trauma-related psychological symptoms have emerged (Liu et al., 2021). These include depression, anxiety, stress, panic attacks, and posttraumatic stress (PTSS) (Hossain et al., 2022).

According to the American Psychiatric Association (2013), the age of onset of many disorders occurs in adolescence, so college students are particularly vulnerable to pandemic-related increases in psychological disturbances. Young adults experienced worse mental health outcomes, including increasing anxiety, depression, trauma and stressors-related disorders, substance use, and suicidal ideation (Twenge & Joiner, 2020; Zhou et al., 2020) Among university students, specifically, there are similar trends (Fu et al., 2021; Rodriguez-Hidalgo et al., 2020). Liu et al. (2020) found that rates of depression were nearly seven times higher, rates of anxiety were twice as high, and rates of PTSD symptoms were as high or higher compared with studies of university students conducted before the pandemic.

Thus, university students were the most affected age group due to the devastating impact of the pandemic. They not only experienced educational disruptions (e.g., rapid transition to online learning, challenges with access to technology) but also social network disruptions, housing disruptions when campuses shut down, and financial strain (Bobkov et al., 2021; George & Thomas, 2021; Li et al., 2021). Their thinking about educational and occupational opportunities has been greatly disturbed, which in turn increases their mental health vulnerability (Kujawa et al., 2020).

Several personality factors are associated with various mental health aspects. One such factor is anxiety sensitivity (AS) (Allan et al., 2015) due to its positive correlation with worry and fear of epidemic outbreaks (e.g., Zika and Ebola epidemics) (Blakey & Abramowitz, 2017; Blakey et al., 2015). Individuals who tend to have greater “fear of fear” may experience greater negative feelings during the prolonged COVID-19 pandemic. This negatively affects mental health (Kim et al., 2022).

Anxiety sensitivity (AS) is the “fear of fear,” which arises from the belief that the experience of anxiety has negative consequences, including illness, embarrassment, or additional anxiety (Reiss, 1991). Anxiety sensitivity has been associated with anxiety, depression, suicidal ideation, COVID-19-related distress, disability, and safety behaviors (Allan et al., 2021; Rogers et al., 2021; Saulnier et al., 2022; Schmidt et al., 2021; Warren et al., 2021). Anxiety sensitivity also moderates the relationship between COVID-19-related stress, anxiety, and functional impairment (Manning et al. 2021). Paluszek et al. (2021) and Schmidt et al. (2021) found A Relationship between anxiety sensitivity and depression and COVID-19 related fear and worry.

The emotion of disgust constitutes an integral part of the “behavioural immune system” (BIS) and is considered a factor facilitating disease prevention, motivating behavioural avoidance of situations, and stimuli that hold the potential for pathogen transmission (Schaller, 2011). It is a suite of affective (the emotion of disgust), cognitive (disease-relevant thoughts), and behavioural (avoidance of disgust stimuli) responses that collectively operate to limit disease transmission.

Disgust is a basic emotion with distinct behavioural, cognitive, and physiological dimensions (e.g., Levenson, 1992; Woody & Teachman, 2000) that functions to prevent contamination and disease.
Disgust sensitivity is defined as a predisposition to experiencing disgust in response to aversive stimuli. Such an emotional state has been considered a risk factor for anxiety (Olatunji & Sawchuk, 2005; de Jong & Merckelbach, 1998).

Disgust sensitivity is a significant predictor of response to the Covid-19 pandemic (e.g., De Coninck et al., 2020; Shook et al., 2020). More disgust-sensitive individuals express greater attitudinal concern about the virus and self-reported engagement in greater social distancing and other antiviral behaviours (e.g., hand washing, and mask-wearing) (Shook et al., 2020; Rothgerber et al., 2020).

A healthy attitude represents a lifestyle that reduces the risk of serious illnesses or early death (World Health Organization, 1999). According to Hayman and Worel (2014), patterns of dietary intake, physical activity and inactivity, smoking, and alcohol consumption are lifestyle indices that have been universally emphasized and accepted as evidence-based guidelines. Snell et al. (1991) found an association between health orientation and health-seeking behaviors, based on which came the effort in the current research to explore the relationships between health orientation, anxiety sensitivity, and disgust pre-and during the Covid-19 pandemic via self-reporting of university students.

Aldawash et al. (2021) suggest a framework to explain the dynamics of health orientation. It is a state of interaction among the personality triad: knowledge, affect, and tendency leading to observable external healthy behaviours. These behaviours become habits owing to the semi-permanent repetition of these habits concurrent with reinforcement. Eventually, they become health-oriented.

Materials and Methods

The Participants

This study aimed to investigate anxiety sensitivity and disgust in relation to health orientation pre and during the Covid-19 pandemic among university students in the Sultanate of Oman via self-report. Before applying the Google form that contained The Scales, ethical approval was obtained from RESEARCH ETHICS & BIOSAFETY COMMITTEE (UREBC) of A'Sharqiyah University under the code number (ASU/UREBC/23/04), and students provided informed consent for the participation of responding to Scales, All the Samples Accepted by Reading the Primary Instructions and Completing their Responses. This study used a descriptive, correlational design. The participants were (705) male and female university students. They were between 17 and 28 years with a mean age of 24, S.D 2.5 from A'Sharqiyah University in the Sultanate of Oman, graduated 22-28 with a mean age of 25.02, S.D 1.29, and undergraduates 17-22 with a mean of 19.3, S.D 1.4; enrolled in the spring semester of 2023 with a bachelor's degree. The graduates were enrolled in an educational diploma and volunteered to participate in the study.

Anxiety Sensitivity Index (ASI)

Reiss et al. (1986) founded the index and analysed its psychometric properties on college students (49 men and 98 males and females) enrolled in the winter semester and spring of Introductory Psychology at an urban university. The test–retest reliability of ASI was computed for the combined sample. The Pearson product-moment correlations were as follows: 0.71 (for 54 men), 0.74 (for 73 women), and 0.75 (for 127 5s). These findings reveal that ASI has adequate test/retest reliability. Principal
component factor analysis of the ASI was also performed. The results revealed a single-factor structure, in which 13 of the 16 items had a loading of 0.4.

Within a Plan for preparing Tools from Oct 2022 to Feb, 2023, Aldawash, Elhudyaybi, and abu-Hasshish Translated ASI and Disgust Scales into Arabic and Asked 2 Bilingual Experts to make back translations to English. Aldawash et al.(2023) found little difference between the two versions and made a little modification according to the bilingual experts. For the Same Project in Preparing tools, near the end of Fall Semester 2022 and the Start of Spring Semester 2023, Aldawash Asked for volunteers of A’ Sharqiyah Students for Responding to the scales, 71 subjects (males 22, Females 39) Responded to the Scales.

Psychometric Properties of ASI

Internal consistency was analyzed using Pearson’s correlation between each item and the ASI total score. The results showed a range of intercorrelations between 0.715 and 0.327, with a p-value of 0.01.

For the Reliability of ASI Cronbach's alpha was (0.718), and that of the split-half method using Spearman-Brown coefficients were (0.942). These values indicate the good reliability of the ASI.

The Disgust Scale - Revised (DS-R)

Disgust Scale-Revised (DS-R) is a widely used psychometric tool for assessing individual differences in disgust sensitivity (Olatunji et al., 2007). It was derived from the original Disgust Scale (DS) developed by Haidt et al. (1994) to investigate the emotional state of disgust, focusing on certain stimuli eliciting disgust. It consists of 32 items and eight domains of disgust elicitors: animals, food, hygiene, magical thinking, sex, body products, death, and envelope violations. Olatunji et al. (2007) suggested a reduction in eight subscales, leading to the development of the DS-R. The newly revised DS-R has 27 items measured on a 5-point Likert Scale (from 0 to 4), 25 of them concern disgust and 2 of them are “catch” questions for identifying poor responders.

Psychometric Properties of the DS-R

For the Arabic version, internal consistency was determined using Pearson’s correlation between each item and the total score, showing that The Range of Intercorrelations ranged from 0.743 to 0.265 (0.05,0.01).

Cronbach’s alpha. for the DS-R of both dimensions and the total score were (0.875, 0.858, and 0.905), and the split-half method using Spearman-Brown coefficients for the dimensions and total scores were (0.912, 0.770, and 0.738)

The Health Orientation Scale (HOS)

Snell et al. (1991) developed the Health Orientation Scale (HOS) to measure personality variables related to physical health, such as personal health consciousness(PHC), health image concerns (HIC), health anxiety (HA), health esteem-confidence (HEC), motivation to avoid unhealthiness (MAU), motivation for healthiness (MH), internal health control ( HIC), external health control(HEC), health expectations (HE) and health status(HS). Snell et al. examined the factor structure of the HOS using the
varimax rotation method of ten subscales. The HOS was translated into Arabic and Validated by Hafez et al. (2020).

Psychometric Properties of the HOS

In the current study, intercorrelations among the HOS dimensions revealed the highest 0.837 correlative value between MH and the Total Score of HOS, The lowest 0.138 between HEC and the Total Score of HOS. The Reliability of HOS using Cronbach's alpha in Table 1 Shows the Highest was 0.784 for (MH) and the lowest was 0.688 for (HEC).

<table>
<thead>
<tr>
<th>Health Orientation Scale (HOS)</th>
<th>Cronbach's alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Health Consciousness (PHC)</td>
<td>0.757</td>
</tr>
<tr>
<td>Health Image Concern (HIC)</td>
<td>0.718</td>
</tr>
<tr>
<td>Health Anxiety (HA)</td>
<td>0.772</td>
</tr>
<tr>
<td>Health-Esteem and Confidence (HEC)</td>
<td>0.701</td>
</tr>
<tr>
<td>Motivation to Avoid Unhealthiness (MAU)</td>
<td>0.756</td>
</tr>
<tr>
<td>Motivation for Healthiness (MH)</td>
<td>0.784</td>
</tr>
<tr>
<td>Health Internal Control (HIC)</td>
<td>0.762</td>
</tr>
<tr>
<td>Health External Control (HEC)</td>
<td>0.688</td>
</tr>
<tr>
<td>Health Expectations (HE)</td>
<td>0.735</td>
</tr>
<tr>
<td>Health Status (HS)</td>
<td>0.704</td>
</tr>
<tr>
<td><strong>Health Orientation Scale (HOS)</strong></td>
<td><strong>0.723</strong></td>
</tr>
</tbody>
</table>

**Results and Discussion**

The Pearson correlation coefficient was used to analyse the relationships between ASI, DS-R, and HOS Pre and during the COVID-19 pandemic. The findings in Table (2) indicate that there was a significant positive relationship between the total score and both dimensions of DS and the total score and some dimensions of HOS (PHC, MAU, HEC, HEC, and HIC) before and during the Covid-19 pandemic. This correlation was stronger during the pandemic. However, no significant relationship was found between the total score and either dimension of DS or other dimensions of HOS (HE, MH, HA, and HS) before or during the pandemic. On the other hand, there was a significant positive relationship between ASI and the total score of HOS before and some dimensions (HA, HIC, PHC, MAU, HIC, and MH) during the Covid-19 pandemic.
### Table 2. Correlations between HOS, DS-R, and ASI Pre and during the COVID-19 pandemic

| Health Orientation Scale (HOS) | Before the pandemic | During the pandemic | | | |
|-------------------------------|---------------------|---------------------|------------------|---------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                               | The Disgust Scale - Revised (DS-R) | Anxiety sensitivity (AS) | The Disgust Scale - Revised (DS-R) | Anxiety sensitivity (AS) |
|                               | Factor 1 | Factor 2 | Total | Factor 1 | Factor 2 | Total | Factor 1 | Factor 2 | Total |
| Personal Health Consciousness (PHC) | 0.144** | 0.216** | 0.205** | 0.302** | 0.161* | 0.25** | 0.233** | 0.310** |
| Health Image Concern (HIC) | -0.008 | 0.130 | 0.064 | 0.283** | 0.000 | 0.163* | 0.085 | 0.308** |
| Health Anxiety (HA) | 0.089 | 0.083 | 0.100 | 0.411** | 0.081 | 0.138 | 0.123 | 0.398** |
| Health-Esteem and Confidence (HEC) | 0.145* | 0.165* | 0.179* | 0.046 | 0.110 | 0.169* | 0.159* | 0.091 |
| Motivation to Avoid unhealthiness (MAU) | 0.148* | 0.146* | 0.170* | 0.224** | 0.161* | 0.219** | 0.217** | 0.273** |
| Motivation for Healthiness (MH) | 0.111 | 0.135 | 0.141* | 0.183* | 0.155* | 0.187** | 0.197** | 0.237** |
| Health Internal Control (HIC) | 0.233** | 0.281** | 0.296** | 0.345** | 0.268** | 0.304** | 0.330** | 0.338** |
| Health External Control (HEC) | -0.174* | 0.090 | -0.157* | -0.015 | 0.205** | 0.075 | -0.171* | -0.014 |
| Health Expectations (HE) | 0.101 | 0.096 | 0.114 | 0.051 | 0.089 | 0.094 | 0.106 | 0.081 |
| Health Status (HS) | 0.094 | 0.076 | 0.100 | -0.057 | 0.043 | 0.15 | 0.036 | -0.113 |
| Health Orientation Scale (HOS) | 0.156* | 0.217** | 0.214** | 0.324** | 0.160* | 0.268** | 0.242** | 0.363** |

The Relationships Model of Pre Covid-19 between (HOS), (AS) and (DS) using IBM Spss Amos v24 in Figure (1b) and its indices in Table (3) showed no Fit, because was not Significant; /Df was very weak in Goodness of Fit, and Root Mean Square Error of Approximation (RMSEA) was not significant; that mean acceptance the Null hypothesis; This Results Are Showing the Relationships Paths of (AS), (DS) and (HOS) Pre the Covid-19 Pandemic. The Relationships Model of During Covid-19 between (HOS), (AS) and (DS) In Figure (2) and its Indices in Table (4) showed Goodness; Comparative Fit Index (CFI), Normed Fit Index (NFI), and Incremental Fit Index (IFI) were Significant.
Figure 1. The Relationships` Model of Pre Covid-19 between (HOS ), (AS ) and (DS)

![Diagram 1]

Figure 2. The Relationships` Model of During Covid-19 between (HOS ), (AS ) and (DS)

![Diagram 2]

Table 3. Indices of The relationship Model of Pre Covid-19 (HOS ), (AS ), and (DS)

<table>
<thead>
<tr>
<th>Indices</th>
<th>Value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ( \chi^2 )</td>
<td>305.387</td>
<td>0.000</td>
</tr>
<tr>
<td>2 ( \chi^2 / \text{df Relative} )</td>
<td>4.847</td>
<td>0-5</td>
</tr>
<tr>
<td>2 RMSEA</td>
<td>0.103</td>
<td>1 -0.095</td>
</tr>
</tbody>
</table>
Table 4. Indices of The Relationships` Model of During Covid-19 (HOS, AS) and (DS)

<table>
<thead>
<tr>
<th>Indices</th>
<th>Value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 CFI</td>
<td>0.399</td>
<td>1 -0.095</td>
</tr>
<tr>
<td>3 NFI</td>
<td>0.384</td>
<td>1 -0.095</td>
</tr>
<tr>
<td>4 IFI</td>
<td>0.409</td>
<td>1 -0.095</td>
</tr>
</tbody>
</table>

The spread of COVID-19 forced governments to make restrictive decisions. In the Sultanate of Oman, the government has imposed strict restrictions on the entire population. Being forced to stay indoors for an extended period of time dramatically changes one's health orientation owing to many factors. The findings indicated that students with Anxiety Sensitivity and disgust are more likely to be affected in their health orientation Pre and during the COVID-19 pandemic. These findings are consistent with previous research showing that adaptive changes in health behaviors can be attributed to fear of infection (Csépe et al., 2021), anxiety sensitivity consistently impacts COVID-19 worries and behaviors (Saulnier et al., 2022) and disgust sensitivity is a stronger predictor of pandemic response (Kim et al., 2022; Ruisch et al., 2022).

**Conclusion**

It is concluded that the relationships model Pre covid19 between Anxiety Sensitivity, Disgust, and Health Orientation was not significant. However, the relationship model between these variables during covid19 was significant with incremental goodness fit indices, which means that any future pandemics will activate anxiety sensitivity, disgust, and low health orientation.

**Recommendations**

Finally, there is a Predictive Value of Using the Results of Relationships between Anxiety Sensitivity, Disgust, and Health Orientation in any Planning for Managing Students` Emotions, Cognitions, and Behavior during any Pandemics in the future. The Outcome of Current Research also helps In Preparing a manual for helping students deal with Anxiety, Disgust during the Pandemic, and adopting a positive health orientation, despite the pandemic conditions.

**Funding**

The results of this study were obtained through a research project funded by the Ministry of Higher Education, Scientific Research, and Innovation in the Sultanate of Oman within the framework of an Institutional Research Support Program based on Competency (Block Funding Program) with Contract No. (MoHERI/BFP/ASU/01/2021).

**References**


Available Online: https://aipublisher.org/articles?journal_id=2&volume=5&issue=8


