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Editors: Sharo Shafaie & Deborah G. Wooldridge



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**Sciences Volume 9 – Issue 1 – Summer 2023**

Edited by Dr Sharo Shafaie & Dr Deborah G. Wooldridge



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## The IAFOR's Journal of Psychology and the Behavioral Sciences

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Volume 9 – Issue 1 – 2023

Editors' Note:

This Issue of the *IAFOR's Journal of Psychology & the Behavioral Sciences* covers a variety of empirical studies about applications of psychological theories in educational and mental health settings. Moreover, the journal highlights studies that investigate topics regarding mental health issues related to hoarding, resiliency, social behavior, adjustments, and psychological distress, as well as articles focused on the impact of COVID-19.

*The IAFOR Journal of Psychology & the Behavioral Sciences* is a peer-reviewed, editorially independent, and an interdisciplinary journal associated with the IAFOR (The International Academic Forum) conferences on Psychology and the Behavioral Sciences. This issue is devoted to several interdisciplinary studies which represent diverse topics, cultures, and disciplines in the fields of psychology and the behavioral sciences. All manuscripts published in the journal have been subjected to the thorough and accepted processes of academic peer review. Some of the articles are original, and some are significantly revised versions of previously presented papers or published reports in the IAFOR's conferences and proceedings.

We want to express our sincere appreciation to all reviewers for taking time from their busy schedules to review each assigned manuscript and offer their professional expertise and recommendations for improvement of these published articles. Also, we like to take this opportunity to acknowledge the hard work of our support who were involved with the publication of this journal.

Please note that we are seeking manuscripts for our upcoming Fall 2023 issue. Below is the link to the journal's web page for your attention; please review this web page to become familiar with the journal's objectives and the submission guidelines for authors: <http://iafor.org/publications/iafor-journals/iafor-journal-of-psychology-and-the-behavioralsciences/>

If you have any questions, please do not hesitate to contact us, otherwise please send your manuscript to the journal's editors below. Thank you for considering this invitation, and we look forward to hearing from you soon.

Best Regards,

Journal Editors

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*IAFOR Journal of Psychology & the Behavioral Sciences Volume 9 Issue 1*

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## Notes on Contributors

Article 1:

### **Psychological Distress, Quality of Life and Resilience among Undergraduate Students in the Post-COVID-19 Era**

#### **Dr Nahal Salimi**

Nahal Salimi, PhD, is an assistant professor of rehabilitation counseling on the tenure track. She received her doctorate in rehabilitation counseling from Southern Illinois University-Carbondale. Dr Salimi's primary research interests have been in the areas of disability attitudes, quality of life and mental health, coping strategies for persons living with HIV/AIDS, and potential challenges of vocational assessment and career placement of racial and ethnic minorities.

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Bryan O Gere, PhD, is an Associate Professor & Graduate Program Director in the Department of Rehabilitation, University of Maryland Eastern Shore, MD. His scholarly activities fall under broad disciplinary fields: vocational rehabilitation and training, public health and rural health research, mental health, addictions and co-occurring mental health, HIV/AIDS, health disparities among minorities and underserved populations, leadership, disability, and access to services for rural populations.

#### **Dr William Taley**

William Talley is a Professor and Chair of the Department of Rehabilitation, University of Maryland Eastern Shore, MD. He has numerous research interests and has published in such diverse areas as private sector rehabilitation, multicultural counseling, mentoring, anxiety and depression, and the recruitment and retention of faculty.

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Aisha Yarrow is a graduate student in the Department of Rehabilitation, at Northern Illinois University. She has experience working with individuals with intellectual and developmental disabilities. Her research interests include mental health and developmental disabilities.

#### **Andre Hampton**

Andre Hampton is a graduate student in the Department of Rehabilitation, University of Maryland Eastern Shore. He has previously worked as a peer support specialist and recently as a residential hall director at the University of Maryland Eastern Shore. His research interests include mental health and disability among minorities.

Article 2:

### **Public Attitudes Towards Non-Criminal Preventive Detention as a Function of the COVID-19 Pandemic**

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Dr Gamache is a lecturer at Roger Williams University and a mental health clinician. He specializes in positive psychological constructs and student success.

**Dr Judith Platania**

Dr Platania is Professor Emerita of Roger Williams University. Her research addresses extra-legal factors jurors consider during the sentencing phase of capital trials.

Article 3:

**An Assessment of Resilience Amongst the Residents of Zimbabwe Between the Years 2005 to 2022****Gabriellah Tatenda Machumi**

Gabriellah Tatenda Machumi is a highly accomplished ISO – International Patient Unit Supervisor for Near East Group of Hospitals, who have a passion for research, mental health and awareness, and public speaking. Her sincere, and social nature, coupled with her hard-working and enthusiastic approach, have helped her to become successful professional in her field. Gabriellah's journey began with her academic achievements. She was the valedictorian of her class and earned a bachelor's degree in psychology at Near East University in Cyprus, which laid the foundation for a successful career in healthcare. She has since used her education and expertise to make significant contributions to her field, particularly in the area of international patient care.

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Article 4:

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Ms Samra Siddiqui has been a student of the MED programmes of the Department of Education at Aligarh Muslim University since 2021. Her areas of interest are Educational Psychology, Educational Administration and Environmental Education. She plans to pursue her doctoral research in Educational Psychology. She is a budding researcher; this is her first publication with her supervisor, Anjum Ahmed.

Article 5:

### **Development and Initial Validation of the Filipino Youth Hoarding Rating Scale**

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Rhalf Jayson Guanco is a clinical and neurodevelopmental psychologist in the Philippines. He is currently an assistant professor in the Adventist University of the Philippines' Graduate and Undergraduate Psychology program. He is also the approved global engagement representative for the Philippines and the Newsletter Editor in the International Neuropsychological Society, International affiliate of the American Psychological Association, member of the International Association of Applied Psychology, and member of Psychological Association of the Philippines. He is a dedicated mental health professional who has traveled to countries in South-east Asia and locations throughout the Philippines to advocate for sound brain behavior relationship, help the community flourish, provide mental health consultation, and train willing volunteers to promote mental health awareness.

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**Psychological Distress, Quality of Life and Resilience among  
Undergraduate Students in the Post-COVID-19 Era**

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### **Abstract**

Although the end of the COVID-19 pandemic appears to be in sight, college students are still suffering from the adverse effects of the COVID-19 pandemic. Nearly two years after the pandemic, numerous college students are now back on their college campuses or completing their college education. However, students are still dealing with COVID-19 related psychological and psychosocial stressors, as they attempt to adapt to the socio-economic, cultural, and environmental changes within their campuses, homes, and communities. The purpose of this descriptive cross-sectional study was to investigate the relationships between psychological distress, quality of life, coping, and psychological resilience among undergraduate college students in post COVID-19 pandemic era. The results indicated that psychological distress was prevalent among undergraduate students during the COVID-19 pandemic. However, the results showed that the quality of life for undergraduate students was high in some domains and low in others. Additionally, the results show that students exhibited moderate resilience. Implications for practitioners and administrators were discussed.

*Keywords:* COVID-19, psychological distress, quality of life, resilience



In recent years following the COVID-19 pandemic, mental health has become a growing concern among college students. Research shows that, historically, adjusting to college life has been stressful for college students (Alonso et al., 2018; Duffy et al., 2019; Kim et al., 2022). According to Duffy et al. (2019) suicidal thinking, severe depression, and self-harm behaviors have doubled among college students between 2018 and 2019. Previous studies have indicated that college students are susceptible to mental health problems such as stress, anxiety, and depression (Jardon & Choi, 2022; Ren et al., 2021). The COVID 19 pandemic has added additional stressors for many college students, and as they attempt to adapt to the socio-economic, cultural, and environmental changes within their campuses, homes, and communities (Ambelu et al., 2021; Salimi et al., 2021; Yu et al., 2021;).

Consequently, there is evidence that there is increase in mental health problems (higher levels of psychological distress, depression fatigue, sadness, anxiety, avoidance of social situations, fear, anger, and even increased substance use) among college students (Babicka-Wirkus et al, 2021; Becerra et al., 2020; Dogan-Sander et al, 2021; Jenkins et al., 2020). Research indicates that even students who did not have any diagnosed mental health concerns before the pandemic are now experiencing some form of mental illness due to the isolation, fear, uncertainty, economic strain and other conditions during and following the pandemic (Saunders et al., 2021). Following the return to campus, many students are now experiencing economic stressors that are likely to impact their mental health. For instance, for the 2021-22 academic year, average tuition and fees rose by 1.3% for students at two-year schools; 1.6% for in-state students at four-year public colleges; and 2.1% for students at four-year private institutions (Consumer News and Business Channel[CNBC], 2021). Associatively, since 2021 inflation has been high and remained high impacting students' necessities, such as housing, food and transportation (Cao et al., 2020; Perz et al., 2020; Wang et al., 2020). Additionally, many students are re-learning how to socialize given the long period of isolation (Cao et al., 2020; Perz et al., 2020; Wang et al., 2020).

These challenges are likely to affect students' academic functioning and quality of life as they return to school (Yu et al., 2021). The literature is already replete with examples of increased problems in academic settings such as lowered average course scores (bell curve), and increased reports of the need for counseling services (Cao et al., 2020; Pincus et al, 2020; Wang et al., 2020). Therefore, there is need to examine these stressors and how they impact students' overall wellbeing in the current dispensation.

### **COVID-19 Related Psychological Distress and University Students**

Psychological distress is an internal response to external stressors and can exist on a continuum from the adaptive to the extreme response (Tomitaka et al., 2019). It can manifest itself by the individual developing and experiencing psychiatric conditions such as depression and anxiety disorders (Tomitaka et al., 2019). Also, Drapeau et al., (2012) note that psychological distress is associated with a variety of symptoms such as depression, anxiety, anger, functional impairment, and behavioral difficulties. Individuals with intense psychological distress are likely to have poorer health outcomes and an increased risk of mortality (Barry et al., 2020).

Recent research indicates an increase in psychological distress, stress, and anxiety among college students during the COVID-19 pandemic (Hasan & Bao, 2020; Son et al., 2020). In the study conducted by Son et al. (2020) a sample of 195 students, 138 (71%) reported experiencing psychological issues including increased levels of stress, anxiety, fear, difficulty in concentrating, and worries about their own health and their loved ones. In a similar study conducted by Hasan and Bao (2020), fear of academic year loss (not graduating on time) was reported as the main source of psychological distress among college students during the COVID-19 lockdown.

Although some researchers have studied the psychological distress and quality of life of college students, there is still scant evidence on how the presence of COVID-19 continues to impact college students (Babicka-Wirkus et al, 2021; Becerra et al., 2020; Browning et al., 2021). Psychological distress impacts several areas of students' lives. These areas can include physical, cognitive, and emotional functioning, problems with interpersonal relationships, the onset of anhedonia, poor self-efficacy, and poor academic performance. More importantly, psychological distress among college students may progress to more severe psychiatric disorders if not addressed in a timely manner. Additionally, many college students, especially undergraduate students have poor help-seeking behavior for mental health problems including psychological distress (Gere et al., 2020), as well as those who neglect physical health may add to their overall health concerns.

### **Coping and Resilience among College Students During the COVID-19 Pandemic**

Coping and resilience have been identified as effective strategies for dealing with stressful events that impact the physical and mental health of individuals. Coping refers to both cognitive and behavioral strategies used to face stressful events and manage negative psychological and physical outcomes (Wu et al., 2020). However, resilience refers to the adaptive capacities to recover from stressful situations in the face of adversity (Wu et al., 2020). The American Psychological Association ([APA], 2014) also defines resilience as the process of adapting well in the face of significant sources of stress such as trauma and tragedy. Babicka et al. (2021) examined university students' strategies for coping with stress during the coronavirus pandemic in Poland. The authors observed that similar to many other countries, the sudden changes in both higher education and daily life caused students to experience anxiety, depression, and stress. The findings also showed that among all other kinds of coping skills, students most often used the coping strategies of acceptance, planning, and seeking emotional support during the pandemic. The study also suggested that the youngest students had the lowest coping skills.

Literature shows that high psychological resilience is positively correlated with positive indicators of mental health, such as life satisfaction and subjective well-being, and it is negatively correlated with negative mental health indicators such as depression or anxiety (Hu et al., 2015; Wu et al., 2020). Psychological resilience is therefore important to students' positive mental health outcomes, as it helps them to approach new situations, or experiences with confidence and a positive mindset, which will make them more likely to academically

succeed. Undoubtedly, psychological distress, isolation, loneliness, depression, and anxiety will be common experiences for many college students due to the COVID-19 pandemic, especially as students return to campus. Studies also show that college students are experiencing higher levels of social and emotional loneliness following the COVID-19 pandemic. For instance, in the study conducted by Labrague et al. (2021), the authors found that experiencing loneliness was significantly higher among college students. They also identified resilience, coping behaviors, and social support as protective factors against loneliness. In a similar study, resilience was examined as being a mediator in the relationship between stress-associated with the COVID-19 pandemic, life satisfaction, and psychological well-being among nursing students. The result of this cross-sectional research revealed that students experienced a high level of stress associated with the pandemic; however, their resilience, life satisfaction, and psychological well-being were found to be moderate to high (Labrague, 2021).

### **Demographic Factors, Psychological Distress, Coping, and Resilience among College Students Before and During the COVID**

Previous research suggests that demographic factors such as age and disability status may contribute to psychological distress and coping and resilience among college students (Alang et al., 2014; Brougham et al., 2009; Nieuwoudt, 2021; Varma et al., 2021). For instance, in a study examining the variable of anger, the authors reported that younger college students generally had higher psychological distress than older students, with significant correlations between age and depression, and age and anxiety (Nieuwoudt, 2021). In a related study, Hunt et al. (2021) also found that gender-diverse college students exhibit higher psychological distress than male and female peers during the novel coronavirus (COVID-19) pandemic. Similarly, younger college students have been found to have a lower quality of life due to poor interpersonal relations, depression, and low self-esteem (Nur et al., 2017). In terms of gender difference, Grave et al. (2021) found that female college students cope better emotionally in general than males and they have mostly utilized the emotion-focused approach involving the use of self-distraction, emotional support, instrumental support, and venting. However, relative to resilience, the results have been disparate. For instance, Erdogan et al. (2015) that males college students exhibited higher resilience compared to female students. Samiento et al. (2021), on the other hand, indicated that female college students exhibited higher resilience than males. Therefore, additional research needs to be completed to gain better insight into this phenomenon especially in the current times.

### **Quality of Life of College Students During the COVID-19 Pandemic**

The quality of life of college students has also been reported to be on the decline following the COVID-19 pandemic. In the study conducted by Panayitou et al. (2021), the results indicated a significant decrease in physical and psychological quality of life. In a similar study, college students were asked to complete assessments related to physical activity, positive and negative affects, sleep quality, food insecurity, and stressful life events. Findings showed that the majority of participants experienced clinically meaningful levels of stressful life events during

the pandemic (Maheri et al., 2021). It was also reported that physical activity is significantly associated with enhancing the level of mental health during a time of uncertainty. College students who experienced reduced or poor quality of life also experience social and mental health problems such as poor interpersonal relations, depression, and low self-esteem (Nur et al., 2017). Although several studies have examined the relationship between resilience and quality of life regarding a number of psychological distresses among university or college students, few studies have investigated the prevalence of psychological distress, level of resilience, and quality of life among undergraduate students following the COVID 19 pandemic. Therefore, this study sought to address this gap in the literature by examining the topic under consideration. To achieve the purpose of the study, the following questions were posed:

1. What is the prevalence of psychological distress among undergraduate students nearly two years after the COVID-19 pandemic?
2. What are the determinants of quality of life for undergraduate students nearly two years COVID-19 pandemic?
3. What is the level of psychological resilience among undergraduate students during the nearly two years pandemic?
4. Is there a relationship between psychological resilience and the quality of life of undergraduate students?

## **Methodology**

### **Design of the Study**

The purpose of this descriptive cross-sectional study was to investigate the psychological distress, quality of life, and resilience among undergraduate students two years after the COVID 19 pandemic at a large university in a Midwestern State of the United States during the fall of 2021 and spring 2022. A descriptive cross-sectional study is a study in which a condition and potentially related factors are measured at a specific point in time for a defined population (Gray et al., 2007). A web-based survey resource called Qualtrics was used in this study. The survey was accessible via a link in an invitation prompt that was sent to all participants. The invitation prompt introduced the researcher, institutional approval for the study, the nature of the study, statements about confidentiality, and informed consent. Participants were invited to complete the survey voluntarily and they were able to complete the survey online and anonymously; no personal or identifying information such as email addresses, names, and IP addresses was collected.

### **Participants**

The participants for the study were undergraduate students who were enrolled in a large Midwestern University during the fall semester of 2021 and spring of 2022. The school is diverse in terms of religious beliefs, race, language, ethnicity, gender, disability, and so on. The sample for the study was 160 students. The breakdown showed that the majority of the participants 159 (99.4%) were aged 18-28 years, and only 1 (.6%) was between the ages of 40-

50 years. Of the 160 participants, 123 (76.9%) were female, 30 (18.8%) male and 7 (4.4%) non-binaries. In terms of a formal diagnosis of a disability, 38 (23.8%) of the participants had a mental disability and 14 (8.8%) had a physical disability. Among the respondents, 19 (11.9%) also reported active use of non-prescription drugs (drugs and other psychotic substances).

### Demographic Variables

Previous research studies indicated that demographic variables such as sex, age, and academic major might predict psychological distress and resilience among students in general. The predictor variables for this study included the following:

- I. Gender: (trichotomous as female, male, intersex)- *Hypothesis*: Female students will report higher psychological distress (Brougham et al., 2009), and male students will report a higher resilience than female undergraduates (Lasota et al., 2020).
- II. History of any disability: *Hypothesis*: Students with disabilities (both physical and mental conditions) will achieve higher scores in psychological distress (Alang et al., 2014).
- III. Current use of drugs and other psychotropic substances: *Hypothesis*: Students who use drugs and other psychotropic substances will achieve fewer scores in quality of life than those who are not using any drugs (Vederhus, et al., 2016).

### Research Instruments

The data collection instruments for the study were comprised of three surveys and a demographic sheet. The following research instruments were used:

1. **Kessler Psychological Distress Scale (K10, Kessler, et al., 2003)**: This is a simple measure of psychological distress measuring anxiety level and depressive symptoms. The scales consist of ten questions about emotional states each with a five-level response scale. The scale was originally designed to be sensitive around the threshold for clinically discriminating cases of serious mental illness. The Kessler Psychological Distress Scale has been widely used in assessing psychological distress among general and clinical populations. Alpha reliability coefficients for the two stress coping strategy subscales were between .80 and .84. These subscales covered the aspects of constructive strategy (11 items) and destructive strategy (14 items). This is a Likert-type scale with scores ranging from 1 to 5, and scores are summed to provide a total (K10) score. The lowest possible total score is ten and the total highest possible score is 50. The scores are categorized as follows: 20 to 24 as mild stress, scores of 25 to 29 as moderate stress, and scores of 30 to 50 as severe stress. Examples of items include in the past four weeks, for instance, “About how often did you feel tired out for no good reason” or “In the past 4 weeks, about how often did you feel nervous”. The two main subscales can also be presented including Depression (items measure fatigue and negative affect; 1,4,7,8,9,10) and Anxiety presenting the level of nervousness and agitation (items 2,3,5,6).

2. **Resilience Scale (RS-14, Wagnild, 2009):** This scale has been used to measure resilience in a variety of groups, including college students. It has fourteen items and employs a 7-point Likert scale, ranging from Strongly Agree to Strongly Disagree. Published Cronbach alphas for this scale have been reported as 0.93 in a clinical sample and 0.96 in a college student sample (Abram, 2021; Aiena et al., 2015). Scores are calculated by a summation of response values for each item, thus enabling total scores to range from 14 to 98. Scores below 65 indicate low resilience; between 65 and 81 show moderate resilience and scores above 81 will be interpreted as elevated levels of resilience. Examples of items include “I have self-discipline,” “I can usually find something to laugh about”, “My life has a meaning” (Wagnild, 2014; Surzykiewicz et al., 2019).
3. **The Quality-of-Life Enjoyment and Satisfaction Questionnaire - Short Form (Q-LES-Q-SF; Endicott et al,1993).** This scale evaluates general activities that are assessed in the longer version of Q-LES-Q. The scale consists of fourteen items plus two questions about medication and overall life satisfaction. Each item uses a 5-point scale ranging from 1 (very poor) to 5 (very good). A total score is derived from fourteen items with a maximum score of 70 and with higher scores indicating greater life satisfaction and enjoyment. Test-retest reliability for this scale has been shown to be .86 with a Cronbach’s alpha level ranging from .86 to .90 (Rapaport et al, 2005; Wyrwich et al, 2009).
4. **Demographic questionnaire.** A demographic questionnaire was used to gather information about students' sex, age, any formal diagnosis of mental and physical disabilities, and the current use of any drugs or psychoactive substances.

### **Data Collection Procedures**

#### **Data Analysis**

Descriptive statistics (simple percentages, means, and standard deviation) were calculated. Correlation analysis was completed to assess the relationship between psychological resilience and the quality of life among undergraduate students.

#### **Results**

In terms of the first research hypothesis related to gender and its relationship with psychological distress and resilience, the findings of the study showed that male college students experienced more severe psychological distress (83.3%) compared to females (74.0%) and the non-binary groups (14.3%). This finding is not consistent with the study conducted by Brougham et al. (2009), which reported that female college students experienced higher psychological distress than males. Inversely, our findings also showed that females students had a higher level of resilience (43.3%) compared to male students (10.57%) and the non-binary population (0.0%). This is consistent with the findings of Wu et al., (2020).

To answer the second hypothesis, we tested the relationship between having a formal diagnosis of a physical or mental disability and psychological distress. Results indicated that overall those with either type of disability experienced less psychological distress ( $M= 43.21$ ,  $SD=28.56$  for physical disabilities and  $M= 43.75$ ,  $SD=22.46$  for mental illness) than those without ( $M= 63.39$ ,  $SD=22.61$  for physical disabilities and  $M= 67.19$ ,  $SD= 21.38$  for mental illness). This was not consistent with the findings of Alang et al., 2014.

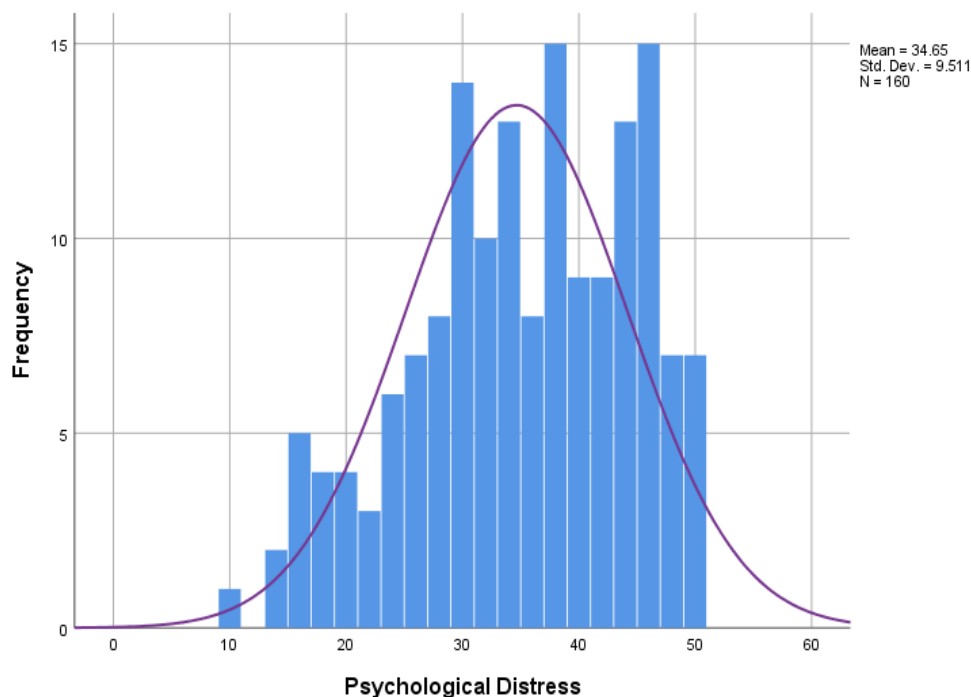
With respect to the current use of the drugs (or psychotropic substances, and the relationship with the overall level of quality of life, our findings show that those who reported as not using any substances ( $M=65.08$ ,  $SD= 16.8$ ) had a better quality of life than those who indicated using drugs or psychotropic substances ( $M = 52.93$ ,  $SD = 21.73$ ). This was consistent with the findings of Vederhus et al. (2016).

### **RQ 1. What is the prevalence of psychological distress among undergraduate students two years after the COVID-19 pandemic?**

Examining the results of the two main subscale scores of psychological distresses including depression symptoms (Nervous and Agitated) and Anxiety (Fatigue and Negative Affect) indicated that the overall prevalence of depression was slightly higher ( $M=62$ ,  $SD=24$ ) than anxiety ( $M=61$ ,  $SD=26$ ). The result of the data analysis relative to RQ 1 is shown in Fig 1. Specifically, the results show that the average psychological distress score was 34.65 ( $SD=9.511$ ), with a range from 10 to 50 (Fig.1). A total of 13 students (8.1%) reported not experiencing distress, 12 students (7.5%) experienced mild distress, 18 (11.3%) reported moderate stress, and 117 (71.1%) experienced severe distress.

**Figure 1**

*Prevalence of Psychological Distress Undergraduate Students during COVID-19 Pandemic*



## RQ 2. What are the determinants of quality of life for undergraduate students the two years after the COVID-19 pandemic?

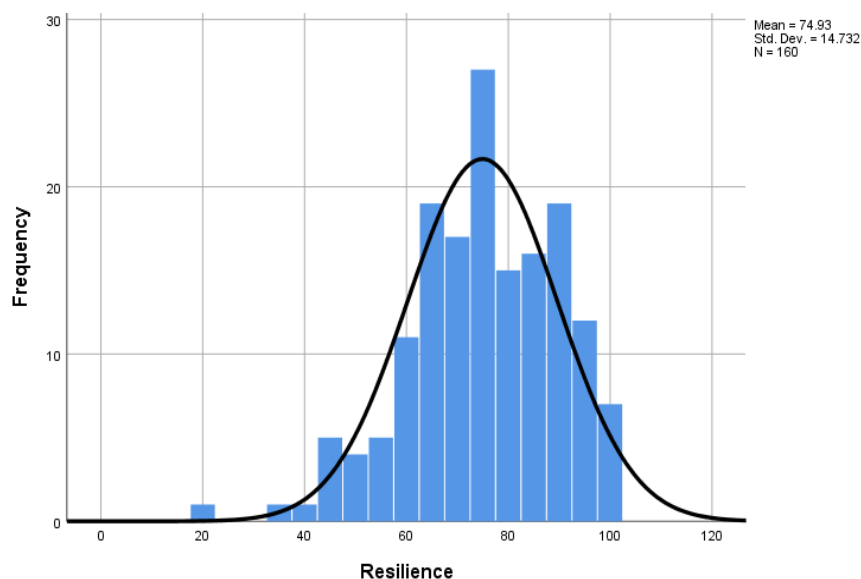
Relative to QOL during the COVID-19 pandemic, whereas, some domains were high, others were low. The highest determinants of QOL during the COVID-19 pandemic were the ability to get around physically without feeling dizzy or unsteady or falling (70, 43.8%), living/housing situation (45, 28.1%) satisfaction with medication (45, 28.1%), family relationships (15, 25.4%); vision in terms of ability to do work or hobbies (39, 24.4%), sexual drive, interest and/or performance (36, 22.5%), ability to function daily (33, 20.6%) and leisure(31, 19.4%). These were followed by an overall sense of well-being (28, 17.5%), Social relationships (25, 15.6%), and physical health (24, 15.0%). Per the responses, the lowest determinants of QOL were economic status (13, 8.1%); household activities (18, 11.3%), medication (15, 9.4%), and economic status, 13(8.1%), mood (14, 8.8%), household activities (18, 11.3%), overall life satisfaction and contentment (23, 14.4%). In terms of gender differences, findings show that male students had an overall higher quality of life ( $M=71.25$ ,  $SD=16.32$ ) than female students ( $M=63.22$ ,  $SD=16.71$ ) and nob-binary groups ( $M=38.42$ ,  $SD=20.42$ ).

## RQ 3. What is the level of resilience among undergraduate students two years after COVID-19 pandemic?

Relative to the level of psychological resilience among undergraduate students during COVID-19, the total scores on the RS-14 scale showed a mean of 74.93( $SD=14.73$ ). Scores below 65 are seen as indicating low resilience; a total number of 31 students (19.4%) fell into this group. Scores between 65 and 81 indicate moderate resilience, exhibited by 71 participants (44.4%) of the sample. And scores above 81, achieved by 58 participants (36.3%) of this sample, suggest high levels of resilience. In terms of gender difference relative to resilience, our findings indicate that females' students had a higher level of resilience (43.3%) compared to male students (10.57%) and the non-binary population (0.0%).

**Figure 2**

*Level of the Resilience of Undergraduate Students During COVID-19 Pandemic*





#### **RQ. 4 Is there a relationship between psychological resilience and the quality of life of undergraduate students?**

The literature shows that resilience could be helpful for understanding QoL, and previous studies have found that resilience positively impacts aspects of QoL (Ring et al., 2016; Maheri et al., 2019). Specifically, previous findings indicate that resilience can be a significant predictor of QoL in high school students (Maheri et al., 2019). Findings also showed that individuals who reported a high resilience score had a better mental QoL (Erim et al., 2015) as well as better QoL scores in general (Tempski et al., 2015). As shown in table 1. The results of the correlation between the psychological resilience and the quality of life of undergraduate students showed that there was a moderate to strong correlation between psychological resilience and quality of life (.75). Meaning those participants who reported a higher level of psychological resilience, are having a better quality of life.

**Table 1**

*Descriptive Statistics and Correlations for Study Variables*

Variable	M	SD	1	2
1. QOL	63.6406	17.81889	-	
2. Resilience	72.5298	17.53836	.753**	1

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### **Discussion**

The purpose of this descriptive cross-sectional study was to investigate psychological distress, quality of life, and resilience among undergraduate students two years after the COVID-19 pandemic at a large university in a Midwestern State of the United States in fall 2021. First, the results showed that psychological distress was prevalent among undergraduate students two years after the COVID-19 pandemic. This is consistent with the findings of previous studies (Al-Dwaikat et al., 2020; Al-Tammemi et al.2020; Glowacz & Schmits, 2020) that students in higher education, especially undergraduate students, are experiencing higher rates of psychological distress. Students may be prone to psychological distress because students are living in increasingly uncertain and stressful times, in addition to the challenges that are consistent with attending college. The results are also interesting in the sense that many individuals as well as institutions including higher education institutions may be thinking that we are “out of the woods” in terms of the impacts of COVID-19. However, the results clearly showed that the effects of COVID-19 on individuals' overall mental health functioning may be long-lasting.

Secondly, the results of the study also showed that the most significant determinants of quality of life for the participants in the study were the ability to get around physically without feeling dizzy or unsteady or falling, living situation, satisfaction with medication, family relationships, vision in terms of ability to do work or hobbies, sexual drive, interest and/or performance, and ability to do function daily. The least significant determinants of QOL were economic status, household activities, economic status, mood, household activities, and overall life satisfaction and contentment. This is consistent with the findings of previous studies (Abdullah et al., 2021; King et al., 2020) that the highest QOL was in social relationships, which indicates the value of interpersonal relationships and social support. Specifically, students value social interactions and support from family and friends and are more likely to consider or report these as greater satisfaction or overall QOL (King et al., 2020).

Thirdly, we found that in general there is moderate resilience among undergraduate students during the COVID-19 pandemic. This finding is consistent with the results of previous studies (Alyoubi et al., 2021; Urban et al., 2021). However, other studies (Chen & Lucock, 2021; Mai et al., 2021) found that undergraduate students had a lower level of psychological resilience. In the previous studies where moderate resilience was found, it was also reported that students perceived a moderate to a high level of social and emotional support. Thus, the results may be a reflection of the participant or contextual characteristics. Additionally, given that the prevalence and intensity of COVID-19 were not consistent across contexts and time periods, it is likely that a different finding [weaker or stronger association between the study variables] is possible or likely to emerge than that of the present study.

We also found that psychological resilience significantly correlated with the quality of life of participants. This is consistent with the findings of the study conducted by Nieuwoudt (2021) that high psychological distress leads to a lower quality of life for college students, especially undergraduate students. Specifically, students who experience stress, anxiety, and depression in addition to dealing with other demands including schooling are likely to have poorer physical and emotional functioning.

Our results also indicated that overall, participants with either physical or mental disabilities experienced less psychological distress than those without any type of disability. This was not consistent with the findings of Alang et al., 2014, that individuals with a physical or mental disability were likely to experience more psychological distress. The results of the present could indicate that the presence of a physical or mental disability may not necessarily impact an individual's response to stressors. However, our results indicate that with use, with respect to the current use of the drugs (or psychotropic substances, and the relationship with the overall level of quality of life, individuals who reported not using any drugs or substances had a better quality of life than those who indicated using drugs or psychotropic substances. This was consistent with the findings of Vederhus et al. (2016). This finding is self-evident given that drug use is likely to impact an individual's overall functioning and quality of life.

## **Implications for Mental Health Professionals, University Faculty, and Administrators**

The findings of the current study have several implications for university administrators, faculty, mental health professionals, and other stakeholders concerned about mental issues. On a global level, the findings on the prevalence of psychological distress among undergraduate students confirm the need for administrators to develop interventions and programs that improve college students' overall mental health in the present and the future. The results also suggest that it is important to conduct this study across multiple environments to determine whether there could be similarities or differences in the outcomes. Moreover, college and university administrators should be prepared to utilize multiple evaluative approaches to identify the patterns of associations between the specific factors that contribute to psychological distress in the current dispensation as we see the end of the COVID-19 pandemic. This could help in the development of specific programs and supports that promote mental health well-being and psychological thriving of college students.

Moreover, since faculty are in regular contact with students, it is important for them to exercise vigilance and direct students who demonstrate the traits of psychological distress to access appropriate resources and seek mental health services within the campus and in the community. Salimi et al. (2022) suggested that “university faculty and administrators need to cultivate a learning environment that supports students' well-being” (p.45). Such an environment is also able to create and sustain the necessary social support that will alleviate the effects of psychological distress.

The findings of the study regarding current drug use and quality of life have implications for intervention programs for students. Given that students may be reluctant to seek help due to legal implications, it may be necessary for mental health professionals working in universities to design harm reduction programs that provide a safe transition for students with active substance use (Gere & Blessing, 2017). In addition, the findings of this study regarding the quality of life and resilience also have implications for how university administrators and mental health professionals develop interventions for undergraduate college students in the current times and the future. Far too many college students struggle with undiagnosed mental health issues and are often unable to promptly access services. It is therefore important that administrators collaborate with all other stakeholders to establish a framework for students with disabilities. In addition, mental health professionals should focus on ways that increase college students' desire and ability to voluntarily seek mental health services. Salimi et al. (2021) note that an “important strategy for reducing such reluctance might involve increasing student help-seeking behavior. To that end, it will be expedient for counseling centers, their staff, and university administrators to provide self-help tools and support options that students can access on their own and use” (p.9).

Additionally, there is a need to ease restrictions on social activities that promote student social connectedness and lived experiences. Scholars (Gere et al., 2020; Mai et al., 2021; Salimi et al., 2021) suggest that increasing social support and social connectedness may be useful strategies for addressing students' challenges of social isolation and stress.

### **Limitations and Future Recommendations**

Like most other studies, this research also has its own limitations. That may have influenced the results. The first limitation was the sample size. Given the medium effect size and an alpha level of 0.05, we were not able to fully study the complex interactions. That might be due to the nature of the sample. For instance, our sample was not balanced in terms of age. The breakdown showed that most of the participants were aged 18-28 years, and only 1 participant was between the ages of 40- 50 years. Similarly, most of the participants were female students. Lastly, more cross-cultural studies are recommended to investigate the student's psychological distress, level of resilience, and quality of life as in this research we only targeted a particular group of students during a specific timeframe.

### **Conclusion**

In summary, this paper explores the relationships between psychological distress, resilience, and quality of life in undergraduate students following the COVID-19 pandemic. The literature shows that the presence of mental health disorders can have a significant impact on the experiences and overall functioning of college students (Chen & Lucock, 2022; Mai, 2021; Salimi et al., 2021; Urban et al., 2021). Specifically, mental health problems negatively affect the students' general academic performance, retention, and graduation rates (Bas, 2021; Watt, 2017). Research also showed that those students who reported a higher level of psychological distress are likely to experience a higher level of test anxiety, lower academic self-efficacy, and poor time management and use of study resources (Kitzrow, 2003). Creating an awareness of the mental health challenges of college students following the COVID-19 pandemic is an initial step in creating healthy campus environments and supporting the provision of safe mental health services to college students.

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**Public Attitudes Towards Non-Criminal Preventive Detention as a  
Function of the COVID-19 Pandemic**

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### Abstract

Non-criminal preventive detention is justified by both the state's *parens patriae* and *police power* roles. Individuals with mental illness and individuals with a highly communicable, potentially lethal disease can be involuntarily detained. Modern applications of quarantine have led to higher court decisions that address the balance between liberty and public health and safety. The inherent tensions that underlie quarantine law – individual liberty versus public safety – are apparent in our contemporary, COVID-19 America. Consequently, much of the current discussion appears to have political overtones. In order to empirically address this issue, in the current study we examine attitudes towards preventive detention within the context of resisting quarantine due to the COVID-19 pandemic. In addition, we investigate whether participants report pre- and post-COVID differences in their tolerance for ambiguity, perceived vulnerability to disease and endorsement of procedural justice. Finally, to test the presence of *political overtones*, we examine the predictive ability of political ideology on participants' endorsement of preventive detention. We observed a significant association between participants identified as *Right Wing* and support for non-criminal preventive detention. Our findings add to evidence that assessment of and response to the COVID-19 pandemic is sharply divided along political ideologies.

*Keywords:* COVID-19 and political ideology, detention, non-criminal preventive quarantine

Although the American justice system is primarily based on the notion that citizens can only be detained or incarcerated as a result of criminal prosecution, there are some important exceptions. Individuals who suffer from mental illness and who pose a significant risk to themselves or others can be involuntarily detained and be subject to involuntary treatment (*O'Connor v. Donaldson*, 1975). Similarly, individuals with a highly communicable, potentially lethal disease can be involuntarily detained (i.e., quarantined) and treated if they pose a risk to public safety (The Public Health Service Act, 1944). The legal justification for such non-criminal, preventive detention lies with the state's *parens patriae* and *police power* roles. The *parens patriae* justification refers to the state's obligation to protect and treat individuals who have become a danger to themselves, thus involuntary detention is allowed under the State's paternalistic power as "guardian of its citizens" (Appelbaum, 1990; Lehman & Phelps, 2004; Monahan & Shah, 1989). The state's *police power* refers to the obligation to protect citizens from what are deemed to be "dangerous people" (Appelbaum, 1990; Testa & West, 2010). Brakel and colleagues (1985) noted that involuntary commitment of individuals with mental illness creates a conflict "between the interest of the state in institutionalizing an individual who is seen to require it and the individual who does not recognize this need" (p. 21). The same conflict applies to the involuntary quarantine of individuals with infectious disease.

### **Civil Commitment of Individuals with Mental Illness**

Civil commitment refers to the involuntary hospitalization of individuals with mental illness who are deemed to need treatment, care, or incapacitation because of potential harm to self or others (Appelbaum, 1990; *O'Connor v. Donaldson*, 1975; Zaitchik & Appelbaum, 1996). This form of non-criminal preventive detention dates back at least as far as English common law, where English monarchs could appoint a guardian to manage the estate of "idiots" and "lunatics" who were thought to be incapable of protecting themselves (Appelbaum, 1990; Brakel et al., 1985). This tradition was continued in colonial America, and in 1676 Massachusetts passed the first statute giving the state the authority to detain individuals with mental disorders who had not committed a crime (Weiner & Wettstein, 1993; Zaitchik & Appelbaum, 1996). The relative importance of *parens patriae* versus *police power* justifications for civil commitment varied over time until the civil commitment law was codified in *O'Connor v. Donaldson* (1975). The guidelines for substantive and procedural due process for civil commitments were determined in this and other related case law (*Addington v. Texas*, 1979; *Lessard v. Schmidt*, 1972).

The preventive detention of individuals with severe mental illness, although controversial (see Testa & West, 2010; Wynn, 2006), has been accepted by the general population; at least in part due to the widely-shared belief that individuals with mental illness are more dangerous to society than other citizens (Phelan & Link, 1998). In a recent study, Gamache and colleagues (2019) found that public opinion on appropriateness of the use of preventive detention varied by type of crime. This study utilized scenarios which described criminal behaviors and, therefore, did not investigate public perceptions of *non-criminal* preventive detention. With

this in mind, in the current study we examine participants' perceptions of non-criminal preventive detention of individuals with severe mental illness.

### **The History of Quarantine in the United States**

Recent applications of quarantine (e.g., tuberculosis, AIDS, H1N1) have led to Court decisions that addressed the balance of liberty issues versus public health and safety (Lacey, 2003). Confusion as well as challenges to quarantine laws were seen during the 2014 Ebola outbreak when nurse Kaci Hickox was forcibly quarantined without displaying symptoms of the Ebola virus (Gatter, 2016) The inherent tensions that underlie quarantine law – individual liberty versus public safety – are clearly apparent in our contemporary, COVID-19 America, and much of this tension appears to have political overtones. In order to empirically address this issue, in the current study we examine attitudes towards preventive detention within the context of resisting quarantine due to the COVID-19 pandemic. Although public health scholars form a distinction between the terms “isolation” (when individuals are segregated from society after contracting a contagious disease) and “quarantine” (when individuals are segregated because they have been exposed to a contagious disease but are not yet ill), for the purposes of this study we will use the generic term, “quarantine” (Parmet, 2008).

### **Political Ideology**

Tomkins (1963) viewed left- and right-wing ideologies as reflective of a basic dimension of personality. The Tomkins Polarity Scale (Tomkins, 1964) was developed to operationalize this aspect of individual differences. Tomkins referred to these attitudinal differences as *humanistic* (left-wing) and *normativistic* (right-wing). Gamache and colleagues (2019) highlighted these differences as perceptions of humanity's nature: humanistic-oriented individuals hold a positive worldview and generally believing that humans are inherently good. Normativistic-oriented individuals, on the other hand, hold a negative worldview and believing that humans are inherently evil. Importantly, these views influence individuals' political, moral, and ethical outlooks. Individuals scoring high on the humanistic scale tend to be more open and expressive and those who score higher on normativism hold more conventional ideas (Stone, 1986). Nilsson and Jost (2020) noted that, in four recent studies, normativism was “robustly associated with rightist (or conservative) self-placement” (p. 1). Additionally, in one of these studies, humanism was strongly correlated with issues that “were most aligned with a liberal worldview” (p. 9).

In the context of criminal detention and punishment, prior research has shown that individuals with conservative views are significantly more likely to favor the death penalty, endorse longer criminal sentences, and believe in retributive justice more than their liberal counterparts (Carroll et. al., 1987; Gamache et al., 2019; Unnever & Cullen, 2009). There are little data regarding the effects of personal ideology on perceptions of preventive detention, either in criminal or non-criminal contexts. In a recent study utilizing the Tomkins Polarity Scale, Gamache and colleagues (2019) found that participants perceived lengthy preventive detention as appropriate for criminals who were judged to be particularly dangerous (terrorists and sex

offenders), regardless of their political ideology. Interestingly, participants who scored higher on left-wing, humanist attitudes, were more likely to endorse lengthy preventive detention of a criminal suspect with mental illness. In the current study, we examine the relation between political ideology and attitudes toward non-criminal preventive detention. Additionally, we investigate the relation between political ideology and endorsement of procedural justice, tolerance for ambiguity, and perceived vulnerability to disease.

## **Individual Difference Measures**

### **Procedural Justice**

Social psychologists have long investigated social compliance and individual cooperation within society. A major influence on individual rule-following is the construct of *procedural justice*, the belief in the validity of procedures of the legal system and the related belief in the legitimacy of government (Tyler, 2009). The belief in procedural justice has a significant influence on individual behavior (Tyler & Blader, 2000). Tyler (2009) investigated the connection between procedural justice and deference to rules, noting that procedural justice is related to individuals' judgments of governmental legitimacy as well as deference to rules. In a study utilizing a sample of South African participants, Tyler (2009) found that "respondents who viewed the government as acting through fair procedures were more deferential to social rules" (p. 35-36). The author delineated several beliefs that were antecedents to support of procedural justice. The factors that were most highly correlated to procedural justice included: viewing the authorities as trustworthy and fighting corruption, believing that the government provided basic resources, and believing that the government could effectively manage problems. In general, Tyler's (2009) findings indicate that when individuals perceive that the government is fair and trustworthy, they are more likely to accept policies enacted by these authorities. This construct of procedural justice is particularly important in the midst of a global health emergency; beliefs in procedural justice and governmental legitimacy may influence an individual's compliance with health mandates and policies.

### **Perceptions of Disease Vulnerability**

Infectious diseases have had a profound impact on human civilization, and fear of disease has shaped human behavior. Research in evolutionary and social psychology has shown that the perceived threat of infectious diseases can have a powerful influence on human behavior and social cognition. In addition, a number of individual differences (such as gender, ethnicity, and personality characteristics including Social Dominance Orientation) mediate this effect (Schaller & Duncan, 2007; Schaller & Murray, 2008). Therefore, this construct impacts the current study because perceptions of disease vulnerability have been shown to influence individual decision-making (Duncan et al., 2009), and the perception of vulnerability may be increased due to the ongoing global pandemic.

## Tolerance for Ambiguity

Large scale health emergencies such as the COVID-19 pandemic often produce conflicting information due to the scope of such events. As a result this creates a confusing and ambiguous situation for the public (Rosenberg et al., 2020). According to Budner (1962), tolerance for ambiguity (TA) is perceived as individuals' preference for or comfort with ambiguous situations. McLain (1993) refined the definition as a range of reactions to unfamiliar and uncertain stimuli. Research has indicated that individuals who are high in TA may use more problem-focused coping strategies, and those low in TA may use more emotion-focused strategies (Herman et al., 2010). Additionally, intolerance of ambiguity and cognitive rigidity are theorized to be “unifying aspects of authoritarianism” (Duncan & Peterson, 2014). The construct, therefore, has implications for individual differences in levels of adjustment in the face of novel and ambiguous events and is likely related to individual differences in political ideology.

### The Current Study

The purpose of this study is to explore participants' endorsement of non-criminal preventive detention with respect to quarantine or mental illness as modified by political ideology, and their perspectives on procedural justice, tolerance for ambiguity, and perceived vulnerability to disease. We expect that the recent global pandemic will affect participants' attitudes related to quarantine detention, and we believe that individual differences in political ideology will impact participants' perceptions as well. In our exploration of this research question, we propose the following hypotheses:

**H<sub>1</sub>:** Participants exposed to a scenario in which prevention detention is employed within the context of resisting quarantine due to the pandemic will be significantly more likely to endorse preventive detention compared to a scenario in which preventive detention is employed due to mental illness.

**H<sub>2</sub>:** As a result of the literature on our individual difference measures, we predict there will be a significant difference in pre- and post-COVID attitudes on our measures of tolerance for ambiguity, procedural justice, and perceived vulnerability to disease.

**H<sub>3</sub>:** The third hypothesis concerns participants' worldview and perspectives. We hypothesize that participants' scores on the Polarity Scale will predict participant endorsement of preventive detention.

### Method

#### Participants

A total of 242 participants (161 male and 81 female) were recruited through Amazon *Mechanical Turk* to participate in this study. All participants were screened for inclusion, and



only participants that were United States citizens over age 18 were included in this study. The average age of our participants was 34. Our ethnic breakdown included 65% White, 10% Black, 17% Asian, 7% Hispanic or Spanish origin, and 1% other. Over three-fourths (86%) of our participants reported completing an undergraduate or graduate degree. Participants were paid fifty cents for their participation.

## **Measures**

Several measures were utilized to assess political ideology and perspectives on health and justice.

### ***Procedural Justice Scales***

In order to assess participants' endorsement of procedural justice, Tyler's (2009) six-item Procedural Justice Scale (PJS) was utilized. On the PJS, participants rate their agreement with statements related to justice philosophy on a 7-point Likert Scale (e.g.: "*Each person can freely choose to vote without feeling forced by others*"). Tyler (2009) reported reliability of .85. In this study, the final item on this scale was changed to reflect an American perspective: "*All Americans are equal to each other*" (emphasis added). In this study, Cronbach alpha=0.81 (Pre-Pandemic) and 0.84 (Post-Pandemic) were observed.

Additionally, Tyler (2009) explored several variables that were associated with stronger justice philosophy and trust of the government through a 24-item survey, showing a relationship between six antecedent beliefs about the government's effectiveness and ratings of procedural justice. Based on these results, we created a six item Procedural Justice Antecedent Scale (PJAS) to assess each of these antecedent beliefs (e.g.: "*I believe the government will provide an adequate standard of living*") on a 7-point Likert scale. Our items displayed reliability ratings of 0.90 and 0.95 for the pre and post COVID reflections respectively. See Appendix for the complete scale.

### ***Tolerance of Ambiguity Scale***

Herman and colleagues (2010) improved on earlier attempts to operationalize tolerance for ambiguity and developed The Tolerance for Ambiguity Scale, a 12-item measure of individual tolerance for ambiguity. They identify four dimensions of TA: (1) Valuing Diverse Others, (2) Change, (3) Challenging Perspectives, and (4) Unfamiliarity. Participants rate their agreement with items (e.g.: "*I like to surround myself with things that are familiar to me*") on a 7-point Likert scale. In terms of test-retest reliability, TAS has been found to be acceptable (0.85) (Bors et al., 2010). In our study, reliability ratings of .83 were observed in both sets of responses.

### ***Perceived Vulnerability to Disease Scale***

In order to assess fear of disease, the Perceived Vulnerability to Disease (PVD) (Duncan et al., 2009) scale was utilized. The PVD is a 15-item measurement that is used to measure the one's

belief that they are likely to contract illnesses (e.g.: “*I prefer to wash my hands pretty soon after shaking someone’s hand*”). The scale has been factor analyzed into two prominent subscales: Perceived Infectability and Germ Aversion. The 15-item scale has demonstrated adequate internal consistency (Cronbach’s  $\alpha=0.82$ ). The study conducted by Duncan and colleagues (2009) demonstrated that higher scores on the PVD scale were indicative of higher perceived vulnerability to disease. The perceived infectability factor also demonstrated significant concurrent validity with a number of other scales and similar constructs (Duncan et al., 2009). As a result, this measure is an adequate tool to measure one’s belief that they are susceptible to a communicable disease. In this study, Cronbach alpha reliability for this scale was acceptable for both pre and post COVID responses, 0.89 and 0.88 respectively.

### ***Polarity Scale***

Tomkins Polarity Scale (Tomkins, 1964) was utilized to assess political ideology. The 43-item scale asks participants to review a two statements per item, and state which statement they most agree with (e.g.: “parents should first of all be gentle with their children” or “parents should first of all be firm with their children”). Depending on which statement the participants agree with, each item selection scores the participant on a humanistic subscale or a normativistic subscale creating a total humanistic “left-wing” and total normativistic “right-wing” score.

### **Procedure**

Following IRB approval (Roger Williams University Human Subjects Review Board, Protocol #20200516), participants were recruited through *mTurk*. Data collection occurred during the late Spring of 2020, shortly after the onset of the COVID-19 global pandemic. Once properly screened, participants completed informed consent forms and were then given one of two scenarios to read. Both conditions involved a 150-word vignette about an individual who had been subjected to non-criminal preventive detention. In the Mental Health Scenario an individual was detained after behaving in a bizarre manner towards a police officer. In the Quarantine Scenario an individual was detained due to refusing to submit to treatment after being diagnosed with a highly contagious disease.

After reading one of these scenarios, participants were asked to respond to the dependent measures on a 7-point Likert scale: *How fair is it that this individual was forced into isolation in a medical facility? How likely is it that this individual will be a threat to others without this isolation?, How confident are you in your belief that the individual will cause future harm?* The participants were then asked to complete the Polarity Scale. Following this, participants were presented with the remainder of the self-report measures. For these three remaining scales, participants were asked to reflect on their attitudes prior to the current COVID-19 pandemic and rate how they would have answered prior to January 2020. They were then asked to rate their current attitudes on the same questions. The purpose of this was to have the participants self-report any preceived change in their attitudes since the onset of the COVID-19 pandemic. After these scales, participants were then asked basic demographic questions, thanked, and debriefed.

## Results

To test our first hypothesis, an independent samples *t*-test was conducted on our dependent measures assessing preventive detention in the context of fairness, perceived sentence, future harm, and confidence in future harm. No significant differences were found on our measures as a function of exposure to experimental condition. Participants exposed to the quarantine condition did not differ in their responses to items assessing preventive detention compared to those participants exposed to the mental illness condition: *p* values ranged from 0.175 to 0.805.

To test our second hypothesis of pre- and post-COVID attitude differences on our measures of tolerance for ambiguity, procedural justice perceived vulnerability and our Procedural Justice Antecedents Scale, we performed a paired-samples *t*-test. Our results indicated pre- and post-COVID differences existed solely on the Procedural Justice Antecedents (PJA) Scale: Pre-COVID ( $M=29.85$ ,  $SD=6.88$ ) and post-COVID ( $M=25.67$ ,  $SD=10.04$ );  $t(220)=6.69$ ,  $p<0.001$ . To further explore this overall difference, we examined within-group differences on each of the five items on the PJA. Results indicated pre- and post-COVID differences on each of the six items in the PJA scale. See Table 1 for depiction of these differences.

**Table 1**

*Paired-Samples t-Test Differences on Procedural Justice Antecedent Scale*

Item	pre-COVID		post-COVID	
	<i>M</i>	( <i>SD</i> )	<i>M</i>	( <i>SD</i> )
I believe the government will...				
do the right thing.	4.97	(1.39)	4.21	(1.85)
fight corruption.	4.99	(1.31)	4.27	(1.81)
provide basic resources.	4.92	(1.42)	4.21	(1.82)
fairly enforce laws.	5.02	(1.41)	4.28	(1.86)
provide an adequate standard of living.	4.95	(1.39)	4.22	(1.83)
effectively manage problems.	4.97	(1.37)	4.30	(1.96)

*Note.* *p* value for each item  $<.001$ .

To test the third hypothesis that participants' scores on the Polarity Scale would predict participant endorsement of preventive detention, we performed a linear regression analysis. The Model was significant:  $F(2, 239)=4.50$ ,  $p=0.012$ ,  $R^2=0.036$ . Participants with higher scores on the normativistic scale were more likely to support non-criminal preventive detention in both conditions: ( $\beta=0.164$ ,  $t=2.548$ ,  $p=.011$ ). No significant associations were observed for participants scoring on the humanistic scale. In addition, no significant associations were observed for left or right wing scores on the third dependent measure: *Do you believe that, without treatment, the individual in the scenario will be likely to harm others in the future?*

## Exploratory Analyses

### *Polarity as Predictor –Quarantine Scenario*

To further test whether scores on the Polarity Scale predicted our primary dependent measures, we examined its predictive ability as a function of exposure to our experimental conditions. For participants exposed to our quarantine scenario, higher left wing scores were associated with confirmation of the statement: *Do you believe it is fair that the individual in the scenario be forced into treatment in a locked facility?*  $F(2, 117)=3.42, p=0.036, R^2=0.055$ , explaining 4% of the Model's variability. Higher left-wing scores also were related to higher confidence that the individual would be likely to cause harm:  $F(2, 117)=3.57, p=0.031, R^2=0.058$ . Right-wing scores were not associated with any of our primary dependent measures for participants exposed to the quarantine condition.

### *Mental Health Scenario*

For participants exposed to the mental health scenario, higher right wing scores predicted the statement: *Do you believe it is fair that the individual in the scenario be forced into treatment in a locked facility?*  $F(2, 119)=3.99, p=0.021, R^2=0.063$ , explaining all of the Model's variability. This finding was also observed approaching significance on the statement: *Do you believe that without treatment, the individual in the scenario is likely to harm others in the future?*  $F(2, 118)=3.99, p=0.068, R^2=0.045$ . On the statement, *How confident are you that the individual in the scenario is likely to cause future harm*, both left and right wing scores predicted responses to this item. Specifically, higher left wing scores were associated with less confidence. Conversely, higher right wing scores were associated with greater confidence:  $F(2, 119)=4.31, p=0.016, R^2=0.068$ , explaining all of the Model's variability .

In order to test the predictive ability of our remaining scales on our dependent variables of interest, we performed a series of multiple regression analyses (MRA). The analyses were conducted on measures taken both pre- and post-COVID (including Ambiguity, Procedural Justice, Perceived Vulnerability, and Perceived Vulnerability Scale). Our first MRA revealed significant predictive ability of pre-COVID responses to both ambiguity and procedural justice measures on our primary dependent variable: *Do you believe it is fair that the individual in the scenario be forced into treatment in a locked facility?*  $F(4, 187)=18.24, p<0.001$ . Higher scores on both measures were related to endorsement of preventive detention: for Ambiguity: ( $\beta=0.278, t=2.594, p=0.01$ ); for Procedural Justice: ( $\beta=0.364, t=3.4, p=0.001$ ). No effects were found on this dependent measure for post-COVID attitudes.

On our second dependent measure: *Do you believe that, without treatment, the individual in the scenario will be likely to harm others in the future?* MRA revealed Ambiguity and Vulnerability were associated with pre-COVID endorsement of this belief: for Ambiguity: ( $\beta=0.339, t=2.905, p=0.004$ ); for Vulnerability: ( $\beta=-0.243, t=-2.142, p=0.034$ ). For Vulnerability this association was negative, meaning participants scoring low on this measure were likely to endorse this belief. The post-COVID MRA revealed only Procedural Justice

significantly was significantly related to endorsement of this item: ( $\beta=0.272$ ,  $t=2.221$ ,  $p=0.028$ ), explaining 3% of the Model's reported 9% variability.

Finally, we explored whether gender differences existed in individuals' left and right wing polarity scores. No differences were observed:  $p$  values ranged from 0.146 to 0.905.

### ***Polarity Scores – Change in Scale Scores Related to Pandemic***

To further explore the influence of scores on the Polarity Scale with participant scale scores, we examined their predictive ability as a function of the participant's assessment of change in scores due to the pandemic. We utilized regression analysis to examine Left and Right polarity influence on pre and post pandemic scale scores.

With the Perceptions of Vulnerability scale, we examined the influence of Left and Right polarity on pre-pandemic and post-pandemic scores. Significant models were found for both the Pre-Pandemic  $F(2, 221)=7.54$ ,  $p=0.001$ ,  $R^2=0.065$  and Post-Pandemic scores:  $F(2, 212)=4.05$ ,  $p=0.019$ ,  $R^2=0.037$ . For the Pre-Pandemic scores, both Left and Right polarity demonstrated an effect, with Left polarity being associated with less perceived vulnerability ( $\beta=-0.161$ ,  $t=-2.42$ ,  $p=0.016$ ), and Right polarity associated with higher perception of vulnerability ( $\beta=0.222$ ,  $t=3.35$ ,  $p=0.001$ ). For the Post-pandemic scores, a significant model was also observed:  $F(2, 212)=4.05$ ,  $p=0.019$ ,  $R^2=0.037$ , however only the Right polarity scores were significantly associated with scale scores, again with Right polarity participants endorsing greater perceptions of vulnerability ( $\beta=0.172$ ,  $t=2.49$ ,  $p=0.014$ ).

For the Tolerance of Ambiguity scale, we observed a significant model for Post-Pandemic scores:  $F(2, 216)=3.21$ ,  $p=0.042$ ,  $R^2=0.029$ . Right polarity was significantly correlated with increased tolerance for ambiguity post-pandemic ( $\beta=0.167$ ,  $t=2.42$ ,  $p=0.015$ ). No other significant results emerged with the Tolerance of Ambiguity scale.

Finally, we examined the influence of Left and Right polarity on the procedural justice scales. No significant model was observed for the Procedural Justice Scale, however significant models were observed for the Procedural Justice Antecedent Scale, with pre-pandemic reflections:  $F(2, 225)=3.11$ ,  $p=0.046$ ,  $R^2=0.027$ . With the Pre-Pandemic scores, Right polarity was associated higher agreement with the antecedent beliefs ( $\beta=-0.156$ ,  $t=-2.33$ ,  $p=0.021$ ). With the Post-Pandemic scores, no significant relationship was observed.

## **Discussion**

This study explored participant perceptions of risk of dangerousness and appropriateness for non-criminal preventive detention related to mental illness or quarantine. Possible influences of political ideation on participant assessments were also explored. Analysis of the data produced interesting results that may deepen understanding of how a major pandemic affects an individual's perceptions of justice and risk.

The first hypothesis of this study was that there would be significant difference between participants' support for non-criminal preventive detention and assessment of risk for individuals with mental illness and those infected by a contagious disease. We had hypothesized that, due to the onset of the COVID-19 global pandemic, participants would be more likely to endorse preventive detention to protect the public in the mock quarantine scenario, however this hypothesis was not supported. In general, there was no difference between participants' assessment of risk or support for preventive detention in any scenario. The reason for this is unknown. Emerging research suggests that the public's interpretation of the COVID-19 pandemic varies widely (Imhoff & Lamberty, 2020) and this variance may account for the lack of confirmation here.

Our second hypothesis addressed participants' assessment of how their personal views had changed as a result of the COVID-19 pandemic. We hypothesized that participants would believe that their views had changed since the onset of the recent pandemic, and this hypothesis was partially confirmed. With one exception, participants did not report any significant differences in their responses on measures, suggesting that participants' did not believe their views had changed. This was surprising but may also be indicative of the large percentage of the population that underestimated the scope of the COVID-19 pandemic (Imhoff & Lamberty, 2020), at the time of data collection, or that our participants' personal views were not impacted. However, there were significant differences reported on the Procedural Justice Antecedents Scale (PJAS) created for this study. Specifically, scores on the post-pandemic PJAS were lower than the pre-pandemic PJAS. Considering the items on the PJAS, this result suggests that the participants' faith in the government had significantly diminished following the onset of the COVID-19 pandemic.

With our third hypothesis, we suggested that political polarity would have an influence on attitudes concerning preventive detention. This hypothesis was partially confirmed as well: participants who endorsed normative, right-wing perspectives reported greater support for preventive detention than participants endorsing humanistic, left-wing perspectives. Thus, participants with a normative worldview were comfortable with preventive detention for non-criminal behavior. No significant difference or interaction was observed between polarity scores and participant ratings of risk of future harm, suggesting that worldview did not impact risk assessment in this study.

To better understand these results, exploratory analysis was conducted to investigate additional effects of polarity. First, we investigated if differences in worldview resulted in different ratings of support for preventive detention and assessment of risk in the mental illness and quarantine scenarios. Significant differences were observed. In the case of an individual with mental illness, right-wing normative polarity was associated with higher support of preventive detention, and higher confidence in participants' risk assessment. No effect was observed for left-wing humanistic polarity with support for preventive detention, but humanistic participants were significantly less confident in their assessment of risk of individuals experiencing mental illness. An interesting contrast was observed in the quarantine scenario, where almost the exact opposite result was observed. With an individual infected with a dangerous and contagious

disease, left-wing humanistic participants were more likely to endorse preventive detention and were more confident in their risk assessment. Right-wing, normativistic ideology was not associated with support for preventive detention for individuals infected with a dangerous disease.

Additional analyses were conducted to explore the influence of political polarity on participant's perceived change in perspectives due to COVID-19 pandemic. Significant relationships were observed for several of the scales. For perceptions of vulnerability before the COVID-19 pandemic, left-wing ideology was associated with lower ratings of perceived vulnerability and right-wing was associated with higher ratings. Right-leaning ideology remained significantly associated with perceptions of vulnerability post-pandemic as well. Left-wing ideology was not associated with lower ratings of vulnerability, suggesting that left-wing participants experienced an *increase* in perception of vulnerability due to the pandemic whereas right-wing attitudes remained relatively the same. This finding supports the research suggesting that right-wing ideology is associated with higher perception of personal threat (Jost et al., 2003; van Leeuwen & Park, 2009), and that the pandemic may have increased perceptions of vulnerability to disease for left-leaning participants.

With the participants' tolerance for ambiguity, there was no significant relationship between polarity and scores prior to the COVID-19 pandemic, however a significant relationship was observed post-pandemic. When reflecting on changes in attitude since the onset of the pandemic, right-wing ideology was related to higher acceptance for ambiguous situations. In essence, the right-wing participants believed that they became more tolerant of ambiguity following the pandemic. It is possible that our right-wing participants had greater exposure to conflicting information about the COVID-19 pandemic (i.e., "fake news") (Calvillo et al., 2020), developed a tolerance with uncertainty about the virus and that was reflected in their scores.

Similar to the findings with our second hypothesis, no significant relationships were observed with our participants' reflections on procedural justice, however a significant relationship was observed in ratings on the PJAS. When factoring in polarity, right-wing ideology was associated with higher ratings pre-pandemic, however there was no association post-pandemic. This suggests that our right-wing participants believed that they had more trust in the government *prior to the pandemic* and that trust diminished following the pandemic. No similar effect was found for left-wing polarity. This finding gives some nuance for our second hypothesis.

### **Limitations**

Several limitations exist with the results of this study. A significant limitation exists in our examination of pre-post pandemic attitudes. In order to assess change in attitudes, we asked participants to self-reflect and respond, exploring how participants' understanding of how their views changed. This method suffers from issues related to self-report and retroactive examination, and could be vulnerable to bias or influence. A true pretest-posttest, would have

been much stronger, but due to the sudden onset of the COVID-19 pandemic, this was obviously impossible. The sample size for this study was relatively low, and recruited through the Internet due to the onset of the pandemic. Possible sampling issues and generalizability of these findings cannot be ignored. Finally, though significant, and interesting results were found, our resulting effect sizes were small which effects the validity of these findings. Further research may be able to address some of these limitations.

### **Conclusion**

Our results support the notion that political ideology influences attitudes of the COVID-19 pandemic. If there is validity to the view that right-wing ideology is associated with minimization of the pandemic (Calvillo et al., 2020; Havey, 2020), as well as high value on individual freedom (Buckley, 1951; Levin, 2016), it would not be surprising that normativistic participants were less likely to view preventive detention as appropriate in the quarantine scenario, compared to left-wing humanistic participants. It is likely that the current political climate amplifies ideological differences in the United States. We believe that our results add to evidence that assessment of and response to the COVID-19 pandemic is sharply divided along political ideologies (Calvillo et al., 2020).



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## Appendix

### Procedural Justice Antecedents Scale

Please read the following statements and indicate your level of agreement on a scale of 1 – disagree strongly to 7 – agree strongly.

1. I believe the government will do the right thing.
2. I believe that the government will fight corruption.
3. I believe that the government will provide basic resources.
4. I believe that the government will fairly enforce our laws.
5. I believe that the government will provide an adequate standard of living.
6. I believe that the government will effectively manage problems.

**An Assessment of Resilience Amongst the Residents of Zimbabwe Between  
the Years 2005 to 2022**

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### **Abstract**

The main focus of this literature review is to highlight the essence of mental healthcare in Zimbabwe. Resilience is the ability to quickly recover from stressful hardships. This review seeks to critically evaluate the effects of economic and political crises in Zimbabwe resulting in Zimbabwe residents resorting to resilience for survival. The aims and objectives of the review are to increase mental healthcare, expand the number of trained psychologists, and opening of more rehabilitation and psychological centers. The correlation between resilience, suicide, substance use, anger management, crime rate, life expectancy, and migration is determined. Information was generated from research papers on google scholar and Near East University library (particularly from Zimbabwean academics). Results showed that mental health in Zimbabwe is at rock bottom and there is little to zero intervention to assist the situation. The prevalence of mental disorders is extremely high. More awareness can be done and normalize the use of psychological resources for mental well-being. The government needs to give special attention to the mental healthcare of the residents of Zimbabwe.

*Keywords:* chronic stress, resilience, economic factors, major depressive disorder, mental health, panic attacks, political factors, psychological intervention, PTSD, severe anxiety

Zimbabwe was the breadbasket of Africa (Nyakwawa, 2017). Not only from the natural resources such as minerals, and fertile soil but also favorable weather. The education was one to be proud of, the criminal rate low, higher life expectancy to mention but just a few made Zimbabwe one of the destination nations to reside in. Due to a lot of unforeseen and foreseen circumstances, the nation has gone down the drain together with the mental health of the people. Several notable factors have played part in the demise of the mental healthcare of Zimbabwean residents including economic factors and political factors.

According to Hopper (2020), Abraham Maslow believed that when needs are not met, the center of focus is shifted to them until they are met. In this study, these factors are physiological and safety needs. These needs include food, shelter, health, employment, freedom from fear, protection, stability, and security which are directly influenced by economic and political factors (Macleod, 2022). All the factors are interconnected as one is a result of the other. The needs should be met towards the enhancement and promotion of economic growth and development (Omodan & Abejide, 2022) and political enrichment.

Stressful life incidences, traumatic events, and chronic adversity have a significant influence on brain function and structure (Wu et al., 2013). The brain parts that are affected include the amygdala (conditioned fear), cerebral cortex (long-term storage of traumatic memories), hippocampus, and prefrontal cortex (Bremmer, 2006). Due to the stress caused by these factors, the effects may be as extreme as major depression leading to suicide, chronic stress leading to substance use, severe anxiety, reduction in life expectancy, increased crime rate, anger management, and Post Traumatic Stress Disorder (PTSD) and panic disorder which if not treated are dire. Therefore, to survive, the residents resorted to resilience.

Resilience is what gives people the psychological strength (positive adaptation) to cope with hardships and stress that come with it (Den Hartigh & Hill, 2022). It is an ongoing and always developing gathering of courage and skills necessary to pass through stressful situations (Herrman et al., 2011). This develops over time as the human being is interacting with the environment creating survival of the fittest mode. In the event of trying to keep up with the huddles, some individuals cannot sustain the hardships and they seek temporary even long-term solutions to survive.

The positive results of successful resilience include homeostasis, growth, happiness, and contentment. Some just decide to give up altogether. According to World Health Organization (2020), only 0.42% budget in Zimbabwe was allocated to mental health. Hence, we seek to assess and explain how these factors have for over a decade affected Zimbabwe and why the residents resorted to resilience, and why some cannot keep up with it is an ongoing situation. We also seek to understand the effects of these factors on the livelihood of residents of Zimbabwe, the positive results and the negative outcome, and the relationships between resilience, suicide, substance use, anger management, crime rate, major depression, life expectancy, and chronic diseases.

## Economic Factors

These are the initial factors that contributed to the demise of Zimbabwe resulting in what they call “hustles,” quick means to thrive. These include drought, hyperinflation, foreign direct investment, declining access to basic social needs, and high unemployment rate. According to Sachikonye (2002), Zimbabwe was amongst the top four most industrialized countries in Sub-Saharan Africa. Due to the shrinkage of the economy, the country has shifted from being the breadbasket of the region to being a basket case. In such a distressed economy that lacks defined and localized stress management guidelines, how are residents expected to cope effectively (Mubanga & Njerekai, 2020). However, Due to the Indigenous knowledge building which has facilitated the survival of the residents to the wholeness of nature and its elements, they are able to resist bowing down to hardships to a certain extent.

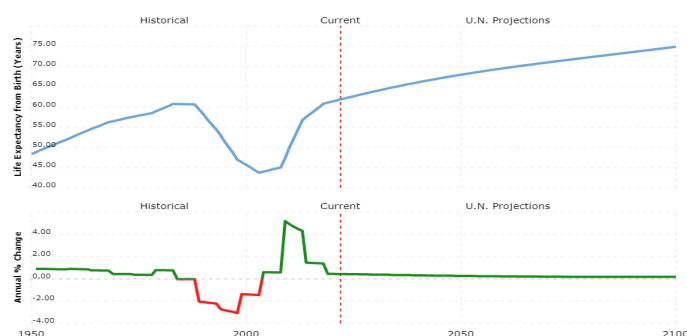
The changes in climate increase the prevalence of extreme weather such as floods and droughts (Taylor, 2020). Droughts have been experienced frequently with the latest one being between 2018-2019 (Frischen et al., 2020). They have been crippling the country resulting in low levels of life expectancy and a decline in agricultural production. The main staple crop of Zimbabwe, maize has been scarce making it difficult to feed the families and forcing the country to import (Myers, 2020).

According to Luong and colleagues (2021), droughts result in psychological distress and anxiety. Anxiety was evoked by the droughts because of uncontrollable worry of where the food will come from. Due to a lack of treatment and proper diagnosis, the conditions advanced to severe anxiety which increased the risks of heart conditions (Taylor, 2020). However, due to resilience, there have been positive changes.

With the ongoing hardships, citizens have also quickly found means to outcome their shortcomings. With micro-farming and irrigation introduced, people now farm crops even in the backyard of their houses (Jiri & Mafongoya, 2018). This allows them to feed their families. Small-scale farmers are also in business strengthening food security in Zimbabwe (Maganga & Conrad Suso, 2022). With this development, life expectancy has also increased in the past year (see figure 1).

**Figure 1**

*Life Expectancy in Zimbabwe*





The government should also consider investing in cloud seeding and food reserves for unpredictable epidemics or pandemics such as drought. Also, they should highly consider normalizing the encouragement of the use of therapists, helping those who have lost their loved ones to hunger. This will curve trauma to a certain extent.

Hyperinflation is defined as the monetary inflation rate that has increased exceeding 50% (Tamimi & Orban, 2020). It is proven by a rapid increase in the printing of paper money and affects the prices of goods and services. Inflation as of the study by Pinto (2022) was found to be at 172%. Hyperinflation is a result of droughts that took place when food shortages began and there is high demand for goods than the supply (Kenton, 2022). Also, according to Fielding (2022), hyperinflation increases the sense of instability and stress which developed into chronic stress over time.

Chronic stress leads to the decline of the prefrontal cortex and hippocampus. With lack of treatment, it may lead to cancer (Dai et al., 2020). Especially for breadwinners and caregivers, it is hard not to be stressed since you have to put everyone else's needs before yourself and constantly worry that you might lose your job because of the economic crisis. With little to no psychological intervention, some get only to the point of diagnosis but without treatment.

Then, the country quickly adopted other currencies such as the US dollar, South African Rand, and the Botswana Pula in order to surge the completely devalued local currency, the Zimbabwean dollar. It is argued that in absence of a budget, the mind is most likely to make more negative assumptions or unrealistic positive assumptions about where things are now. Therefore, the adoption of a budget clarifies that situation as well. The government must also initiate proper usage of legal, regulatory, and market based to nudge de-dollarization even though it may take a while (Imam, 2020).

According to Mutambara, Makanyanga, and Mudhovozi (2021), a large number of people remain unemployed for a while after graduating from University in Zimbabwe. Zimbabwe currently is one of the countries with the highest unemployment rate in the world. The most common reason for high unemployment is the shrinkage of the industrial sector (Mukoka, 2020). Therefore, this resulted in depression, especially among men. However major depression cases have been reported as there is an increase in suicidal rates due to low quality of life.

According to Amiri (2022), the prevalence of major depression symptoms is 16% and the prevalence after diagnosis is 1.5% (WHO, 2020). The increased uncertainty is associated with suicide mortality amongst the oldest and youngest population (Claveria, 2022). According to the WHO report in 2020, the prevalence of suicidal deaths in Zimbabwe is 1.8%. Also because of unemployment, people have engaged themselves in unhealthy behavior such as substance use (Amiri, 2022) and criminal activities such as theft. 1.3% are abusing alcohol with 0.7% recorded as abusing drugs (WHO, 2020).

Uncertainty comes after people must spend a lot of time employed without seeing the potential of being employed in the near future (Bonga, 2019). Substance use is marked by people trying to ease the mental burden of being unemployed (men may feel like failures which reduce their masculinity) (Nhapi, 2019). In women, it is not really shown how badly they are affected as some are taken care of by their husbands as the heads of the house.

In order to suppress this, the government led by the current president has produced job creation policies to mitigate unemployment (Dlamini & Schutte, 2020). These include funding, capital building, and enhancement. Also, there is an increase in entrepreneurship. A study conducted by Zvavahera, Chigora, and Tandji (2018) shows that entrepreneurship indeed created more wealth and employment in Zimbabwe.

### **Political Factors**

We expect peace to reign in a country and to have good leadership. Zimbabwe gained its independence in 1980 (Groves, 2020) and from then there was hope for a better future. Zimbabwe became one of the countries with the highest literacy rate in Africa with a whopping 98% rate (Pasara, Mutambirwa, & Diko, 2020) and there was the provision of free education and free health for the residents (Nyandoro & Hatti, 2019). Some of these could not last long due to Gukurahundi, corruption, political violence, and sanctions. Politics have always been complex but over time the deterioration has been worrisome. These have resulted in fear, a lack of security, sense of instability. As a result, we have seen the residents take partly matters into their own hands by migrating to other countries (Munyoka, 2020).

Gukurahundi is a genocide that took place between the Shona and the Ndebele in Zimbabwe. This took place soon after the independence in 1980 (Mpofu, 2019). This event left an unhealing wound amongst the residents of Zimbabweans and as to present there is a sour relationship between the two. Approximately 20,000 people died in the massacre (Gusha, 2019) with thousands more displaced and missing. This was a clear indication that the country was never stable and there is no peace among the residents. This war left especially the Ndebele people dead, injured, raped, disfigured, and traumatized.

Due to Gukurahundi, the situation instigated fear, trauma, anger, hatred towards the Shona, and a lack of peace (Ndlovu, 2019). Mostly it resulted in post-traumatic stress disorder (PTSD). PTSD has been evident among the victims who still live to tell the horrific events that took place and triggered by the exhumation and reburial of those who went missing as it brings flashbacks of painful memories (Eppel, 2020). As a first step to unifying the Ndebele and Shona, a unity treaty was signed led by the concerned parties (ZANU-PF and PF-ZAPU) in 1987 (Mwonzora & Helliker, 2022).

However, there was no psychological assistance hence a huge gap of unresolved issues still lingers to date. The violence was not properly acknowledged or addressed at the national level therefore there is a lot of bitterness (Manjengenja, 2022). According to Mpofu (2019), the current President Mr. Emmerson Mnangagwa worsened the situation by saying let bygones be

bygones, a statement that has been interpreted as unapologetic and a continuation of suppression. There is still a failure to value ubuntu (togetherness) for reconciliation. According to Mutanda and Hendricks (2022), it is essential for the country to embark on a healing journey for the affected citizens. Therefore, there is a negative correlation between resilience and anger management.

Corruption is the misuse of public resources, bribery, fraud, and abuse of power for private gain (Muzurura, 2019). In this case, the politicians, and the economic elite misuse their power for the accumulation of personal wealth (Ndhlovu & Santos, 2022). According to Dudzai (2021), it is believed that the main reason for corruption in Zimbabwe is the lack of unity (ubuntu) which results in greediness and selfishness. However, the causes vary from political instability, weak public institutions, poverty, shadow economy, and business uncertainties to mention but a few (Muzurura, 2019).

As a result, the richer become richer and the poor become poorer. Resources are not equally distributed, and most of the residents do not have access to basic goods and services. According to Macleod (2022), in events like this, the safety needs in Maslow's hierarchy such as order, law, and security are not met, and this causes distress. Corruption aided in the decay of infrastructure and lack of basic health supplies. Due to corruption and lack of intervention to stop these from happening, residents often have attacks of panic or fear. As the instability gets worse, panic attacks are also increasing as no one is being held accountable.

The only way-out residence found as a solution is a migration to other countries in search of greener pastures and peace (Kidia, 2018). However, this did not help the residents to be resilient but brought more suffering as the experienced professionals were driven out of the country. The government should impose policies that ensure the rule of the law (no one should be above the law) and restrict the powers of politicians and bureaucrats (Muzurura, 2019). Even though, there is a negative correlation between resilience and migration.

Sanctions against Zimbabwe are targeted by the United States and the European Union (Grebe, 2010). The government blames these sanctions for the decline of the economy and politics of Zimbabwe whilst the West argues that the sanctions only apply to Mugabe and his successors (the ZANU-PF party) who are endangering the residents of Zimbabwe (Hans & Choi, 2020). It is believed that because the west could not colonize Zimbabwe successfully, they are still holding on to a vain victory by imposing sanctions (Mararike, 2019). The politicians in question are still benefiting today whilst the people of Zimbabwe are suffering, especially economically.

Due to sanctions, the economy has sunk rock bottom and due to that crime rates have increased. These include theft, murder (for rituals), and other insane crimes because of a lack of structure. Still, with sanctions in place, there is high existence of abuse of human rights, corruption, and violence against civilians. Therefore, how are sanctions serving their purpose whilst they are destroying the people (Van Wyk, 2018)? There is a negative correlation between resilience and the crime rate in Zimbabwe. For the situation to be resolved, the sanctions must be totally

removed (Nyoni, 2019) and the international unions should provide proper intervention to assist Zimbabwe in its former glory.

### **Conclusion**

In summary, resilience is very necessary especially when unpredictable and uncontrollable events occur. Zimbabweans so far have been doing a great job being resilient. However, with the ongoing crisis, it has been evident that Zimbabweans have been resilient to a greater extent as innovation has been at its peak, life expectancy has improved, and indigenization has affected the livelihood of Zimbabweans positively. However, with some policies that the government used to boost the economy moving at a slow pace, suicides amongst males especially are still very high, substance use has taken the youth of Zimbabwe and crime rates have elevated.

Also, a few centers such as Ingutsheni Central Hospital were established. However, there is still a need for more centers and trained psychologists for psychological intervention to take place for those affected mentally by the ongoing struggles in Zimbabwe. Zimbabwe should normalize the use of therapy, rehabilitation, and counseling. The correlation between resilience and life expectancy is positive whilst the relationship between resilience, suicide, substance use, anger management, crime rate, and migration are negative. In my opinion, mandatory implementation of psychological intervention in all sectors in Zimbabwe is very necessary and should be taken seriously.

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## **Social Butterflies and Academic Achievement**

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### **Abstract**

The main aim of this research is to explore the influence of the pro-social behaviour of senior secondary class students on their academic achievement, considering factors like gender and subject stream. Students' academic achievement depends upon variables such as home and school environment, friend circle, mentors, social approval, and appreciation, and so forth. The pro-social behaviour of the students towards their classmates, teachers, parents, and other social personnel is one such crucial factor. The result revealed that the sample displayed an "average" level of pro-social behaviour. The study found no significant difference in the mean scores of female and male senior secondary students. Compared to females, the number of male senior secondary students was more in the "High" pro-social behaviour level. Moreover, it was also observed that non-science senior secondary students were the only students who fell under the "High" pro-social behaviour level. This study further substantiates that there exists a significant positive correlation between pro-social behaviour and academic achievement. The implications for educators, policymakers, and parents in fostering positive pro-social behaviour in their children and fostering social support among senior secondary school students were also outlined.

*Keywords:* academic achievement, adolescents, pro-social behaviour, senior secondary student, socialization

The process of socialisation involves adjusting to and internalising the norms, values, practices, and behaviours of a particular social group. The extent to which children learn social skills and acceptance has a significant impact on how they develop and live in the future. Children's pro-social behaviour can significantly impact their academic and social success in school, and educational settings can deliver essential support for the development of these positive social behaviours. Recent research shows that pro-social behaviour helps young children prepare for school and develop their cognitive abilities. Perspective-taking, understanding, and self-regulation skills also aid in the development of pro-social conduct, and socialisation with parents, teachers, and peers encourages and sustains good behaviour at school. Pro-social behaviour can improve students' academic and social achievement in school, and educational environments can be vital for the growth of these positive social behaviours (Wentzel, 2015).

The past research studies explored different criteria, such as home and school environment, friend circle, mentors, social approval, and appreciation, and so on, in relation to pro-social behaviour and its effects on the academic achievement of students in different genders of variable age groups, area of study and socio-economic status. Previous research has shown that girls tend to be more pro-social than boys (Carlo & Randall, 2002). According to them, girls have a higher innate disposition to act pro-socially. However, one study showed that men align their behaviour with the average of the group, whereas women were found to be insensitive to the information about group behaviour (Meier, 2007). Few studies have clearly stated that teenage boys show public pro-social behaviour that helps with instrumental behaviour like helping in sharing and presenting physical help (Carlo & Randall, 2002; Rose & Rudolph, 2006). Sonja and colleagues (2009) further supported that male students' correlation between academic achievement and social behaviour was higher.

Studies (Candido et al., 2009; DeVries, 2018) argue that social behaviour supports the social means of learning within the social-emotional learning structure. Caprara and colleagues (2000) presented a longitudinal study which demonstrated that pro-socialness had a strong positive effect on later academic success and social preference. Nonetheless, some inconsistent results remain. Abera (2020) found that pro-social behaviour negatively and significantly indicates students' academic accomplishment. Similarly, Nadeem and colleagues (2020), expressed in their study that high achievers exhibited fewer positive relationships with their peers. Shirin (2020) also found a weak negative relationship between pro-social behaviour and academic achievement. Most studies have proved a positive link between pro-social behaviour and academic performance. Regardless of age and gender, pro-social children are observed to be more likely to achieve desired academic outcomes.

The research work done in the present study shows the correlation between the "*social butterfly*" adolescents (i.e., pro-social behaviour and academic achievement of the students in home, school, and neighbourhood environments). The pro-social behaviour in male and female students was evaluated with predefined statements with varying degrees of responses. The effect of study subjects such as Arts, Humanities and Science on pro-social behaviour and academic achievement was also observed. The following objectives guided the purpose of the study:

1. To study the level of pro-social behaviour in the total sample and its sub-sample.
2. To study the significant mean difference in the scores of pro-social behaviour between male and female senior secondary students.
3. To study the significant mean difference in the scores of pro-social behaviour between science and non-science senior secondary students.
4. To study the significant relationship between pro-social behaviour and academic achievement in the total sample and its sub-sample based on gender and subject stream.

### **Research Methodology**

Due to the nature of this research's objectives, a descriptive research technique was selected and used to achieve the results. The sample consisted of 120 randomly selected students from two senior secondary schools of Aligarh Muslim University, Aligarh. To include gender variables one school of boys and other schools of girls was selected. Out of the total sample population of one hundred twenty students, 60 were boys, and 60 were girls. Further, 30 students from the Science and Non-Science streams were selected from each school (Table 1).

**Table 1**

*Description of the Sample Taken from AMU Schools*

<b>Name of School</b>	<b>Gender</b>	<b>Sample</b>	<b>Stream</b>	<b>Sample</b>
AMU Girls Senior Secondary School	Female	60	Science	30
Saiyyid Hamid Senior Secondary School			Non-Science	30
	Male	60	Science	30
			Non-Science	30

To make the study systematic, an appropriate tool is selected for the collection of data. There are various tools which are suitable for a particular study. The details of the individual student such as were collected using a demographic questionnaire. For the present study, the Pro-social Behaviour scale developed by Sameer and Neethu (2022) was used to collect data. The developed tool has two sections; Part A was a demographic questionnaire in which students' details such as name, age, gender, subject, school, and percentage scored in high school were mentioned. While Part B of the tool consists of the Pro-social Behaviour Scale (PSB), a five-point Likert scale consisting of 23 statements.

The validity of the scale was ensured by giving the same to 10 experts from the field. Based on their deliberations, a few statements were deleted, and some have been modified. Thus, face and content validity had been ensured. To verify the internal consistency of the PSB scale, Cronbach Alpha Test was employed. It was found that Cronbach's Alpha is 0.724, which shows a high level of internal consistency for the PSB scale. This indicates that the scale is reliable.

## Analysis and Interpretation

To study the level of pro-social behaviour in the total sample and its sub-sample, percentage analysis was done. After analysing the pro-social behaviour scores, it was observed that 40.0% of the total population scored at “*Low*” pro-social behaviour level, 57.5% of the total population had “*Average*” pro-social behaviour level, and only 2.5% of the total population showed “*High*” pro-social behaviour level.

**Table 2**  
*Descriptive Statistics of Pro-Social Behaviour*

Criterion Variable	Groups	PSB Score Demographics (Total Sample: 120)					
		Low		Average		High	
		N	%	N	%	N	%
	Total	48	40.00	69	57.50	3	2.50
Gender	Male	30	25.00	28	23.33	2	1.67
	Female	18	15.00	41	34.17	1	0.83
Subject	Science	24	20.00	36	30.00	0	0.00
	Non-Science	24	20.00	33	27.50	3	2.50

According to different demographic variables, the majority of male students scored “*Low*” pro-social behaviour level (25.0%), while the female majority was displayed at an “*Average*” pro-social behaviour level (34.17%). However, 1.67% of male students scored “*High*” level of pro-social behaviour as compared to 0.83% in female students. Streamwise, it was observed that the majority of the students of both science and non-science streams showed “*Average*” pro-social behaviour levels (30.0% and 27.5%, respectively), while non-science students were the only students who scored “*High*” pro-social behaviour levels (2.5%). The results have clearly revealed that the sample manifested an “*Average*” pro-social behaviour level, with more females and science students than their counterparts.

To study the significant mean difference in the scores of pro-social behaviour between male and female senior secondary students, an independent sample t-test was conducted to determine whether the mean pro-social behaviour score in males differs from that in the female population. The group statistics and Independent Sample Test values have been presented in Tables 3 and Table 4.

**Table 3***Group Statistics for Gender Variable Using t-Test*

	Gender	N	Mean	Std. Deviation	Std. Error Mean
<b>Total_PSB</b>	Female	60	95.2500	7.53888	.97327
	Male	60	92.8333	8.27323	1.06807

**Table 4***Group Statistics for Gender Variable Using Independent Samples Test*

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
<b>Total_PSB</b>	Equal variances assumed	.295	.588	1.672	118	.097	2.41667	1.44500	-.44482	5.27816
	Equal variances not assumed			1.672	116.995	.097	2.41667	1.44500	-.44508	5.27841

From Table 4, analysis results show that there is no significant difference in mean scores of pro-social behaviour of female and male students 2.42, ( $t=1.672$ ;  $p=0.097$ ). The mean score of pro-social behaviour of female students ( $M=95.25$ ,  $SD=7.53$ ) was found to be close to male students ( $M=92.83$ ,  $SD=8.27$ ).

To study the significant mean difference in the scores of pro-social behaviour between science and non-science senior secondary students, an independent sample t-test was conducted to determine whether the mean pro-social behaviour score in students in the science stream differs from students in the non-science stream. The group statistics and analysis results have been presented in Tables 6 and 7.

**Table 5***Group Statistics for Subject Stream Variable Using t-Test*

	Stream	N	Mean	Std. Deviation	Std. Error Mean
<b>Total_PSB</b>	Non-Science	60	93.7167	7.89570	1.01933
	Science	60	94.3667	8.10517	1.04637

**Table 6***Group Statistics for Subject Stream Variable Using Independent Samples Test*

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
<b>Total_PSB</b>	Equal variances assumed	.338	.562	-.445	118	.657	-.65000	1.46080	-3.54278	2.24278
	Equal variances not assumed			-.445	117.919	.657	-.65000	1.46080	-3.54280	2.24280

The results extrapolated that there is minimal difference in mean scores of pro-social behaviour of science and non-science stream students with a mean difference value of 0.65, ( $t=-0.445$ ;  $p=0.657$ ). The mean score of pro-social behaviour of non-science stream students ( $M=93.72$ ,  $SD=7.89$ ) was found to be very close to science stream students ( $M=94.37$ ,  $SD=8.11$ ).

To study the significant relationship between pro-social behaviour and academic achievement in the total sample and its sub-sample based on gender and subject stream. To understand the correlation between academic achievement and pro-social behaviour in the total student sample and its sub-sample based on gender and subject stream, the Pearson's Product Moment correlation coefficient was evaluated and compared within the different criterion variables.

**Table 7***Comparison of Pearson Correlation Values Obtained Between PSB Score and Academic Achievement in All Groups*

Predictive Variable	Criterion Variable Pro-social Behaviour			
	Groups	N	r	Correlation
Academic Achievement	Total	120	0.772**	A significant positive correlation was found in all the groups
	Male	60	0.855**	
	Female	60	0.509**	
	Science	60	0.729**	
	Non-Science	60	0.810**	

*Correlation is significant at 0.01 level (2-tailed)*

The results reveal that there is a significant positive correlation between academic achievement and pro-social behaviour score in the total sample of senior secondary students, as the Pearson correlation value was found to be  $r(118)=0.772$  ( $p=0.01$ ). It means that students who possess more social prospects tend to help each other in school and other personnel outside school.

They are also more likely to achieve better academic scores than students who are less active socially.

Further, the Pearson correlation between pro-social behaviour score and academic performance showed a significant positive correlation for both male as well as female senior secondary students. The male students displayed a high correlation strength,  $r(59)=0.855$ ;  $p=0.01$  than female students,  $r(59)=0.509$ ;  $p=0.01$ . Thus, male students are more likely to help, display high pro-social behaviour and achieve high academic grades than female students. As discussed earlier in objective 1, more male students had “High” pro-social levels than female students.

After conducting Pearson correlation analysis between pro-social behaviour score and academic performance, there was a significant positive correlation for students enrolled in both science as well as non-science streams. The students taking non-science subjects displayed higher correlation strength,  $r(59)=0.810$ ;  $p=0.01$  than science stream students,  $r(59)=0.729$ ;  $p=0.01$ . Thus, students with non-science streams are more likely to help, display high pro-social behaviour and achieve high academic grades than students enrolled in science streams. Further, it was observed that the majority of students enrolled in non-science, as well as science stream, showed “Average” level of pro-social behaviour (Table 2). However, the “High” pro-social level was displayed by students of the non-science stream only.

The correlation displayed the linear relationship between pro-social behaviour score with the academic achievement in the total sample, that is to say, with an increase in pro-social behaviour score, academic achievement in the students will also increase and vice-versa. It can be concluded that a significant positive correlation was found in all the criterion variables

## Discussion

The present sample displayed an “average” level of pro-social behaviour. Social skills enable people to form relationships with others, and social behaviours are the result of those relationships. The senior secondary school may still have to work hard on their social skill in order to improve their social behaviour. Cooperation, assertion, responsibility, empathy, and self-control are the five fundamental social skills that schools, and classrooms should be focusing on developing, according to Elliott and Busse (1991). In students learning, social interaction plays a significant role. For this, we have to shift our classroom from a teacher-centred to a student-centred classroom.

The study found no substantial difference in the mean scores of female and male senior secondary students. Compared to females, the number of male senior secondary students was more in the “High” pro-social behaviour level. Moreover, the correlation strength between academic achievement and pro-social behaviour in male senior secondary students was more potent than the female student. Previous research has shown that girls tend to be more pro-social than boys (Carlo & Randall, 2002). According to the study, girls have a higher innate disposition to act pro-socially. From an early age, they manifest empathy, compassion, caring attitude (Zahn-Waxler et al., 2008). However, one study does align with this finding that



women appear to be indifferent to knowledge regarding group behaviour, but men tend to align their behaviour with the average of the group (Meier, 2007).

It can be said that the gender difference felt in pro-social behaviour may be because of the social expectation, individual disposition, hormonal process, and type of pro-social behaviour. There are few studies which have clearly stated that teenage boys show public pro-social behaviour, i.e., helping in sports, sharing, and presenting physical help (Carlo & Randall, 2002; Rose & Rudolph, 2006). In line with this, Eagly (2009) postulated that women are more likely to participate in pro-social actions on an agentic dimension. Sonja and colleagues (2009) further support that correlations between students' social behaviour and academic achievement were found higher in male students.

Streamwise analysis showed that non-science students had a stronger correlation strength between pro-social behaviour and academic performance than science students. Moreover, it was also observed that non-science senior secondary students were the only students who fell under the “*High*” pro-social behaviour level. This finding is similar to Castilla & Plante's (2017) study, which clearly argued that social science students tend to help others. The learning atmosphere may also have an impact on students' pro-social approaches. Among science students, the learning environment may be very competitive, for them socializing is time-consuming, as a result, they may manifest behaviour like “*I for myself*,” which indicates that they may be reluctant to share their notes, work together in groups, volunteer in activities, etc. When students are performance-oriented, they tend to value only those relationships that are academically successful.

There are studies (Candido et al., 2009; DeVries, 2018; Gerbino et al., 2018; Lewis et al., 2017) which argue that within the socio-emotional learning structure, social behaviour supports the social medium of learning (Baroody et al., 2016; Keung, 2003; Slavin, 1995; Vygotsky, 1978). Caprara and colleagues (2000) presented a longitudinal study which demonstrated that pro-socialness positively impacted academic performance and social preference. A growing body of research attests to the multiple beneficial outcomes of pro-socialness on students' academic achievement (Askill-William & Lawson, 2015; Farrington et al., 2012; Malecki & Elliot, 2002; Wentzel & Calwell, 1997). The probable reason for pro-social behaviour to have a relationship with academic performance is that when the students are engaged in sharing, helping, cooperating and others, they will develop self-satisfaction, which will provide them peace of mind and heart. Their social skills will earn them friendships and help to adapt to academic life. They will concentrate more on their studies, and feel confident in their academic preparation, which will help to increase their academic achievement. It is natural that when you feel isolated, and you have no one to share your academic concerns and challenges. The mind gets preoccupied with negative thoughts, anger, frustration, anti-social thoughts related to cheating and others. This will no doubt affect the academic achievement of the student.

Academic achievement is a quality that could promote connections among peers. Friendships among students are frequently founded on shared characteristics since these individuals are more likely to understand one another and be trustworthy (Brouwer et al., 2021; Lazarsfeld &

McPherson et al., 2001; Merton, 1954; Veenstra et al., 2013). Cialdini and colleagues (1976) have written on “*basking in reflected glory*”, where the affinity of individuals to associate themselves with the successful, famous, or celebrated. They talked about “*basking in reflected glory*,” in other words, “*BIRGing*” in sports. The same can be said to apply in academia. Academically successful students become popular and famous. And other students want to befriend them as it will enhance people’s public image, self-esteem, and self-confidence. They love to be associated with them. This can only be possible if successful students have social skills and pro-social conduct; otherwise, success can also make them condescending, arrogant, and pompous, and their personalities will start to repel other students.

Nonetheless, some inconsistent results remain. Abera (2020) found that pro-social behaviour negatively predicts students’ academic attainment. Similarly, Nadeem and colleagues (2020) expressed in their study that high achievers exhibited relatively fewer positive relationships with their peers. Shirin (2020) also found a weak negative relationship between pro-social behaviour and academic achievement. Most studies have proved a positive link between pro-social behaviour and academic performance. Regardless of age and gender, pro-social children are more likely to achieve desirable academic outcomes (Flook et al., 2015; Malecki & Elliot, 2022; Normandeau & Guay, 1998).

### **Educational Implications of the Study**

The educational implications of the present study for different stakeholders have described in the following sub-sections.

***Implications for Teachers and Students:*** Instructors should encourage moral principles in their pupils and forbid them from engaging in antisocial behaviour. Individual diversity should be valued, and pupils’ willingness to spot any issues other students may have should also be encouraged. Suppose teachers have a clear understanding of various aspects of pro-social behaviour among students of both male and female gender. In that case, they can also encourage the development of those aspects among the students. The teacher can help pupils by discouraging their employment of certain dishonest and antisocial tactics by being aware of these tactics. Assigning project work to the pupils helps to build social values, peer harmony and healthy competitiveness among the students. Helping behaviour should be encouraged. Students should make efforts to help their peers with this kind of behaviour, as it may result in both social and material benefits for them. Students’ pro-sociality must include behaviour such as donating, cooperating, sharing, volunteering, etc. These values are positively valued and liked and popular, which builds trusting friendship bonds. The teacher-student relationship should be cultivated and nurtured. This will not only help to enhance pro-social behaviour, but the warm, congenial environment will also prove beneficial for them to connect with other peers, engage in activities in the classroom and commit to academic affairs. Teacher-student relationship quality may also minimize the chances of students becoming victims of bullying and harassment. Students who do not go to school because of being silently excluded have poor attendance and drop out of school. Therefore, inculcating pro-social behaviour will help to minimize dropouts by creating a peer acceptance atmosphere, students sharing notes and

reading material, working on group activities, etc. The cooperation skill will aid the students to engage in cooperative learning rather than individualistic learning.

***Implications for Policymakers:*** The requirement of moral science, social science, and ethics to instill moral and ethical principles in students. Schools and universities should have a clear correlation between the rules, regulations, and penalties for breaking those rules. Periodically, group counselling sessions should be held to allow students the opportunity to address their issues and find solutions freely. For people with issues that call for individualised attention and assistance concerning job growth and academic improvement, individual counselling sessions should also be scheduled. Teachers can attend workshops to learn how to encourage pupils to conduct themselves in a pro-social manner and to avoid engaging in dishonest behaviour. To encourage social values among the pupils, projects and group work should be prioritised in the curriculum.

***Implications for Parents:*** To prevent their children from becoming prone to unethical behaviour and help them establish social values, parents should instil moral ideals in them from an early age. Since social rearing begins at home, creating a supportive environment is crucial for encouraging pro-social behaviour. Children should not be afraid or hesitant to talk to them about their difficulties. Spending quality time with children bridges gaps and helps to nurture pro-social values among children. Parents should not compare their children's academic achievements; rather, they should encourage them to develop their interests in different subject streams. This will help them build confidence and create a positive self-image.

## Conclusion

The present study was conducted on senior secondary school students to determine the relationship between pro-social behaviour and academic attainment. This study further substantiates that there exists a significant positive correlation between pro-social behaviour and academic achievement. A linear relationship between pro-social behaviour scores and academic achievement in the total sample was observed, that is, with an increase in pro-social behaviour scores, academic achievement in the students will also increase and vice-versa. There also exists a significant positive correlation between demographic factors like gender and subject stream and pro-social behaviour, which directly relates to the students' academic performance. Implications for the teachers, policymakers, and parents to promote the desirable pro-social behaviour amongst their children and boost social support among the students at the senior secondary school level were also laid down. Pro-social behaviour is a positive social phenomenon. Thus, promoting pro-social culture in schools will make the students have a smooth transition from school to university. And if this pro-social culture is sustained at higher education institutes, it will help the youth to adapt progressively to society and in all spheres of social interactions.

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## **Development and Initial Validation of the Filipino Youth Hoarding Rating Scale**

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### Abstract

Although hoarding is considered a public health concern for the elderly, recent research indicates that hoarding concerns begin as early as childhood and adolescence. However, there is a dearth of psychometrically sound instruments capable of quantifying the multiple domains of hoarding in a developmentally sensitive manner, limiting the study of hoarding in the younger population. The current study details the development and preliminary validation of the youth hoarding rating scale in a non-clinical sample of Filipino adolescents. A total of 640 adolescents ( $M_{age}=14.5$ ,  $SD=1.4$ ) from private and public high school institutions in the Philippines completed the self-report Youth Hoarding Rating Scale (YHRS). The scale's factor structure was examined using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Cronbach's Alpha was also used to determine internal consistency. Confirmatory Factor Analysis (CFA) appeared to support three factors in the current study: cluttering, difficulty discarding, and compulsive acquisition. Each YHRS subscale, namely difficulty discarding ( $r=0.756$ ), compulsive acquisition ( $r=0.704$ ), and cluttering ( $r=0.776$ ), demonstrated strong internal consistency, indicating that the individual subscales are reliable indicators of youth hoarding tendencies. The loadings on all 15 items in YHRS were greater than .40, indicating a substantial or desirable component. Test of difference revealed that hoarding tendencies are comparable between sexes and throughout the adolescent years. The YHRS is a valuable supplementary measure of hoarding tendencies in the adolescent population in the Philippines that could be used to aid in the risk and assessment of youth hoarding. Its psychometric properties and utility could be investigated further.

*Keywords:* adolescents, cluttering, compulsive acquisition, difficulty discarding, youth hoarding rating scale



Hoarding is a little-studied phenomenon. It is believed to be a global health concern for the elderly, despite the fact that hoarding problems typically manifest during childhood and adolescence (Burton et al., 2015; Ivanov et al., 2013). Adult hoarding has received increased attention and understanding from mental health professionals and researchers (Ayers et al., 2015; Diefenbach et al., 2013; Kajitani et al., 2019), but available data on youth hoarding is insufficient. Additionally, recent publications have concentrated on hoarding concerns in Western developed countries and have primarily used clinical samples, such as those with obsessive-compulsive disorders (Burton et al., 2015; Phung et al., 2015; Samuels et al., 2014; Worden et al., 2019). Studies examining hoarding concerns in non-western countries, particularly the Philippines, are non-existent.

Additionally, there is a dearth of psychometrically sound measures for hoarding dimensions in children and adolescents. To the authors' knowledge, hoarding is frequently assessed in the younger population using the Children's Saving Inventory (CSI), a parent-rated measure (Storch et al., 2011), which is the most recent childhood hoarding measure. Additionally, hoarding has been assessed in the younger population using the 18-item parent-report measure known as the Obsessive-Compulsive Inventory-Revised (OCI-R), which has been shown to have favourable psychometric properties (Abramowitz & Deacon, 2006; Huppert et al., 2007). The OCI-R was developed to measure the symptoms and severity of OCD in children and adolescents and includes five subscales: washing, checking, ordering, obsessing, hoarding, and neutralizing (Foa et al., 2002). Prior to developing the CSI and OCI-R, a valid and reliable measure of hoarding severity and symptoms in children and adolescents was the ten-item Children's Yale-Brown Obsessive Compulsive Scale (CYBOCS), a clinician-rated dimensional OCD measure (Scahill et al., 1997; Storch et al., 2004). Obsessions and compulsions of children and adolescents are rated on a four-point scale in CYBOCS. Nonetheless, despite their favourable psychometric properties, these measures mentioned above of hoarding in the younger population had their own set of limitations. For instance, it has been argued that CYBOCS does not provide a hoarding severity index and does not assess other dimensions of hoarding (e.g., cluttering) (Storch et al., 2004). Additionally, the reliability and validity of these previous measures (i.e., CSI, CYBOCS, and OCI-R) were primarily based on youth with OCD. Similarly, their measures were developed with a mix of children and adolescents as target participants. Existing measures in non-western countries are insufficient, thwarting cross-cultural understanding of hoarding progression.

Given that adolescence (early, middle, and late) is a distinct developmental stage during which several significant changes occur (Laursen & Hartl, 2013), we developed a self-report measure to assess hoarding tendency in this age group. The measure is based on the Saving Inventory-Revised (SI-R), which was developed for adults and assessed three dimensions: cluttering, difficulty discarding, and compulsive acquisition (Frost et al., 2004). SI-R exhibited excellent psychometric properties and a high degree of internal consistency (Frost et al., 2004) and has been widely used by a variety of researchers and clinicians (Ayers et al., 2015; Kellman-McFarlane et al., 2019; Lee et al., 2016; Tortella-Feliu et al., 2006). The current version of the Youth Hoarding Rating Scale (YHRS), based on SI-R, contains 15 items rated on a 5-point Likert scale.

The current study demonstrates the initial development and validation of the Youth Hoarding Rating Scale (YHRS) in a sample of non-clinical Filipino adolescents to address previously identified limitations of previous hoarding measures, thus contributing to the body of knowledge. Specifically, this study assesses the reliability and validity of the YHRS and highlights the first study to examine hoarding tendency in an adolescent non-clinical sample. The current investigation accomplished the following objectives: (a) what is the internal consistency of each hoarding tendency dimension? (b) what is the factor structure of YHRS? (c) is there a significant difference in adolescents' hoarding tendencies based on their age and biological sex?

## Methodology

### Participants

This study recruited 640 non-clinical samples of Filipino adolescents, 48% male (N=307) and 52% female (N=333), from three non-sectarian and three sectarian schools in the Philippines. Their ages range from 12 to 19 years ( $M$  age=14.5,  $SD$ =1.4). The primary sampling method was simple random sampling. The sociodemographic characteristics of the participants are summarized in Table 1. It was ensured that participants in the current study could communicate effectively in English. Participants who could not comprehend specific items in the questionnaire were immediately assisted by supporting them in comprehending the items. Additionally, this study secured the approval of adolescents' legal guardians through signed parental consent and school administration approval. As disclosed in their parents' informed consent, adolescents with a history of psychological diagnosis were excluded from the data analysis.

**Table 1**

*Results by Students' Age and Sex*

Sociodemographic n=640		N	%
Age	12-13 (early adolescents)	167	26%
	14-15 (middle adolescents)	326	51%
	16-19 (late adolescents)	147	23%
Sex	Male	307	48%
	Female	333	52%

### Research Instrumentation

The self-developed Youth Hoarding Rating Scale (YHRS) was used to assess adolescents' hoarding tendencies. Each item on the questionnaire is rated on a five-point Likert scale ranging from 1 (Never) to 5 (Always). The self-report measure developed in this study was inspired by Domènech-Llaberia and colleagues' unpublished Self-Report Hoarding Inventory – Adolescent version (Domènech-Llaberia et al., 2012), the most recent and only self-report measure for adolescents' hoarding behaviors in the Western countries. Additionally, the Saving Inventory-Revised (SI-R) of Frost and colleagues (Frost et al., 2004) was used as a

guide to developing a developmentally appropriate measure for adolescent hoarding. Finally, the parent-rated Children's Saving Inventory (CSI) of Storch and colleagues (Storch et al., 2011) was also utilized as one of the references in constructing the YHRS. The YHRS is divided into three subscales: cluttering, difficulty discarding, and compulsive acquisition. These subscales were derived from Frost and colleagues' Saving Revised Inventory (Frost et al., 2004). The mean of the three subscale scores is used to calculate the overall hoarding tendency score.

## Ethical Concerns

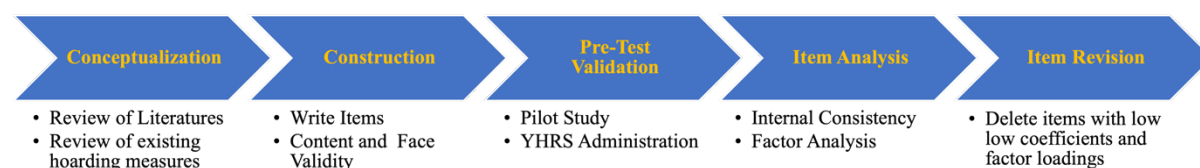
This study obtained assent, parental consent, and approval from the Department of Education in the Philippines. Aside from that, the Ethics Review Board of the authors' institution gave its consent to the current investigation.

## Data Analysis

Cohen and Swerdik's (Cohen & Swerdik, 2017) process of test development was followed in this study (see Figure 1): test conceptualization, test construction, pre-test validation, item analysis, and item revision. A review of pertinent literature was conducted during the test conceptualization phase. Test construction was successful after an analysis of pertinent studies on hoarding and existing hoarding measures. We created items for each of the core constructs identified by Frost and colleagues (Frost et al., 2004) in their Saving Inventory-Revised (SI-R): cluttering, difficulty discarding, and compulsive acquisition. Initially, 17 items were developed after conducting a review of existing hoarding measures. Seven experts in psychology and related fields (assessment psychologists, psychology professors, social science researchers, and test development specialists with a minimum of a master's degree) were invited to examine the YHRS's relevance by carefully evaluating each item. They were chosen based on their capabilities and expertise. The face validity of the YHRS was determined by randomly selecting three junior high school students in grades 7–10 to ensure that the items were unambiguous. Following content and face validity; a pre-test validation was conducted to contextualize YHRS. The pilot study was conducted in one sectarian and one non-sectarian high school. 280 participants volunteered to participate and were permitted to do so by their legal guardians and school administrators. Unanswered questionnaires were excluded from the data analysis.

## Figure 1

*Test Development Phases of the Youth Hoarding Scale (YHRS)*



IBM SPSS v26.0 was used to determine the component structure and internal consistency of the 17-item YHRS. The component structure and validity of a set of observed constructs were verified using Exploratory Factor Analysis (EFA). The Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were used to determine the suitability of the data for PCA. The questionnaires' reliability was determined by analyzing their internal consistency using Cronbach's Alpha. The pilot study revealed a 15-item YHRS; two items in compulsive acquisition (*item 12: I collect more things despite my family's complaints; item 17: I spend all of my money on things I didn't intend to buy*) were deleted due to EFA factor loadings less than 0.40. Items with a load greater than .40 have been retained. The pilot study revealed that each construct had a high degree of internal consistency. Cluttering had a Cronbach's Alpha of 0.755 for six items (i.e., *I have difficulty walking through the place where I stay because of my garbage*). For six items, difficulty discarding had a Cronbach's Alpha of 0.722 (i.e., *I couldn't part with personal items, even if they were no longer useful.*) and compulsive acquisition had a Cronbach's Alpha of 0.794 (i.e., *I obtain/collect items that have already been discarded by others.*). Following the pilot study, adolescents in randomly selected sectarian and non-sectarian high schools in the Philippines were administered the YHRS. As with the pilot study, the final data were analyzed using Exploratory Factor Analysis (EFA) to confirm the component structure and validate the observed constructs. The Kaiser-Meyer-Olkin (KMO) Test and Bartlett's Test of Sphericity were used once more to determine the data's suitability for EFA.

To better understand the EFA-derived model, confirmatory factor analysis (CFA) in AMOS software was used to assess the validity of the constructs identified by Frost and colleagues (Frost et al., 2004) using the 640 samples of non-clinical Filipino adolescents. Fit indices were calculated using an empirically derived reference value. In CFA, fit indices were used to quantify how much variance in the covariance matrix had been accounted for, thereby determining the model's applicability. In this study, the absolute fit indices used were the chi-square value (CMIN) with a level of 3.0, the P-value with a level of .05, and the root mean squared error approximation (RMSEA) with a level of .06 or .05. The incremental fit indices were calculated using the comparative fit index (CFI), the incremental fit index (IFI), the relative fit index (RFI), and the normed fit index (NFI). In general, a threshold value for the incremental fit index that is close to 1 indicates a perfect model fit.

## Results

### Sociodemographic Analysis

As illustrated in Table 2, 26% or n=167 were adolescents aged 12-13 years, 51% or n=326 were adolescents aged 14-15 years, and 23% or n=147 were adolescents aged 16-19 years. Furthermore, participation by both sexes was comparable, with male adolescents participating at a rate of 48% (n=307) and female adolescents participating at a rate of 52% (n=333).

**Table 2***Results by Students' Age and Sex*

<b>Sociodemographic</b>		<b>N</b>	<b>%</b>
Age	12-13	167	26%
	14-15	326	51%
	16-19	147	23%
Sex	Male	307	48%
	Female	333	52%

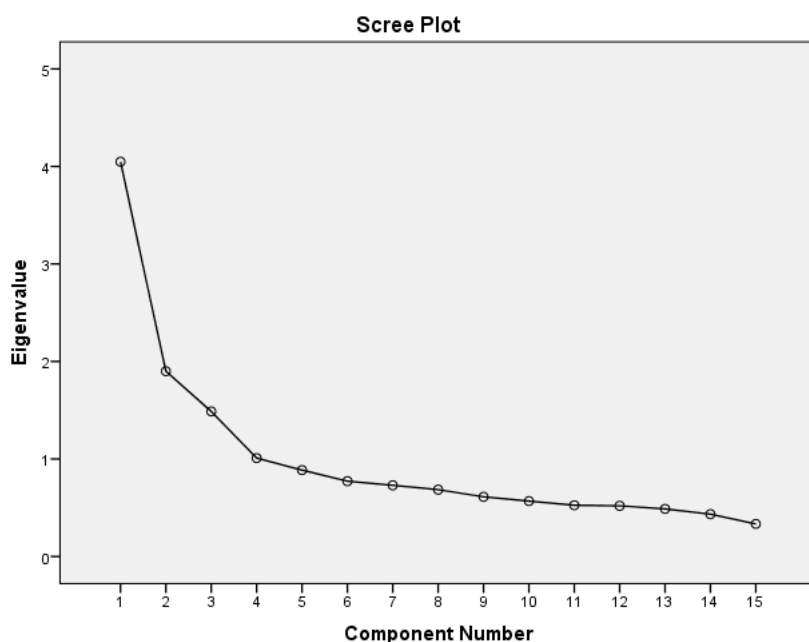
At the alpha 0.05 level, analysis of variance revealed that adolescents did not differ in all hoarding tendency dimensions when the age range was considered to be 12-13 years old with  $F(639)=0.83$ ,  $p=0.921$  for early adolescents, 14-15 years old with  $F(639)=0.16$ ,  $p=0.984$  for middle adolescents, and 16-19 years old with  $F(639)=0.35$ ,  $p=0.705$  for late adolescents. Additionally, t-test statistics revealed that no significant difference in cluttering ( $t=2.18$ ,  $p=0.078$ ), difficulty discarding ( $t=-2.500$ ,  $p=0.244$ ), or compulsive acquisition ( $t=1.121$ ,  $p=0.127$ ) was observed between sexes at the alpha 0.05 level. The findings suggest that hoarding tendencies among adolescents may be comparable across biological sexes from early to late adolescence.

### **Internal Consistency**

Cluttering subscale with 5 items had an internal consistency of 0.756, while Difficulty discarding subscale with 6 items and Compulsive Acquisition subscale with 4 items subscales both had an internal consistency of 0.704 and 0.776. All subscales in the YHRS are predicted to have high internal consistency, according to the data.

### **Factor Analysis**

Initially, Exploratory Factor Analysis (EFA) was performed using the Varimax Kaiser Normalization rotation method in five iterations to determine the optimal factor structure in a non-clinical sample of Filipino adolescents with hoarding tendencies. As illustrated in Figure 2, there were three factors with eigenvalues greater than one in the initial EFA of YHRS, implying that three components emerged from the un-rotated EFA of YHRS. The eigenvalues of factors 1, 2, and 3 were 4.048, 1.900, and 1.487, respectively. As Stevens suggested (Stevens, 2009), items with factor loadings less than .40 were suppressed.

**Figure 2***Scree Plot of Eigenvalues from Un-Rotated PCA of the YHRS*

Loadings for the three-factor solutions generated by EFA are shown in Table 3. Parallel analysis (Hayton et al., 2004) established the three-factor model, which the authors accepted. Each item had a loading greater than or equal to .40. The first factor, which consisted of five items classified as cluttering, had consistently high factor loadings ranging from 0.63 to 0.75. The second factor, identified as difficulty discarding, contained six items, and had factor loadings ranging from 0.49 to 0.72. Finally, the third factor, defined as the compulsive acquisition, had consistently high factor loadings ranging from 0.64 to 0.83. Additionally, for the three-factor model, communalities of 0.29 to 0.63 were inferred to be adequate to excellent (MacCallum et al., 1999).

**Table 3***Rotated Factor Loadings for Youth Hoarding Rating Scale (YHRS)*

Items in YHRS	CL	DD	CA	Communalities
My clothing storage area is cluttered with unimportant items.	<b>.754</b>	.063	.085	.418
I have a lot of trash in the area where I spend my personal time at home	<b>.709</b>	.060	.109	.486
I have difficulty walking through the place where I stay because of my garbage	<b>.707</b>	.067	.089	.579
I couldn't use the place where I sleep because it had so many personal items on it.	<b>.669</b>	.127	.150	.519
I'm having trouble getting rid of my personal trash.	<b>.632</b>	.130	.035	.513
I do not agree if the personal items I no longer require are given to others.	.147	<b>.729</b>	-.009	.407
I couldn't part with personal items, even if they were no longer useful.	.041	<b>.708</b>	.169	.532
When personal items I no longer need are discarded, I become enraged.	.145	<b>.607</b>	.135	.398
It is difficult for me to throw or sell broken items (watch, toys, etc.)	.168	<b>.597</b>	.113	.553
I go through my belongings and look for things I've already discarded.	.140	<b>.551</b>	.146	.344
I keep a lot of things I no longer need in case they come in handy in the future.	-.126	<b>.497</b>	.165	.291
I collect/get things from anywhere that my family thinks are useless.	.136	.131	<b>.832</b>	.582
I bring home any object I find useful outside but not useful for other people.	.125	.179	<b>.764</b>	.727
I have a lot of things that I collect, but we don't have enough space to keep them at home.	.044	.195	<b>.736</b>	.632
I obtain/collect items that have already been discarded by others.	.142	.128	<b>.648</b>	.456

Numbers printed **bold** implies items with the highest loadings greater than .40.

**Communalities:** .2-.4 = adequate, .6 or higher=excellent (MacCallum et al., 1999)

**Legend:** CL=Cluttering, DD=Difficulty Discarding, CA= Compulsive Acquisition

Maximum likelihood estimation in Confirmatory Factor Analysis (CFA) was used to further examine and validate the model derived from EFA. The data factorability was satisfactory (0.820), and Bartlett's test of sphericity was significant ( $\chi^2= 2290.12$ ,  $p < 0.001$ ). EFA revealed a three-factor structure for YHRS, with 26.9% of the total variance explained. Additionally, the item loadings ranged from 0.49 to 0.83. CFA confirmed the three-factor solution generated by EFA, as illustrated in figure 3. Associated to the CFA results in Table 4, nearly all fit indices indicated an acceptable model fit for the three-factor structure of hoarding tendency among adolescents. With a model fit index of 2.88 and a sample size greater than

200, the model was deemed acceptable for absolute fit measures, specifically the chi-square goodness of fit (Hu & Bentler, 1999; Ullman & Bentler, 2012).

Additionally, the model was statistically significant at the alpha level of 0.05. The RMSEA, which is the square root of the mean of the covariance residuals, indicates that the model fits well (Hu & Bentler, 1999; Ullman & Bentler, 2012). PCLOSE revealed that the model fits "closely," which corroborates the RMSEA results. Incremental fit measures (Byrne, 2005; Marsh & Hau, 1996; Schumacker & Lomax, 2004) revealed that the comparative fit index had a model fit index of 0.926, which was considered acceptable, implying that the three-factor model used in this study is superior to the independence model. Additionally, the incremental fit index was demonstrated to be acceptable, with a model fit index of 0.927 indicating the best possible model. However, the normed fit index (0.85) was not met, implying that the model in this study improves fit by only 89% when compared to the independence model; and the NFI result was lower than the reference value (0.90 to >1.0). Tucker Lewis index also corroborated the NFI result, with an acceptable model fit index of .900 inferred. Both the PNFI (Parsimony of Normed Fit Index) and the PCFI (Parsimony of Comparative Fit Index) had acceptable fit index values of 0.647 and 0.671, respectively, relative to the reference value of >0.50 (Hu & Bentler, 1999; Marsh & Hau, 1996).

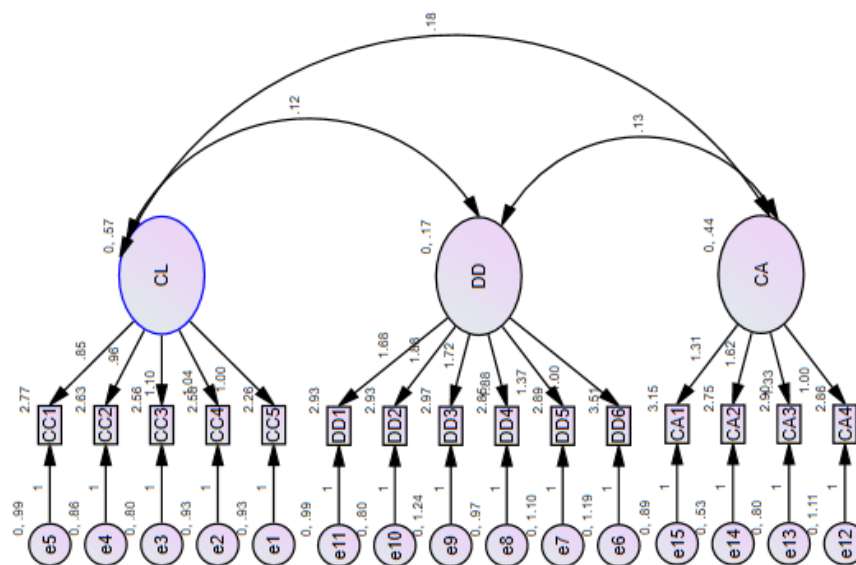
**Table 4**

*Model Fit Indices Constructs of Youth Hoarding Rating Scale*

<b>Model fit criterion for the 3-factor model</b>	<b>Reference Value</b>	<b>Model Fit Indices</b>	<b>Remark</b>
<b><i>Absolute Fit Measures</i></b>			
Chi-square/df ( $\chi^2/df$ )	(Hu & Bentler, 1999; Ullman & Bentler, 2012) $\leq 3.0$ to $<5.0$	2.88	Acceptable
<i>P-value</i>	$\leq .05$	.000	Acceptable
Root mean square error of approximation (RMSEA)	$\leq .05$	.05	Acceptable
PCLOSE	$\geq .05$	0.18	Acceptable
<b><i>Incremental Fit Measures</i></b>			
Comparative Fit Index (CFI)	(Byrne, 2005; Kline, 1998; Schumacker & Lomax, 2004) $< .90$ to $>1.0$	.926	Acceptable
Incremental Fit Index (IFI)	$< .90$ to $>1.0$	.927	Acceptable
Normed Fit Index (NFI)	$< .90$ to $>1.0$	.892	Not Achieved
Tucker Lewis Index (TLI)	$< .90$ to $>1.0$	.900	Acceptable
<b><i>Parsimony Fit Measures</i></b>			
PNFI (Parsimony of Normed Fit Index)	(Bentler & Mooijjaart, 1989; Marsh & Hau, 1996) $>.50$	.647	Acceptable
PCFI (Parsimony of Comparative Fit Index)	$>.50$	.671	Acceptable



**Figure 3**  
*Confirmatory Factor Analysis Model of the Youth Hoarding Rating Scale (YHRS)*



## Discussion

The YHRS is a valid and reliable self-report measure of adolescents' hoarding tendency in a non-western country, filling in gaps in previous hoarding measures in this age group. The current study adhered to a rigorous empirically-based scale development process (Cohen & Swerdik, 2017), emphasizing the importance of cautious item analysis by deleting YHRS items with low loadings and enhancing the validity and reliability of the YHRS factors. Factor analysis revealed a three-factor structure emphasizing three distinct hoarding tendency dimensions in samples of non-clinical adolescents: Cluttering (CL), Difficulty Discarding (D.D.), and Compulsive Acquisition (C.A.). The findings indicate that each construct has a high degree of internal consistency.

Except for the distress component, the current investigation's three-factor solution was somewhat similar to the results of Storch and Colleagues with samples from the clinical population (Storch et al., 2004) and Coles and Colleagues (Coles et al., 2003) with samples from the non-clinical population. Nevertheless, the current three-factor solution was completely consistent with the findings of Frost, Kalogeraki, Pheng, and Colleagues (Frost et al., 2004; Kalogeraki et al., 2020; Lee et al., 2016), who identified a similar three-factor structure. However, the results of these previously mentioned factor solutions were based on samples from western developed countries. And the majority of samples included individuals with diagnosed OCD, even though hoarding in children and adolescents presents differently than OCD symptoms (Burton et al., 2015; Franks et al., 2004). The YHRS demonstrates high reliability and validity and can be used as an effective supplementary screening tool for

hoarding tendency in adolescents with an administration time of approximately 10-15 minutes. It is worth noting that the YHRS adds to the existing valid and reliable hoarding measures in the younger population, particularly adolescence in non-western countries such as the Philippines. The test of difference revealed that adolescents do not differ by age, implying that hoarding tendency dimensions are comparable across the adolescent years (early, late and middle), yet there is no available data on this demographic characteristic. Additionally, when sex is considered, hoarding tendency is similar in male and female adolescents, indicating that hoarding tendency is collective. The data available on gender differences in hoarding are still unclear (Storch et al., 2011). As a result, additional research should be conducted.

The YHRS demonstrates potential as a measure of hoarding tendency in the younger population, but certain methodological limitations should be considered. To begin, while this study enrolled a sizable sample of adolescents ( $n=640$ ), the generalizability of the findings may be limited by the fact that the samples included educated Filipino adolescents enrolled in government-recognized high school institutions. It would have been ideal for including samples of out-of-school Filipino youth in the sampling, given the importance of participant diversity in research (Sugden & Moulson, 2015). Second, the current study did not examine other validity measures such as criterion-related evidence (i.e., concurrent, and predictive validity) and construct-related evidence (i.e., convergent and discriminant). Additional validity measures not included in this study are necessary to bolster the constructs produced (Strauss & Smith, 2009). As a result, future researchers should broaden the scope of current validity measures. Third, although test-retest reliability was not investigated due to the authors' time constraints, it could be explored in future studies due to its ability to improve test interpretation and design (Matheson, 2019).

Fourth, similar to Storch and colleagues' recommendation (Storch et al., 2011), a parent-report form of the YHRS would be optimal for validating adolescent responses. Additionally, developing a teacher-report version would provide additional insight into adolescents' hoarding tendencies while in school. As a result, corroborated comparisons about adolescents' hoarding tendencies at home and school would be possible. Fifth, the YHRS has not been used to determine the efficacy of hoarding treatment. With this in mind, the psychometric properties of the YHRS should be investigated in a clinical setting.

### **Conclusion**

This was the first study to develop and test the psychometric properties of a self-report measure for adolescent hoarding tendencies, which was administered to 640 nonclinical school-aged adolescents. The current study adds to the body of scientific knowledge on youth hoarding. The findings revealed an adequate level of internal consistency for the hoarding tendency dimensions (cluttering, difficulty discarding and compulsive acquisition). Considering cross-cultural implications, the Youth Hoarding Rating Scale (YHRS) is a valid and reliable tool for initially assessing adolescents for hoarding tendencies in the Philippines. It is intended to be used in conjunction with the Saving Inventory-Revised as a supplemental

measure (SI-R). While this study has limitations; it provides significant findings that will aid in the early identification of adolescents at risk of hoarding and thus aid in the prevention of the problem from worsening. The factor structure and other psychometric properties must be evaluated using an adolescent clinical sample.

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