

**Repetitive negative thinking as a mediator between experiential avoidance and  
emotional distress amongst students at a South African university**

by

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Dissertation (in article format) submitted in partial fulfilment of the requirements for the  
degree

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**Declaration by Language Editor**

18 October 2021

**Statement by language editor**

Accept herewith my declaration that I language edited a Master's degree dissertation/article authored by Kimberley Mariah Munsamy with the title:

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### **Note to the Examiner**

The examiner is hereby informed of the student's intention to submit this dissertation (in article format) to the *Journal of Psychology in Africa* for publication. For this reason, the student has followed the formatting and referencing guidelines contained in the seventh edition of the American Psychological Association's Publication Manual (7<sup>th</sup> Edition) as prescribed by the journal. The "Instructions for authors" for the *Journal of Psychology in Africa* have been included as Appendix A. The article currently exceeds the maximum length stipulated by the guidelines of the journal. This was necessitated by the primary purpose of the article, which is to demonstrate adequate research competence towards the partial fulfilment of the aforementioned degree.

The student also wishes to draw the examiner's attention to the Ethics clearance letter, attached as Appendix B. The letter cites the title of the research study as *Psychological flexibility as a mediator between repetitive negative thinking and emotional distress amongst students at a South African university*. However, the title of the article has subsequently been amended as a result of more in-depth engagement with the literature and data. No changes were made with respect to the methods of participant recruitment, informed consent procedures, management strategies for possible adverse events, measuring instruments used or data collection procedures.

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### **Abstract**

University students appear to report greater emotional distress than the general population. Experiential avoidance has been found to contribute to the development and exacerbation of emotional distress. Moreover, repetitive negative thinking may influence the relationship between experiential avoidance and emotional distress. However, no study has investigated the interaction of these variables amongst South African students. The current study thus sought to investigate (i) whether repetitive negative thinking mediates the relationship between experiential avoidance and emotional distress, and (ii) whether gender differences and/or educational status impact this interaction. Participants were 419 undergraduate students at a large public university in South Africa (Female=75.2%, First-generation students=37.5%). Participants completed measures of experiential avoidance, emotional distress, rumination, and worry. No significant differences were found with respect to emotional distress, experiential avoidance, or repetitive negative thinking across gender or educational status. Experiential avoidance and repetitive negative thinking accounted for 60.8% of the variance in emotional distress. Rumination emerged as the strongest predictor of experiential avoidance. Repetitive negative thinking partially mediated the relationship between experiential avoidance and emotional distress. Implications of these findings for mental health are discussed and areas for future research are identified.

**Keywords:** University students, emotional distress, experiential avoidance, repetitive negative thinking, mediation, rumination, worry

## 1. Introduction

Studies indicate that approximately a third of university students, both internationally and in South Africa, experience emotional distress (ED; Auerbach et al., 2018; Bantjes et al., 2019). Further, students appear to report greater ED than the general population (Ibrahim et al., 2013; Naser et al., 2020). This may be attributed to psychosocial stressors which specifically affect students such as the pressure to succeed and meet parental expectations, adjustment difficulties, and navigating the work-life balance (Babakova, 2019; Farrer et al., 2016; McCarthy et al., 2018). Students also face academic stressors like time management, writing examinations, and completing assignments (Babakova, 2019; Farrer et al., 2016; McCarthy et al., 2018).

Students from disadvantaged backgrounds tend to report greater ED than students from more advantaged backgrounds (Pillay et al., 2020; Spengler, 2019; Stebleton et al., 2014). In addition to the psychosocial and financial stressors discussed above, students from disadvantaged backgrounds face additional difficulties which contribute to their elevated ED (Kasayira et al., 2007; Masehela, 2018; Williams, 2012). These include practical concerns such as obtaining adequate funding for tuition, accommodation, and transport, as well as food insecurity due to a lack of economic stability (Masehela, 2018; Mudhovozi, 2011; Sabi et al., 2020; Van den Berg & Raubenheimer, 2015). In contrast to students from more advantaged backgrounds, students from disadvantaged backgrounds may also experience impediments to their sense of belonging due to institutional factors such as the university culture and unsatisfactory institutional support structures (Means & Pyne, 2017; Williams, 2012). Some researchers have attributed the higher incidence of ED amongst these students to the long-term effects of societal inequality and the pressure of being first-generation students (Jenkins et al., 2013; Noel et al., 2021; Young & Campbell, 2014).

Due to the Covid-19 pandemic, authorities worldwide instituted restrictions to curb the spread of the virus. In South Africa, restrictions followed the *Disaster Management Act* 57 of 2002 (Department of Co-operative Governance and Traditional Affairs, 2020a; 2020b). This included the closure of universities and the introduction of distance learning during the official lockdown period. The Covid-19 pandemic has led to an increase in ED amongst university students worldwide (Kecojevic et al., 2020; Wieczorek et al., 2021; Zis et al., 2021). Within the South African context, Naidoo and Cartwright (2020) posit that students may experience various psychological difficulties. These include grief and trauma associated with losing loved ones to Covid-19, fear or apprehension about the pandemic's effect on academics, and difficulties with time management and self-regulation due to disruption of daily routines. It has been reported that students who are female, come from rural areas or low-income households, are academically at risk, and who are worried about family members contracting Covid-19, are at greater risk of developing ED (Alam et al., 2021; J. Lee et al., 2021). In addition, the transition to online learning excludes students from disadvantaged backgrounds as this necessitates access to laptop computers, a stable internet connection, sufficient mobile data, and a consistent electricity supply (Hedding et al., 2020).

### **Experiential avoidance**

Experiential avoidance (EA) refers to the unwillingness to remain in contact with distressing internal experiences such as thoughts, feelings, memories, and physical sensations (S. C Hayes et al., 2011; Hayes-Skelton & Eustis, 2020). EA has been shown to be a transdiagnostic factor in the development and maintenance of ED (Machell et al., 2015; Schut & Boelen, 2017). When people engage in EA, they tend to treat inner experiences as external events, employing behaviours that they would have used to respond to external events in attempts to avoid or change their inner experiences (Kashdan et al., 2006; Malicki & Ostaszewski, 2014). In the short term, this brings about relief from unwanted experiences.

However, long-term effects include sustained and intensified use of such behaviours with the aim of regulating internal experiences (S. C. Hayes et al., 2011; Hayes-Skelton & Eustis, 2020). This impacts effective responding to external events and impedes the ability to take action towards valued living (S. C. Hayes et al., 2011; Hayes-Skelton & Eustis, 2020; Malicki & Ostaszewski, 2014). Avoided and suppressed experiences also lead to feelings of inauthenticity and disconnection from oneself, as well as hindering full immersion in positive experiences (John & Gross, 2004).

EA has been found to be positively correlated with ED in the general population (Fernández-Rodríguez et al., 2018; Malicki & Ostaszewski, 2014; Spinhoven et al., 2014). The antithesis of EA is psychological flexibility. This refers to contacting the present moment and private experiences, directing behaviour towards the service of personal values and engaging in a meaningful life (S. C. Hayes et al., 1996; S. C. Hayes et al., 2011). Research has demonstrated that, by reducing EA and thereby increasing psychological flexibility, outcomes for various mental health concerns such as depression, social anxiety, generalised anxiety, borderline personality, and stress, may be improved (Brinkborg et al., 2011; Bryan, et al., 2015; Gratz & Gunderson, 2006; S. C. Hayes et al, 2010; Kocovski et al., 2009). EA is also associated with increased ED among university students (Chou et al., 2018; Kroska et al., 2017; Tavakoli et al., 2019). Within the South African context, Spengler (2019) found that EA was positively correlated with ED amongst students. Moreover, EA mediated the relationship between perceived stress and ED irrespective of demographic variables such as socioeconomic status (Spengler, 2019).

### **Repetitive negative thinking**

Repetitive negative thinking (RNT) refers to recurrent thinking about negative experiences (Ehring & Watkins, 2008; Ehring et al., 2011). RNT is understood to be

unproductive, difficult to disengage from, and occupies one's mental capacity (Ehring & Watkins, 2008; Ehring et al., 2011). RNT is a transdiagnostic process consistently implicated in the development and maintenance of ED (Calmes & Roberts, 2007; McEvoy et al., 2013). RNT has been shown to predict depression and anxiety (Calmes & Roberts, 2007; Michl et al., 2013; Ryum et al., 2017). This positive relationship between RNT and ED has also been demonstrated amongst university students both internationally and in South Africa (Bottesi et al., 2018; Giorgio et al., 2010; Makhanya, 2017; Pretorius et al., 2015).

Within the EA context, RNT may be considered an avoidance strategy which serves to prolong negative emotions, thereby sustaining and exacerbating ED (Dereix-Calonge et al., 2019; Ruiz et al., 2020; Ruiz et al., 2016). Previous research has found that individuals who report higher levels of EA and RNT experience greater ED (Bjornsson et al., 2010; Giorgio et al., 2010; Tavakoli et al., 2019). In addition, reduction in RNT has been associated with a reduction in symptoms of anxiety and depression (Hijne et al., 2020). The above findings indicate that RNT and EA may hold importance in understanding ED. RNT is commonly viewed as comprising rumination and worry (Nolen-Hoeksema & Davis, 1999; Watkins & Teasdale, 2001).

## **Rumination**

Rumination may be defined as past- or present-oriented repetitive thought patterns about dysphoria (LeMoult & Gotlib, 2019; Nolen-Hoeksema et al., 2008). Rumination carries with it conscious motives to develop understanding, insight and problem-solving as well as non-conscious motives to avoid aversive situations and the responsibility to act (LeMoult & Gotlib, 2019; Nolen-Hoeksema et al., 2008). The Rumination Response Theory proposes that rumination enhances the effects of negative mood on thinking, thus making problem-solving difficult (Nolen-Hoeksema et al., 2008; Nolen-Hoeksema, 1991). Rumination may also affect

instrumental behaviours and can lead to a loss of social support (Nolen-Hoeksema et al., 2008; Nolen-Hoeksema, 1991). These mechanisms increase an individual's vulnerability to the development and exacerbation of ED.

Numerous studies have demonstrated that rumination is a central maintaining factor in ED and that a bidirectional recursive relationship exists between rumination and ED (Burke et al., 2016; McLaughlin & Nolen-Hoeksema, 2011; Polanco-Roman et al., 2016; Whisman et al., 2020). Amongst university students, both internationally and in South Africa, a correlation has consistently been found between rumination and ED (Giorgio et al., 2010; Makhanya, 2017; Moulds et al., 2007). The relationship between rumination and ED may not be uniform across individuals and contexts. For example, gender has been found to impact rumination, with women reporting higher rates of rumination than men (Johnson & Whisman, 2013; Moulds et al., 2007; Polanco-Roman et al., 2016).

Previous research has found that an interaction effect exists between rumination and EA in predicting ED (Bjornsson et al., 2010; Giorgio et al., 2010; Morina, 2011). High rumination in combination with increased EA has been associated with an increase in ED (Bjornsson et al., 2010; Giorgio et al., 2010). It has been hypothesised that rumination is employed as an avoidance strategy in EA (Giorgio et al., 2010; Liverant et al., 2011; Ruiz et al., 2016). Employing rumination as an avoidance strategy negatively impacts problem-solving and the use of more adaptive strategies in responding to unwanted experiences (Giorgio et al., 2010). Individuals who are unwilling to remain in contact with distressing internal experiences may ruminate to a greater degree (Bjornsson et al., 2010; Giorgio et al., 2010). Rumination, functioning as an attempt to avoid distressing experiences through repetitive thought, may then exacerbate ED (Bjornsson et al., 2010; Dickson et al., 2012; Giorgio et al., 2010; Morina, 2011). Consequently, rumination may be an important mechanism through which EA results in the maintenance and exacerbation of ED.

## **Worry**

Worry is defined as primarily future-oriented repetitive thoughts associated with negative affect (Borkovec et al., 1998; Wells, 2005). Worry carries with it the conscious motive of anticipating and preparing for threats and the non-conscious motive of avoidance in confronting negative affect and aversive images (Borkovec et al., 1998; Wells, 2005). The Cognitive Avoidance Theory of worry posits that worry functions as an avoidance response to perceived threats and emotional arousal, providing a false sense of control over experiences (Borkovec et al., 2004; Sexton & Dugas, 2009; Sibrava & Borkovec, 2006). Worry thereby prevents the emotional processing of aversive experiences as well as effective responding to events (Borkovec et al., 2004; Sexton & Dugas, 2009; Sibrava & Borkovec, 2006). Through this process, worry contributes to the development and exacerbation of ED (Borkovec et al., 2004; Sexton & Dugas, 2009; Sibrava & Borkovec, 2006).

Previous research has demonstrated that worry is a transdiagnostic process implicated in the development and maintenance of ED (Bauer et al., 2020; Ryum et al., 2017). A correlation has consistently been found between worry and ED amongst university students, as well as in clinical populations (Bottesi et al., 2018; Hirsch et al., 2013; Kumar et al., 2019; Ryum et al., 2017; Yang et al., 2014). Similar to rumination, gender differences in worry have been reported among university students, both internationally and in South Africa (Bottesi et al., 2018; Pretorius et al., 2015).

Worry is thought to promote EA by functioning as a means of controlling or avoiding unpleasant experiences (S. C. Hayes et al., 2006; S. C. Hayes et al., 1996). As in the case of rumination, worry prevents more adaptive responding to aversive experiences through a narrowing of behavioural repertoires and disengagement from value-driven behaviour (Borkovec et al., 1998; Newman & Llera, 2011; Ruiz et al., 2019). Individuals who are

unwilling to remain in contact with distressing internal experiences may worry to a greater degree (Akbari & Khanipour, 2018; J. K. Lee et al., 2010; Tavakoli et al., 2019). Tavakoli et al. (2019) found that greater worry is associated with higher EA, suggesting that individuals who engage in excessive worry experience difficulty in detaching from symptoms and respond ineffectively to external situations. Further, excessive worry and greater EA have been tied to higher ED, suggesting that worry may be an important mechanism through which EA results in the development and exacerbation of ED (Tavakoli et al., 2019). In addition, employing worry as an avoidance strategy may result in the development or exacerbation of risk factors associated with clinically significant levels of ED (Akbari & Khanipour, 2018; Tavakoli et al., 2019). Previous research suggests that disrupting worry hinders EA strategies and consequently ED, thus enabling greater engagement in more value-driven behaviours (Gil-Luciano et al., 2019; Ruiz et al., 2016).

## **2. Goal of the study**

University students report high rates of ED (Auerbach et al., 2018; Bantjes et al., 2019). This seems to be exacerbated among first-generation students (Jenkins et al., 2013; Noel et al., 2021). In addition, societal changes associated with the Covid-19 pandemic, specifically changes in the higher education environment have resulted in increased ED amongst students (Kecojevic et al., 2020; Wieczorek et al., 2021; Zis et al., 2021). EA is associated with increased ED (Chou et al., 2018; Kroska et al., 2017; Spengler, 2019). Furthermore, RNT such as rumination and worry, are predictive of both EA and ED (Dereix-Calonge et al., 2019; Ruiz et al., 2020; Ruiz et al., 2016). However, few studies have sought to investigate whether RNT mediates the relationship between EA and ED among students and no such studies have been conducted in South Africa.



The primary aim of the current study is thus to investigate whether RNT mediates the relationship between EA and ED. Given that gender differences have been reported with respect to RNT and that first-generation students appear to be at increased risk of ED, the study will also aim to determine whether gender or educational status (first generation versus non-first-generation) impact the relationship between EA, ED, and RNT.

### 3. Methodology

#### Participants and setting

The sample comprised undergraduate students from a large public university in South Africa. Despite being enrolled at the time of data collection, first-year students were excluded as potential participants. Due to their relatively brief exposure to the higher education environment at the time of data collection, it was judged that these students had limited experience with the stressors accompanying university life. Based on the university undergraduate population of 34822 (University of the Free State, 2020) and applying a confidence interval of 95% ( $Sample\ Size = \frac{z^2 \times p(1-p)}{1 + \frac{z^2 \times p(1-p)}{e^2 n}}$ ), a minimum of 380 participants was required to ensure adequate statistical power for the proposed analyses (Neuman, 2011). The final sample comprised 419 participants (Female=75.2%, Male=24.3%, Nonbinary=0.5%). Most participants were in their second (41.3%) or third (41.8%) year of study. Individuals who identified as first-generation students comprised 37.5% of the sample.

#### Measuring instruments

The seven anxiety-related items and seven depression-related items on the *General Health Questionnaire (GHQ; Goldberg & Hiller, 1979)* served as a measure of ED. The GHQ employs a four-point Likert-type scale with responses ranging from *not at all* to *much more than usual*. Responses across all 14 items were summed to produce a measure of ED,

with higher scores indicating greater ED. The combined anxiety and depression subscales of the GHQ have been found to have an internal consistency coefficient of 0.88 in a sample of South African university students (Spengler, 2019).

The Ruminative Response Scale (Nolen-Hoeksema, 1991) and the Penn State Worry Questionnaire (Meyer et al., 1990) were employed as measures of RNT.

*The Ruminative Response Scale (RRS; Nolen-Hoeksema, 1991)* is a 22-item measure of rumination which employs a four-point Likert-type scale with responses ranging from *almost never* to *almost always*. Responses across all items were summed to calculate a total rumination score, with higher scores indicating greater rumination. An internal consistency coefficient of 0.82 has been reported for the RSS in a sample of South African university students (Makhanya, 2017).

*The Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990)* is a 16-item measure of worry that elicits responses along a five-point Likert-type scale anchored by *not at all typical of me* and *very typical of me*. A total worry score was calculated by summing responses across all 16 items, with higher scores indicating greater worry. Pretorius et al. (2015) reported an internal consistency coefficient of 0.81 for the PSWQ in a sample of South African university students.

*The Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011)* was employed as a measure of EA. The AAQ-II is a 7-item measure that employs a seven-point Likert-type scale with response options ranging from *never true* to *always true*. A total EA score is calculated by summing responses across all 7 items. Higher scores indicate greater EA. Spengler (2019) reported an internal consistency coefficient of 0.89 for the AAQ-II in a sample of South African university students.

## **Procedure**

Ethics clearance for the study was obtained from the General Human Research Ethics Committee (GHREC) at the UFS (UFS-HSD2020/1523/0812; See Appendix B). A non-experimental cross-sectional design was employed where a one-time survey was employed to collect data (Neuman, 2011). Prospective participants were sent a recruitment email with a link to access the survey via an institutional online system. Individuals were asked to read through information pertaining to the study and provide informed consent before participating in the survey (See Appendix C). Participants were able to access the survey during a two-week period.

## **Data analysis**

To determine the internal consistency of the measuring instruments, Cronbach alpha-coefficients were calculated for each instrument. Mean scores and standard deviations were also calculated for the measures of EA, RNT, and ED. Pearson's product-moment correlations were calculated to determine the significance of relationships between EA, RNT, and ED. A between-groups multivariate analysis was conducted with respect to gender and educational status to identify possible significant differences regarding EA, RNT and ED. Ordinary Least Squares (OLS) regression analyses were then employed to test the potential mediating effect of RNT on the interaction between EA and ED. Analyses were conducted using the Statistical Package for the Social Sciences (SPSS; IBM Corp, 2019) and the PROCESS Macro for SPSS (A. F. Hayes, 2020).

## **4. Results**

### **Descriptive statistics and correlations**

As is apparent from Table 1, all four measuring instruments exhibit good internal consistency, with reliability coefficients ranging from 0.91 for the GHQ and the AAQ-II to

0.92 for the PSWQ and 0.94 for the RRS. Measures of skewness and kurtosis revealed no outliers or violations of assumptions.

Table 1 indicates that the study variables all exhibited statistically significant positive correlations to one another. Moreover, all correlation coefficients are indicative of medium to large effect sizes (Cohen, 1992). Consequently, EA can be said to have a moderate positive linear relationship with ED, while rumination shares a strong positive linear relationship with both EA and ED. Worry demonstrates a moderate positive linear relationship with EA and with ED.

**Table 1**

*Reliabilities, correlations, and distribution of the study variables*

	Emotional distress	Rumination	Worry	Experiential avoidance
Experiential avoidance	0.658**	0.712**	0.594**	-
Worry	0.554**	0.553**	-	
Rumination	0.752**	-		
$\alpha$	0.91	0.94	0.92	0.91
$M$	16.99	52.14	58.05	27.89
$SD$	9.79	14.77	14.39	12.15
Range	0 - 42	22 - 83	17 - 80	7 - 49
Kurtosis	-0.495	-0.871	-0.339	-1.162
Skewness	0.439	0.014	-0.550	0.012

Note. \*\*  $p < .001$

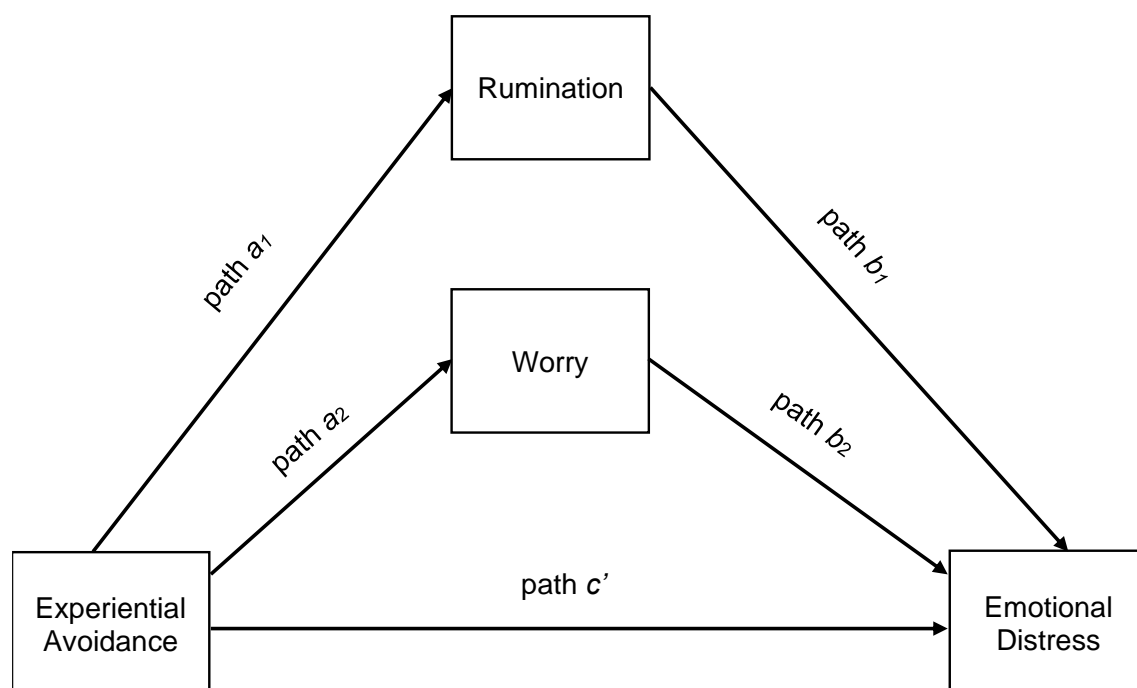
Key: Emotional distress= General Health Questionnaire (GHQ); Rumination= Rumination Response Scale (RRS); Worry= Penn State Worry Questionnaire (PSWQ); Experiential avoidance= Acceptance and Action Questionnaire-II

Based on the literature on EA, ED and RNT reviewed earlier in this manuscript, it is hypothesised that the relationship between the EA that students in the current sample report

and the ED that they experience is mediated by the extent to which they engage in rumination and/or worry. Figure 1 provides a representation of this conceptual model. Within the model, EA is proposed to influence rumination (path  $a_1$ ), which in turn could affect ED (path  $b_1$ ). Thus, EA is thought to indirectly influence ED through rumination by path  $ab_1$ . Further, EA is proposed to influence worry (path  $a_2$ ), which may affect ED (path  $b_2$ ). Therefore, EA may indirectly influence ED through worry by path  $ab_2$ . As proposed in the model, when RNT is kept constant, EA is thought to directly influence ED (path  $c'$ ).

**Figure 1.**

*Conceptual parallel mediation model using the mediating effect of rumination and worry in the relationship between EA and ED*



### Tests for differences in gender and educational status

Previous studies have reported statistically significant differences in the levels of rumination and worry reported by males and females (Polanco-Roman et al., 2016; Pretorius

et al., 2015). Similarly, first-generation students have been reported to experience higher levels of ED compared to other students (Jenkins et al., 2013; Noel et al., 2021).

Consequently, a between-groups multivariate analysis of variance (MANOVA) was performed to investigate gender (male and female) and educational status (first-generation students and non-first-generation students) differences in ED, EA, rumination, and worry. In order to reduce the likelihood of a Type 1 error, a Bonferroni adjusted level of significance of 0.014 (0.05 divided by the number of dependent variables) for this analysis was set (Tabachnick & Fidell, 2007). Given that only two participants did not identify as either male or female, these individuals were excluded from the analysis.

Preliminary testing did not reveal any serious violations of assumptions of normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance and multicollinearity. The MANOVA did not indicate a statistically significant difference between the male and female participants on the combined dependent variables (EA, ED, rumination and worry) [ $F(4, 410) = 2.373, p = 0.052$ ; Wilks' Lambda = 0.977; partial eta squared = 0.023.]. Similarly, no significant difference was found between first-generation students and non-first-generation students on the combined dependent variables [ $F(4, 410) = 1.650, p = 0.161$ ; Wilks' Lambda = 0.984; partial eta squared = 0.016]. In addition, no significant interaction (gender\*educational status) effect was found [ $F(4, 410) = 1.938, p = 0.103$ ; Wilks' Lambda = 0.981; partial eta squared = 0.019]. Consequently, the conceptual mediation model proposed in Figure 1 was only tested for the total sample as there appeared to be no basis for testing the model separately for gender or educational status.

### **Mediation model**

A bias-corrected bootstrapping procedure described by A. F. Hayes (2017) was used to test whether rumination and/or worry mediate the interaction between EA and ED in the current sample. The direct and indirect effects of EA on ED were investigated by regressing

the proposed mediators on EA (rumination = path  $a_1$ ; worry = path  $a_2$ ), while ED was regressed on rumination (path  $b_1$ ) and worry (path  $b_2$ ). ED was also regressed on EA (via rumination and worry = path  $c'$ ). The results of the regression analysis are reported in Table 2.

**Table 2**

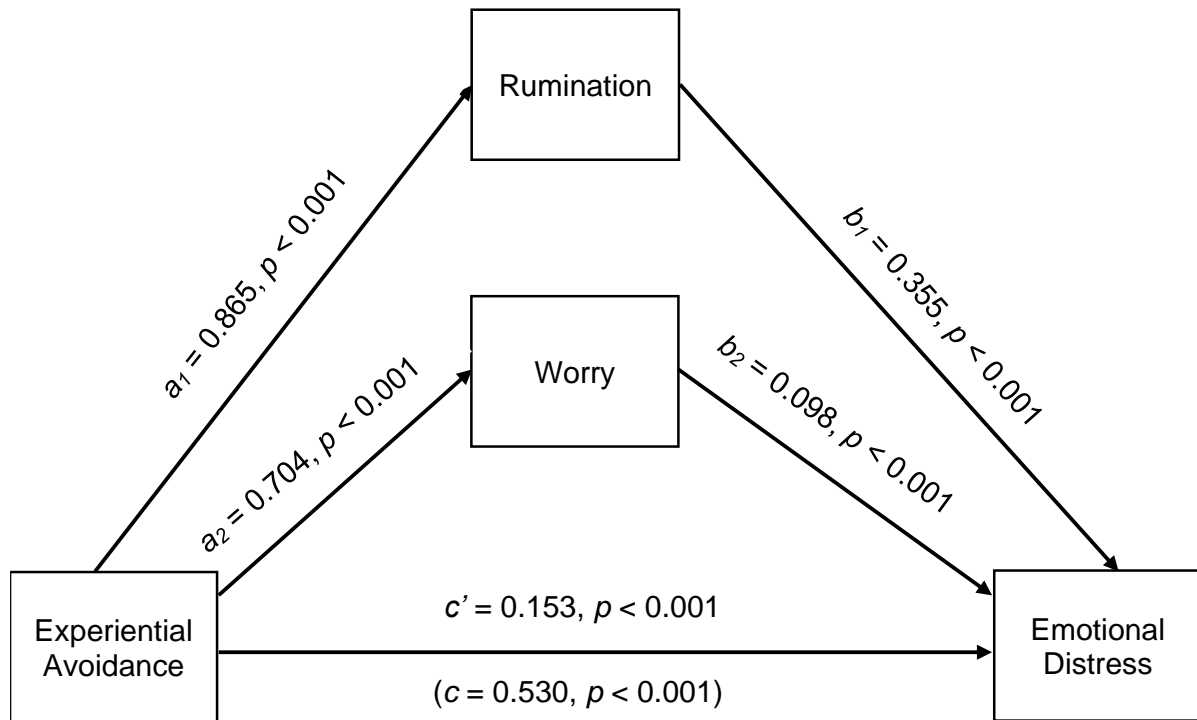
*Regression model coefficients for EA, rumination and worry as predictors of ED ( $n = 417$ )*

	Emotional Distress						
	$b$	$\beta$	$SE$	$p$	$F$	$dfs$	$R^2$
Full model	-	-	-	<0.001	214.769	3; 415	0.608
Experiential Avoidance	0.153	0.190	0.037	<0.001	-	-	-
Rumination	0.355	0.536	0.030	<0.001	-	-	-
Worry	0.098	0.145	0.027	<0.001	-	-	-

It is evident from Table 2 that EA, rumination and worry jointly explain 60.8% of the variance in the ED scores of the current sample of university students. All three independent variables are statistically significant predictors of ED. However, when viewed in relation to EA ( $\beta = 0.190$ ,  $p < 0.001$ ) and worry ( $\beta = 0.145$ ,  $p < 0.001$ ), rumination ( $\beta = 0.536$ ,  $p < 0.001$ ) appears to explain a greater proportion of the variance in the students' ED.

**Figure 2.**

*The mediating effect of rumination and worry in the relationship between EA and ED*



Note: All effects are presented as unstandardised;  $a_1$  is the effect of EA on rumination and  $a_2$  is the effect of EA on worry;  $b_1$  is the effect of rumination on ED and  $b_2$  is the effect of worry on ED;  $c'$  is the direct effect of EA on ED and  $c$  is the total effect of EA on ED.

The parallel mediation analysis depicted in Figure 2 indicates that EA is indirectly associated with ED via two forms of RNT (rumination and worry). In the current sample EA is positively related to rumination ( $a_1 = 0.865, p < 0.001$ ) and rumination is, in turn, positively associated with increased ED ( $b_1 = 0.355, p < 0.001$ ). Similarly, EA is positively associated with worry ( $a_2 = 0.704, p < 0.001$ ), which subsequently is related to an increase in ED ( $b_2 = 0.098, p < 0.001$ ). A 95% bias-corrected confidence interval based on 5000 bootstrap samples indicated that the indirect effects through rumination ( $a_1b_1 = 0.307$ , 95% CI [0.253, 0.363]) and worry ( $a_2b_2 = 0.069$ , 95% CI [0.003, 0.105]) were both entirely above



zero. In addition, EA resulted in increased ED even when taking the indirect effect of both forms of RNT into account ( $c' = 0.153, p < 0.001$ ). It thus appears as though both rumination and worry partially mediate the effect of EA on ED in the current sample of university students.

## 5. Discussion

The current study sought to investigate whether RNT mediates the relationship between EA and ED. A further aim was to identify whether gender and/or educational status impact the relationship between EA, ED, and RNT.

The mean level of ED reported by participants in the current study was higher than has been reported for students in developed countries and is consistent with previous reports of elevated rates of ED amongst people in developing countries (Cifuentes et al., 2008; Kostić et al., 2021; Peltzer & Pengpid, 2015; Saleh et al., 2017). Within the current study, mean scores on rumination reported by the South African sample are similar to those reported by other student populations (Hasegawa et al., 2018; Piraman et al., 2016). However, participants in the current study reported higher levels of worry than other student populations (Akbari & Khanipour, 2018; Kircanski et al., 2018; Raes, 2010). This may be partly due to less favourable socioeconomic conditions compared to those experienced by students in the developed world, as income inequality and socioeconomic disparities have been related to increased worry (De Bruijn & Antonides, 2020; Roth et al., 2017). However, this finding might also be attributed to the broader uncertainty and anxiety associated with the Covid-19 pandemic (Mayorga et al., 2021; O'Connor et al., 2021). The current study found that the South African sample reported greater mean scores on EA than other student populations (Chou et al., 2018; Ruiz et al., 2016). In comparison to students from developed countries, students from developing countries appear to report greater mean scores on EA (Chou et al., 2018; Monestès et al., 2018; Paladines-Costa et al., 2021; Szabó et al., 2011).

Individuals from developing countries face a context of financial difficulty, political instability, and barriers to the utilisation of mental health care services, which may contribute to greater ED (Altaf et al., 2015; Lund & Cois, 2018; Umubyeyi et al., 2016). Previous research has indicated that greater ED is linked to higher rates of EA (Chou et al., 2018; Kroska et al., 2017; Tavakoli et al., 2019). Therefore, it is possible that the contextual and socioeconomic factors associated with developing countries may primarily be responsible for the elevated levels of both ED and EA reported by their students. However, further research is needed to support this argument.

EA was shown to have a positive association with ED. This finding is supported by research demonstrating a positive relationship between EA and ED amongst students internationally (Chou et al., 2018; Kroska et al., 2017; Levin et al., 2014; Tavakoli et al., 2019). Furthermore, Spengler (2019) reported a positive correlation between EA and ED among South African university students. Similarly, current findings of a positive correlation between rumination and EA, as well as between worry and EA are consistent with data across student populations internationally (Akbari & Khanipour, 2018; Bjornsson et al., 2010; Giorgio et al., 2010; Tavakoli et al., 2019). The positive correlations found between both forms of RNT and ED are in line with the international literature on ED among university students (Bottesi et al., 2018; Giorgio et al., 2010; Kumar et al., 2019; Makhanya, 2017; Moulds et al., 2007; Ryum et al., 2017; Tavakoli et al., 2019).

The existing literature appears inconclusive with respect to gender differences in RNT. Several studies suggest that gender differences do exist with regards to RNT (Johnson & Whisman, 2013; Moulds et al., 2007; Polanco-Roman et al., 2016; Pretorius et al., 2015; Ryum et al., 2017), while others have not found gender to be predictive of RNT (Akbari & Khanipour, 2018; Giorgio et al., 2010; Lawrence et al., 2018). The finding of no significant gender effect for RNT in the current study is more in line with the latter. However, the

current sample was predominantly comprised of female students. Further research is required before any conclusions can be drawn with respect to the interaction between gender and RNT within the current population. Moreover, conceptualising rumination as a unitary construct may have masked gender differences that have previously been reported with respect to the brooding and reflection components of rumination (Johnson & Whisman, 2013; Moulds et al., 2007; Polanco-Roman et al., 2016).

Research has indicated that first-generation students may experience greater ED (Jenkins et al., 2013; Noel et al., 2021). However, this was not supported within the current study. This may be attributed to the Covid-19 pandemic, which has affected the academic environment, no longer exposing students to institutional factors thought to contribute to ED. Relocation of students from residences may have alleviated financial stress and increased social support, serving as protective factors against ED (Azmitia et al., 2018; House et al., 2020; Williams, 2012). Further, first-generation students and their counterparts may experience shared difficulties associated with the pandemic (Naidoo & Cartwright, 2020) accounting for similar self-reports of ED. Similarly, the current study found no significant difference between educational status and EA. Previous research has found no difference between students from historically disadvantaged population groups and their counterparts on EA (Merwin et al., 2009; Tavakoli et al., 2019).

No significant difference was observed between educational status and RNT, suggesting that both first-generation and non-first-generation students ruminate and worry to a similar degree. However, the exclusion of first-year students may have prevented group differences from emerging. Previous research has demonstrated that older students and students in later years of study engage in more active coping and resilience strategies than first-year students (Babicka-Wirkus et al., 2021; Van der Merwe et al., 2020).

Within the current study, it was found that EA, worry and rumination together account for 60.8% of the variance in ED. Engaging in EA and RNT thus appears to significantly contribute towards the ED these individuals experience. This finding is consistent with previous studies (Akbari & Khanipour, 2018; Bjornsson et al., 2010; Giorgio et al., 2010). Within the current study, rumination made a greater contribution to the prediction of ED than either EA or worry. This finding complements existing research demonstrating the role of rumination in predicting ED (Hong, 2007; Hughes et al., 2008; Kircanski et al., 2018; Roelofs et al., 2008; Spinhoven et al., 2018). Moreover, previous research has found that rumination correlates more strongly with ED than worry does and is a better predictor of relapse in both anxiety and depression (Hughes et al., 2008; Spinhoven et al., 2018).

The parallel mediation analysis demonstrated that RNT partially mediated the relationship between EA and ED. This finding indicates that RNT interacts with EA to produce greater ED, and is consistent with previous research (Bjornsson et al., 2010; Giorgio et al., 2010; Tavakoli et al., 2019). Within the current study, rumination mediated the relationship between EA and ED whereby increases in EA produced increases in rumination and subsequently contributed to greater ED. This is consistent with previous research where statistically significant interaction effects were found between EA, rumination, and ED (Bjornsson et al., 2010; Giorgio et al., 2010). Within these studies, greater rumination has been found to result in an increase in EA and has been associated with an increase in ED (Bjornsson et al., 2010; Giorgio et al., 2010). Further, the role of rumination supports Bjornsson et al. (2010) who found that, when rumination is high, an increase in EA is associated with an increase in ED. Within the current study, similar interaction effects were found between EA, worry and ED whereby increases in EA result in increases in worry and greater ED. This is consistent with previous studies which indicate that individuals who tend

to avoid or control internal experiences worry more (Akbari & Khanipour, 2018; S. C. Hayes et al., 2006; J. K. Lee et al., 2010). Further, this finding is supported by Tavakoli et al. (2019) who found that EA was positively associated with anxious symptomology, including worry. Worry's contribution in predicting ED has been demonstrated across student populations (Bauer et al., 2020; Ryum et al., 2017). The role of RNT in EA and ED appears to provide support to Ruiz et al. (2016) who suggest that RNT is a maladaptive EA strategy that serves to increase ED. Additionally, the role of RNT in the interaction between EA and ED provides support for interventions which aim to reduce ED through disrupting RNT and facilitating the acceptance of experiences (Dereix-Calonge et al., 2019; Ruiz et al., 2016; Ruiz et al., 2018). Within the current study, the partial mediation demonstrates that EA predicts ED indirectly through RNT, as well as having a direct effect on ED when RNT is controlled for. The partial mediation suggests the need for further investigation into other potential mediators in the relationship between EA and ED.

## 6. Limitations and implications for future research

The limitations of the study may provide guidance towards future research. This study was conducted amongst a student population from a large public university in South Africa. Consequently, the findings cannot be generalised beyond this particular context. Due to the cross-sectional and correlational nature of the study, causality cannot be implied. Future research may follow a longitudinal or intervention approach to determine the potential causal nature of the interaction between EA, RNT and ED. First-year university students were excluded from the study. First-year students may be less well-adjusted than students who have had sufficient experience to adapt within the higher education environment. In addition to the financial difficulties experienced by all students, first-year students report feeling overwhelmed, experiencing fear of failure, and experiencing a lack of social support (Pillay

& Ngcobo, 2010; Villatte et al., 2017). Therefore, inclusion of first-year students in future studies may provide a different picture.

As mentioned previously, the current study focused on total rumination rather than subtypes of rumination. Previous research has indicated that females report engaging more in brooding and reflection than men (Johnson & Whisman, 2013; Moulds et al., 2007; Polanco-Roman et al., 2016). Thus, future research could investigate whether subtypes of rumination impact EA and ED differently across gender. Similarly, the high proportion of female participants may have precluded any gender differences from emerging with respect to EA, ED and RNT. The study should be replicated in a more representative sample. Given that a partial mediation was found between EA, RNT, and ED, future research could investigate other variables which may influence this relationship. For instance, mindfulness has been demonstrated to play a role in reducing EA and RNT, as well as being correlated with lower ED (Delgado-Pastor et al., 2015; McCluskey et al., 2020; Parsons et al., 2019; Schut & Boelen, 2017). While this study has contributed to the literature on EA, RNT, and ED amongst South African students, further investigation is needed regarding the practical application of interventions aimed at addressing RNT and facilitating acceptance of experiences.

## **7. Conclusion**

The current study found that EA, rumination, worry, and ED were all significantly related to each other. Moreover, rumination was a stronger predictor of ED than either EA or worry. This finding highlights rumination's role in ED whereby rumination enhances the effects of negative mood on thinking, makes problem solving difficult, and affects instrumental behaviour, thus contributing to greater ED. Gender and educational status did not emerge as significant predictors of EA, rumination, worry, and ED. As RNT was found to

interact with EA and produce greater ED, this would seem to suggest that ED may be at least partly dependent on the extent to which individuals engage in forms of RNT. Further, this provides support for interventions which aim to reduce ED through disrupting RNT and facilitating the acceptance of experiences. The partial mediation of RNT between EA and ED suggests the need for further research to investigate other potential factors which may impact this relationship. However, findings from the current study address the gap in literature concerning EA, RNT, and ED amongst a South African student population and may inform interventions aimed at providing support to individuals within the higher education environment.

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## Appendix A

### Instructions for authors: Journal of Psychology in Africa

# Instructions for authors

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## Manuscripts

Manuscripts should be written in English and conform to the publication guidelines of the latest edition of the American Psychological Association (APA) publication manual of instructions for authors. Manuscripts can be a maximum of 7 000 words.

## Submission

Manuscripts should be prepared in MSWord, double spaced with wide margins and submitted via the journal's [Editorial Manager](#) system.

Before submitting a manuscript, authors should peruse and consult a recent issue of the Journal of Psychology in Africa for general layout and style.

### **Manuscript format**

All pages must be numbered consecutively, including those containing the references, tables and figures. The typescript of a manuscript should be arranged as follows:

- Title: this should be brief, sufficiently informative for retrieval by automatic searching techniques and should contain important keywords (preferably <13).
- Author(s) and Affiliation(s) of author(s): The corresponding author must be indicated. The author's respective affiliation where the work was done must be indicated. An e-mail address for the corresponding author must be provided.
- Abstract: Articles and abstracts must be in English. Submission of abstracts translated to French, Portuguese and/ or Spanish is encouraged. For data-based contributions, the abstract should be structured as follows: Objective – the primary purpose of the paper, Method – data source, participants, design, measures, data analysis, Results – key findings, implications, future directions and Conclusions – in relation to the research questions and theory development. For all other contributions (except editorials, book reviews, special announcements) the abstract must be a concise statement of the content of the paper. Abstracts must not exceed 150 words. The statement of the abstract should summarise the information presented in the paper but should not include references.
- Text: (1) Per APA guidelines, only one space should follow any punctuation; (2) Do not insert spaces at the beginning or end of paragraphs; (3) Do not use colour in text; and (4) Do not align references using spaces or tabs, use a hanging indent.
- Tables and figures: These should contain only information directly relevant to the content of the paper. Each table and figure must include a full, stand-alone caption, and each must be sequentially mentioned in the text. Collect tables and figures together at the end of the manuscript or supply as separate files. Indicate the correct placement in the text in this form <insert Table 1 here>. Figures must conform to the journals style. Pay particular attention to line thickness, font and figure proportions, taking into account the journal's printed page size – plan around one column (82 mm) or two column width (170 mm). For digital photographs or scanned images the resolution should be at least 300 dpi for colour or greyscale artwork and a minimum of 600 dpi for black line



drawings. These files can be saved (in order of preference) in PSD, PDF or JPEG format. Graphs, charts or maps can be saved in AI, PDF or EPS format. MS Office files (Word, Powerpoint, Excel) are also acceptable but DO NOT EMBED Excel graphs or Powerpoint slides in a MS Word document.

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Referencing style should follow latest edition of the APA manual of instructions for authors.

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### *Journal article*

Peltzer, K. (2001). Factors at follow-up associated with adherence with adherence with directly observed therapy (DOT) for tuberculosis patients in South Africa. *Journal of Psychology in Africa*, 11(2), 165–185.

### *Book*

Gore, A. (2006). *An inconvenient truth: The planetary emergency of global warming and what we can do about it*. Emmaus, PA: Rodale.

### *Edited book*

Galley, K. E. (Ed.). (2004). *Global climate change and wildlife in North America*. Bethesda, MD: Wildlife Society.

*Chapter in a book*

Cook, D. A., & Wiley, C. Y. (2000). Psychotherapy with members of the African American churches and spiritual traditions. In P. S. Richards & A. E. Bergin (Ed.), *Handbook of psychotherapy and religiosity diversity* (pp 369–396). Washington, DC: American Psychological Association.

*Magazine article*

Begley, S., & Murr, A. (2007, July 2). Which of these is not causing global warming? A. Sport utility vehicles; B. Rice fields; C. Increased solar output. *Newsweek*, 150 (2), 48–50.

*Newspaper article (signed)*

Landler, M. (2007, June 2). Bush's Greenhouse Gas Plan Throws Europe Off Guard. *New York Times*, p. A7.

*Unpublished thesis*

Appoh, L. (1995). The effects of parental attitudes, beliefs and values on the nutritional status of their children in two communities in Ghana (Unpublished master's thesis). University of Trondheim, Norway.

*Conference paper*

Sternberg, R. J. (2001, June). Cultural approaches to intellectual and social competencies. Paper presented at the Annual Convention of the American Psychological Society, Toronto, Canada

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At the point of submission, you will be asked if there is a data set associated with the paper. If you reply yes, you will be required to provide the DOI, pre-

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- **Data deposition.** If you choose to share or make the data underlying the study open, please deposit your data in a [recognized data repository](#) prior to or at the time of submission. You will be asked to provide the DOI, pre-reserved DOI, or other persistent identifier for the data set.

## Contact us

If you have any queries, please contact us via our Author Services website here.

Should you wish to contact the editor directly, you can do so at the following address: [Elias.Mpofu@unt.edu](mailto:Elias.Mpofu@unt.edu)

## Appendix B

### Ethics clearance



### GENERAL/HUMAN RESEARCH ETHICS COMMITTEE (GHREC)

17-Dec-2020

Dear Miss Kimberley Munsamy

#### Application Approved

Research Project Title:

**Psychological flexibility as a mediator between repetitive negative thinking and emotional distress amongst students at a South African university**

Ethical Clearance number:

**UFS-HSD2020/1523/0812**

We are pleased to inform you that your application for ethical clearance has been approved. Your ethical clearance is valid for twelve (12) months from the date of issue. We request that any changes that may take place during the course of your study/research project be submitted to the ethics office to ensure ethical transparency. Furthermore, you are requested to submit the final report of your study/research

project to the ethics office. Should you require more time to complete this research, please apply for an

extension. Thank you for submitting your proposal for ethical clearance; we wish you the best of luck and success with your research.

Yours sincerely

**Dr Adri Du Plessis**

**Chairperson: General/Human Research Ethics Committee**

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## Appendix C

### Information sheet and informed consent



My name is Kimberley Munsamy, and I am currently enrolled as a Master of Social Science (Counselling Psychology) student at the University of the Free State (UFS). As per my degree requirements, I need to conduct a research study. My research concerns how university students' perceptions about themselves and their circumstances impact their mood and emotions. As an undergraduate student at the UFS, you should be able to provide valuable information regarding how university students think and how this influences their emotions. Please read through the following information to make an informed decision regarding whether or not you would be prepared to participate in this research project.

If you choose to participate, you will be required to complete a questionnaire comprising of six sections. The first section contains questions about you (e.g., your age and gender). The remaining five sections include questions about how you see yourself, the world around you, and your past experiences. Also, some questions are about your feelings over the past few weeks. Completing these questions should take you approximately 15-20 minutes.

Please note that your participation in this research is voluntary, and you will not benefit from completing the questionnaire. Furthermore, you will not be disadvantaged if you choose not to participate. You are also free to withdraw from the study at any time. While there is no direct benefit to you, the information gathered by this research project will help us better understand how students' thinking influences the way they deal with certain situations and how it influences their emotions. This information may be useful in developing programmes to help students cope better at university in the future. Completing this questionnaire online will use

approximately 1-2MB of data. Unfortunately, we are not able to compensate you for the data used. However, this cost may be avoided by accessing and using the UFS internet to complete this questionnaire.

Participation in this study poses no risk to your emotional or physical well-being. However, some of the items included in the questionnaire might cause you to think about how you dealt with challenges in the past or how you feel about your life at the moment. Reflecting on one's life in this way may raise questions that you might want to explore with the help of a psychologist or counsellor, for example. As a UFS student, you have access to psychologists and counsellors at Student Counselling and Development; their services are free of charge.

Please contact Student Counselling and Development on 051 401 2853 or at [scd@ufs.ac.za](mailto:scd@ufs.ac.za).

Your responses to the questionnaire's questions will be anonymous, and you will not be asked to provide your name or student number on the questionnaire. Once you have clicked the "submit" button at the end of the questionnaire, your responses will automatically be encoded on a datasheet as a series of numbers. Thus, your responses to the questionnaire will not be connected to your email address. The information on the datasheet will be statistically analysed, and the results for all the participants will be reported as a group. The results of this analysis will be published in my dissertation and may also be published in a scientific journal or presented at a conference. However, the way the information will be collected and analysed will ensure that no participant or their individual responses in the questionnaires can be identified. The data will be stored on a password-protected external hard drive and deleted once the results of the study have been published or five years after completion of the study.

Ethical approval to conduct this research project has been obtained from the UFS Research Ethics Committee (Approval number: Awaiting). If you would like to be informed of the final research findings or require any further information pertaining to the study, please feel free to

contact me. Should you have concerns about how the research has been conducted, you may contact the secretary of the Research Ethics Committee in the Faculty of the Humanities at the University of the Free State (Mrs C Vercueil: 051 401 7083; [vercueilcc@ufs.ac.za](mailto:vercueilcc@ufs.ac.za)).

Sincerely,

Kimberley Munsamy

Prof Stephen Walker

Tel: 066 257 5409

Tel: 051 401 2424

Email: [km.munsamy@gmail.com](mailto:km.munsamy@gmail.com)

Email: [walkersp@ufs.ac.za](mailto:walkersp@ufs.ac.za)

Please ensure you check both boxes below. This serves as informed consent for your participation in the research study.

*Check all that apply.*

☐ I have read and understood the information sheet above. I have also had adequate opportunity to contact the researcher regarding any questions I may have and to have them answered to my satisfaction.

☐ I consent to participate in this study.

Please fill in the date on which you are completing this survey.

---

*Example: January 7, 2021*

**Appendix D**

**Survey**

**Biographical Section**

For each of the following questions within the biographical section, please select the category which best describes you.

1. Please fill in your age below in numbers. (Eg. 24)

\_\_\_\_\_

2. Please select the gender you identify as.

*Mark only one.*

☐ Male

☐ Female

☐ Other: \_\_\_\_\_

3. Please select the ethnicity which best describes you.

*Mark only one.*

☐ White

☐ Black

☐ Indian



☐ Coloured

☐ Asian

4. Please select your home language.

*Mark only one.*

☐ English

☐ Afrikaans

☐ Sesotho

☐ Setswana

☐ IsiZulu

☐ IsiXhosa

☐ Other: \_\_\_\_\_

5. Are you a first-generation student\*? (\*First-generation student refers to an enrolled student who is the first in their immediate family to attend university)

*Mark only one.*

☐ Yes

☐ No

There are 5 sections to be answered. Please note that there are no right or wrong answers. Read the instructions to all sections carefully before you answer the question. Please complete all sections as honestly as possible.

**Section 1 (General Health Questionnaire, GHQ)**

Please read this carefully We would like to know if you have had any medical complaints and how your health has been in general over the past few weeks. Please answer ALL the questions by selecting the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

1. Have you recently lost much sleep over worry?

*Mark only one.*

☐ Not at all

☐ No more than usual

☐ Rather more than usual

☐ Much more than usual

2. Have you recently had difficulty staying asleep once you are off?

*Mark only one.*

☐ Not at all

☐ No more than usual

☐ Rather more than usual

☐ Much more than usual

3. Have you recently felt constantly under strain?

*Mark only one.*

- ☐ Not at all
- ☐ No more than usual
- ☐ Rather more than usual
- ☐ Much more than usual

4. Have you recently been getting edgy or bad-tempered?

*Mark only one.*

- ☐ Not at all
- ☐ No more than usual
- ☐ Rather more than usual
- ☐ Much more than usual

5. Have you recently been getting scared or panicky over no good reason?

*Mark only one.*

- ☐ Not at all
- ☐ No more than usual

☐ Rather more than usual

☐ Much more than usual

6. Have you recently found everything getting on top of you?

*Mark only one.*

☐ Not at all

☐ No more than usual

☐ Rather more than usual

☐ Much more than usual

7. Have you recently been feeling nervous or strung up all the time?

*Mark only one.*

☐ Not at all

☐ No more than usual

☐ Rather more than usual

☐ Much more than usual

8. Have you recently been thinking of yourself as a worthless person?

*Mark only one.*

☐ Not at all

- ☐ No more than usual
- ☐ Rather more than usual
- ☐ Much more than usual

9. Have you recently felt that life is entirely hopeless?

*Mark only one.*

- ☐ Not at all
- ☐ No more than usual
- ☐ Rather more than usual
- ☐ Much more than usual

10. Have you recently felt that life isn't worth living?

*Mark only one.*

- ☐ Not at all
- ☐ No more than usual
- ☐ Rather more than usual
- ☐ Much more than usual

11. Have you recently found at times you couldn't do anything because your nerves were too bad?

*Mark only one.*

- ☐ Not at all
- ☐ No more than usual
- ☐ Rather more than usual
- ☐ Much more than usual

12. Have you recently found yourself wishing you were dead and away from it all?

*Mark only one.*

- ☐ Not at all
- ☐ No more than usual
- ☐ Rather more than usual
- ☐ Much more than usual

13. Have you recently thought of the possibility that you might make away with yourself?

*Mark only one.*

- ☐ Definitely not

☐ I don't think so

☐ Has crossed my mind

☐ Definitely has

14. Have you recently found the idea of taking your own life kept coming into your mind?

*Mark only one.*

☐ Definitely not

☐ I don't think so

☐ Has crossed my mind

☐ Definitely has



**Section 2 (Ruminative Response Style, RRS)**

People think and do many different things when they feel depressed. Please read each of the items below and indicate whether you almost never, sometimes, often, or almost always think or do each question when you feel down, sad, or depressed. Please indicate what you generally do, not what you think you should do.

1. Think about how alone you feel?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

2. Think "I won't be able to do my course work if I don't snap out of this"?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

3. Think about your feelings of fatigue and achiness?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

4. Think about how hard it is to concentrate?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

5. Think about "what am I doing to deserve this"?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

6. Think about how passive and unmotivated you feel?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

7. Analyze recent events to try and understand why you are depressed?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

8. Think about how you don't seem to feel anything anymore?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

9. Think "why can't I get going"?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

10. Think "why do I always react this way"?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

11. Go away by yourself and think about why you feel this way?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

12. Write down what you are thinking about and analyze it?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

13. Think about a recent situation, wishing it had gone better?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

14. Think "I won't be able to concentrate if I keep feeling this way"?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

15. Think "why do I have problems other people don't have"?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

16. Think "why can't I handle things better"?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

17. Think about how sad you feel?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

18. Think about all your shortcomings, failings, faults and mistakes?

*Mark only one.*

- ☐ Almost Never
- ☐ Sometimes
- ☐ Often
- ☐ Almost always

19. Think about how you don't feel up to doing anything?

*Mark only one.*

- ☐ Almost Never
- ☐ Sometimes
- ☐ Often
- ☐ Almost always

20. Analyze your personality to try and understand why you are depressed?

*Mark only one.*

- ☐ Almost Never
- ☐ Sometimes
- ☐ Often
- ☐ Almost always

21. Go someplace alone to think about your feelings?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always

22. Think about how angry you are with yourself?

*Mark only one.*

☐ Almost Never

☐ Sometimes

☐ Often

☐ Almost always



Rate each of the following statements on a scale of 1 (“not at all typical of me”) to 5 (“very typical of me”). Please do not leave any items blank.

- Mark only one.*

*Mark only one.*

*Mark only one.*

1 2 3 4 5

---

Not at all typical of me ☐ ☐ ☐ ☐ ☐ Very Typical of me





*Mark only one.*

*Mark only one.*

*Mark only one.*

*Mark only one.*

1 2 3 4 5

---

Not at all typical of me ☐ ☐ ☐ ☐ ☐ Very Typical of me



**Section 4 (Acceptance and Action Questionnaire-II, AAQ-II)**

Please rate how true each statement is of you by selecting the response which most applies to you.

1. My painful memories and experiences make it difficult for me to live a life that I would value.

*Mark only one.*

- ☐ Never True
- ☐ Very Seldom True
- ☐ Seldom True
- ☐ Sometimes True
- ☐ Frequently True
- ☐ Almost Always True
- ☐ Always True

2. I'm afraid of my feelings.

*Mark only one.*

- ☐ Never True
- ☐ Very Seldom True

- ☐ Seldom True
- ☐ Sometimes True
- ☐ Frequently True
- ☐ Almost Always True
- ☐ Always True

3. I worry about not being able to control my worries and feelings.

*Mark only one.*

- ☐ Never True
- ☐ Very Seldom True
- ☐ Seldom True
- ☐ Sometimes True
- ☐ Frequently True
- ☐ Almost Always True
- ☐ Always True

4. My painful memories prevent me from having a fulfilling life.

*Mark only one.*

- ☐ Never True
- ☐ Very Seldom True
- ☐ Seldom True
- ☐ Sometimes True
- ☐ Frequently True
- ☐ Almost Always True
- ☐ Always True

5. Emotions cause problems in my life.

*Mark only one.*

- ☐ Never True
- ☐ Very Seldom True
- ☐ Seldom True
- ☐ Sometimes True
- ☐ Frequently True
- ☐ Almost Always True
- ☐ Always True



6. It seems that most people are handling their lives better than I am.

*Mark only one.*

- ☐ Never True
- ☐ Very Seldom True
- ☐ Seldom True
- ☐ Sometimes True
- ☐ Frequently True
- ☐ Almost Always True
- ☐ Always True

7. Worries get in the way of my success.

*Mark only one.*

- ☐ Never True
- ☐ Very Seldom True
- ☐ Seldom True
- ☐ Sometimes True

☐ Frequently True

☐ Almost Always True

☐ Always True

Thank you very much for participating in this research! To complete the questionnaire, please click the 'Submit' button below. Please direct all enquiries or comments to [km.munsamy@gmail.com](mailto:km.munsamy@gmail.com)

Should you wish to speak to a psychologist or counsellor, please contact Student

Counselling and Development by calling 051 401 2853 or via email at [scd@ufs.ac.za](mailto:scd@ufs.ac.za)

☐ Submit

**Appendix E**

**Turnitin report**

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