ISSN 1577-7057

Volume 23, number 1 March 1, 2023
Volumen 23, número 1 1 Marzo, 2023

ISSN: 1577-7057

IJP&PT

International Journal of Psychology & Psychological Therapy

https://www.ijpsy.com

IJP&PT is included in the following indexing and documentation Centers

International Journal of Psychology & Psychological Therapy, 2023, *23*, 1, 17-29

Understanding and Explaining Psychological Distress in International Students

Francesca Brandolin, Päivi Lappalainen, Ana Gallego
Simone Gorinelli, Raimo Lappalainen
University of Jyväskylä, Finland

Abstract

Research indicates that international students report more psychological distress than domestic students. The aim of our research was to investigate levels of stress, depression, and anxiety, and in particular, psychological predictors for these symptoms among international students. International students (N= 103) from the University of Jyväskylä (Finland) completed questionnaires assessing their stress (PSS-10), depression (PHQ-9), anxiety (GAD-7), psychological inflexibility (AFQ-Y), mindfulness (FFMQ), and engaged living (ELS). A significant proportion of students experienced high levels of psychological distress, and those with elevated symptoms reported higher levels of psychological inflexibility, lower levels of mindfulness skills and value-based actions. Regression analyses suggested that living according to one's values and value-based actions was the strongest predictor of stress and depression (approx. 25% of variance explained). On the other hand, the strongest predictor for symptoms of anxiety was acting with awareness (approx. 20% of variance explained). This study suggests that students with different types of distress might benefit from training in distinct psychological flexibility skills, and these skills could be embedded into the university counselling services.
Key words: international students, psychological flexibility, anxiety, depression, stress, predictors.

How to cite this paper: Brandolin F, Lappalainen P, Gallego A, Gorinelli S, & Lappalainen R (2023). Understanding and Explaining Psychological Distress in International Students. *International Journal of Psychology & Psychological Therapy, 23, 1,* 17-29.

Novelty and Significance

What is already known about the topic?

- International students report more anxiety, stress, sleeping problems, and homesickness and have less social support than domestic students.
- Consequently, mental health is currently considered one of the leading concerns among international students.
- A limited number of studies have investigated the relationship between different psychological flexibility skills and symptoms among foreign students.

What this paper adds?

- The results show among international students how different components of psychological flexibility predicted different type of symptoms.
- Also indicate that different type of distress may require training of specific combination of psychological flexibility skills.

The number of students worldwide who pursue higher education studies abroad has more than doubled in the last two decades (OECD, 2019). Studying abroad offers students the opportunity to develop language skills, study in an international context, and experience a foreign culture and environment. However, international students are frequently faced with adaptation challenges associated with difficulties adjusting to a new culture and language (Andrade, 2006; Hechanova-Alampay, Beehr, Christiansen, & Van Horn, 2002; Mori, 2000). Adjustment to new social and learning environments can be a stressful experience, which may manifest in communication problems and feelings of isolation, loneliness, and hopelessness (Mori, 2000; Wilton & Constantine, 2003).

* Correspondence: Francesca Brandolin, Department of Psychology, FIN-40014 University of Jyväskylä, Finland. Email: francesca.f.brandolin@jyu.fi. *Acknowledgements*: The authors would like to thank the international students who participated in this study. The study was partially funded by Student Life, a unit of the University of Jyväskylä, Finland

International students report more anxiety, stress, sleeping problems, and homesickness and have less social support than domestic students (e.g., Forbes-Mewett, 2019; Mori, 2000; Russell, Rosenthal, & Thomson, 2010; Shadowen, Williamson, Guerra, Ammigan, & Drexler, 2019; Sherry, Thomas, & Chui. 2010). Consequently, mental health is currently considered one of the leading concerns among international students (Forbes-Mewett, 2019). For example, an Australian study found that nearly 41% of international students adapted to their experience somewhat negatively and displayed high levels of stress, anxiety, and depression (Russell *et alia,* 2010). Sümer, Poyrazli, and Grahame (2008) explored distress in international students studying in the United States and found that students with lower levels of support experienced higher levels of depression and anxiety. A study by Rice, Choi, Zhang, Morero, and Anderson (2012) on Chinese and Indian students reported that around 37% of these students met the clinical cut-off point for depression. A more recent study showed elevated levels of acculturative stress, depression, and anxiety in this population (Kim, Maleku, Lemieu, Du, & Chen, 2019). Similarly, Shadowen *et alia* (2019) found high levels of depressive and anxiety symptoms in international students, with around 45% of them meeting the clinically significant cut-off point for depression, which has been associated with acculturative stress, perceived discrimination, and poor English fluency. Psychological distress can be a significant burden for many, impairing their social functioning and academic performance and causing study delays or dropout (Hauschildt, Gwosc, Netz, & Mishra, 2015).

However, most of the studies with the international students have been conducted outside of the European context. Consequently, there is a need to examine the mental health and psychological functioning of international students pursuing their higher education studies in Europe.

During the last decades, transdiagnostic approaches that provide novel insights into how we could understand mental health symptoms and improve psychological functioning have emerged (Hayes & Hofmann, 2018; Levin, Krafft, Pistorello, & Seeley, 2014; Zvolensky & Leventhal, 2016). One of the key elements of psychological health is considered psychological flexibility (Hayes, Strosahl, & Wilson, 2012; Kashdan & Rottenberg, 2010), which is the ability to recognize and adapt to changing life circumstances by engaging in adaptive behaviors to pursue personally meaningful values and goals (Hayes *et alia*, 2012; Knirsch, 2015). Psychological flexibility is a core concept in the acceptance and commitment therapy (ACT) model. The ACT model describes psychological flexibility through six related skills or core processes: (1) acceptance, (2) defusion, (3) being present, (4) self as context, (5) values, and (6) committed action (Hayes *et alia*, 2012). Acceptance involves being actively open about and aware of one's own experiences, especially in relation to unpleasant thoughts and emotions. Defusion entails undermining the negative effects of cognition by teaching skills aimed at creating distance from thoughts. Defusion and acceptance are, in turn, connected to the principle of self-as-context, a perspective from which individuals can become aware of their inner experiences (thoughts and emotions) without becoming overly attached to them. Contact with the present moment is about flexibly attending to all experiences happening in the now (also referred as mindfulness). Furthermore, a connection to one's own values is represented by the ability to choose what matters and act in service of these choices by performing value-oriented actions. Several studies have found higher levels of psychological flexibility to be associated with lower levels of health-related symptomatology, including stress, depression, and anxiety (e.g., Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Lee & Orsillo, 2014). Higher levels of

psychological flexibility have also been found to predict better mental health, indicating that better flexibility skills may lead to improved psychological well-being and better quality of life (Hayes, 2019).

In contrast, individuals high in psychological inflexibility tend to avoid or control their psychological reactions, such as thoughts, emotions, and sensations. and act in ways that are inconsistent with what is important to them. Psychological inflexibility has been found to be associated to a wide range of mental health problems, such as depression, anxiety, trauma, worry and stress (e.g., Kashdan & Rottenberg, 2010; Levin et alia, 2014; Tavakoli, Broyles, Reid, Sandoval, & Correa Fernández, 2019; Tyndall, Waldeck, Pancani, Whelan, Roche, & Pereira, 2020). In the context of university students, numerous studies have suggested that higher levels of psychological inflexibility are associated with poor psychological health and several mental health problems, such as substance abuse, general psychological distress, depressive and anxiety disorders, eating disorders, sleep problems (Levin *et alia*, 2014; Masuda, Muto, Tully, Morgan, & Hill 2014; Masuda & Tully, 2012; Peltz, Rogge, Bodenlos, Kingery, & Pigeon, 2020), and academic procrastination (Eisenbeck, Carreno, & Uclés Juárez, 2019; Glick, Millstein, & Orsillo, 2014). For example, Levin *et alia* (2014) found that psychological inflexibility was associated with a wide range of psychological disorders and comorbidities, in particular depression and anxiety. In line with these findings, Tavakoli *et alia* (2019) reported that stress, worry, somatization, and generalized anxiety were associated with psychological inflexibility among ethnically diverse samples of college students.

Based on these observations, we concluded that it is important to examine and pay attention to the potential contribution of psychological inflexibility or alternatively flexibility to the psychological distress of international students as they are considered a vulnerable student population (Sherry *et alia*, 2010), which are at a risk of psychological problems. In addition, there is limited research on the mental health of this student population in European countries. Thus, this study focused on how the process of psychological inflexibility was associated with psychological distress in international students. In particular we wanted to better understand which psychological skills were associated with and could possibly predict psychological symptomatology among international students. This knowledge could help us develop interventions and counseling services that could enhance the overall well-being of students when they pursue education abroad. Thus, in the context of international students, this study aimed to (1) examine which psychological flexibility skills based on the ACT model were associated with symptoms of stress, depression, and anxiety and (2) determine which of these skills could most strongly predict stress, depression, and anxiety.

Method

Participants

A total of 125 students were interested in participating in the well-being workshops. All of them were eligible, however, 22 students dropped out before the pre-measurement, therefore the final sample of participants in the study was 103. The participants had an average age of 25.93 (*SD*= 5.78) and were mostly female (*n*= 82; 80%). Nearly half of them were on exchange (*n*= 47; 46%), and the other half were degree students (*n*= 56; 54%). The students belonged to more than 40 different nationalities, with most students coming from Asia (*n*= 29; 28%), Central Europe, and Baltic countries (*n*= 22; 21%). Detailed characteristics are reported in Table 1. The participants were required

to be (a) enrolled international students at the University of Jyväskylä, (b) at least 18 years old, and (c) have access to the internet, and were excluded if they participated simultaneously in any psychological intervention. All participants provided written informed consent and the study was approved by Central Finland Healthcare District's Ethics Committee (registration number 14U/2012).

Table 1. Participant Characteristics (*N*=103)

Baseline characteristic		*n*	%	(*SD*)
	M (*SD*)	25.93	--	5.78
Age	18-25	62	60.2	
	26-30	23	22.3	
	31-35	13	12.6	
	36-46	5	4.9	
Gender	Female	82	79.6	
	Male	21	20.4	
Educational program	Degree	56	54.4	
	Exchange	47	45.6	
Educational level	Bachelor	35	34.0	
	Master	62	60.2	
	Doctorate	6	5.8	
Faculty	Education & Psychology	37	35.9	
	Humanities & Social Sciences	27	26.2	
	Business & Economics	13	12.6	
	Mathematics & Science	10	9.7	
	Sport & Health Sciences	7	6.8	
	Information & Technology	9	8.7	
Country of origin	Asia	29	28.2	
	Central Europe, Baltics & UK	22	21.4	
	East Europe & Russia	16	15.5	
	Mediterranean Europe	16	15.5	
	Middle East	12	11.7	
	America North & South	8	7.8	
Length of stay	Less than 6 months	63	61.2	
	6 months to 1 year	19	18.4	
	Up to 2 years	9	8.7	
	More than 2 years	12	11.7	

Measures

Perceived Stress Scale (PSS-10; Cohen, Kamarck, & Mermelstein, 1983; Cohen & Williamson, 1988). Stress was measured with the PSS-10, a 10-item scale in which respondents' rate on a 5-point Likert scale (0= never, 4= very often) how stressful they perceive their lives to have been within the past month. Total scores of 0-13 indicate low levels of stress, 14-26 moderate stress, and 27-40 high stress. The PSS-10's internal consistency has ranged from .74 to .91 (Lee, 2012); in the current study, it was α= .81

Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001). The PHQ-9 is a depression module that scores each of the nine DSM-IV depression criteria from 0 (not at all) to 3 (nearly every day). It is not a screening tool for depression, but it is used to monitor the severity of depression and response to treatment and has been validated for use in primary care. A total score of 0–4 represents no to minimal levels of depressive symptomatology, 5-9 mild symptomatology, 10–14 moderate, 15–19 moderately severe, and 20 or greater severe symptomatology. The PHQ-9's internal consistency has been shown to be high (Kroenke *et alia*, 2001, 2002). In our sample, α= .80.

General Anxiety Disorder-7 (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006). The GAD-7 is a 7-item scale that measures symptoms of generalized anxiety disorder. Respondents rate how often specific problems related to anxiety have bothered them over the last 2 weeks on a scale from 0 (not at all) to 3 (nearly every day). A total score of less than 4 represents minimal levels of symptom burden, 5–9 mild burden, 10–14 moderate, and 15 or greater severe anxiety. The scale has shown excellent

internal consistency (α= .92; Spitzer *et alia*, 2006). In this sample, α= .88.

Avoidance and Fusion Questionnaire for Youth (AFQ-Y; Greco, Lambert, & Baer 2008). The AFQ-Y measures psychological inflexibility, a construct referring to overarching and non-adaptive avoidance of thoughts and feelings and present in numerous psychopathologies. The AFQ-Y includes 17 different statements on a 5-point scale from 0= not at all true to 4= very true. Lower scores mean better outcomes, showing less fusion with thoughts, less overthinking, and more kindness toward the self (Valdivia Salas, Martín, Zaldívar, Lombas, & Jiménez, 2017). The AFQ-Y has shown adequate reliability and validity in adult university student samples (Schmalz & Murrell, 2010), and in predicting psychological symptoms (Fergus *et alia*, 2012). In the current study, α= .83.

Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). The FFMQ measures mindfulness and consists of 39 statements on a scale ranging from 1 to 5 (1= rarely or never true, 5= very often true or always true). The FFMQ has five subscales: (1) observe, (FFMQ-Ob, noticing sensations, emotions, and thoughts); (2) describe (FFMQ-De, labeling these stimuli with words); (3) non-judgement (FFMQ-Nj, refraining from evaluating one's thoughts, emotions, and sensations); (4) non-reactivity (FFMQ-Nr, allowing thoughts, feelings, sensations, and urges to come and go without impulsive reactivity); and (5) act with awareness (FFMQ-Aw, attending to and/or noticing one's actions). Higher scores (range of 39-195) indicate greater mindfulness skills. The FFMQ has an adequate internal consistency (Baer *et alia*, 2008). In this study, the Cronbach's alpha for total FFMQ scores was α= .79 and for the subscales α= .81 (observe), α= .89 (describe), α= .88 (act with awareness), α= .89 (non-judgement), and α= .78 (non-reactivity).

Engaged Living Scale (ELS-16; Trompetter, 2014). The ELS-16 is a measure of engaged living, defined as the evaluation and performance of valued life activities. This measure features two subscales, Valued Living (ELS-VL) for learning to identify values, and Life Fulfilment (ELS-LF) for living according to them. All items are scored on a 5-point Likert scale ranging from completely disagree to completely agree. The ELS presents adequate to good psychometric properties (Trindade, Ferreira, Pinto Gouveia, & Nooren, 2016). In our sample, α= .92 (ELS-16, total), α= .89 (ELS-VL) and α= .88 (ELS-LF).

Procedure

This study was part of the Student Life concept, an organizational unit that is part of the University of Jyväskylä, offering a cluster of wellbeing support activities to promote the overall wellbeing of students. This paper outlines the findings from the pre-measurements of the first twelve groups of international students who participated in a wellbeing workshop. International students were recruited from the University of Jyväskylä between fall 2017 and fall 2021 by posting ads and flyers online, and on campus, that invited international students to participate in a 5-week wellbeing workshop in groups. The ad stated that the workshop aimed to promote student wellbeing by covering topics such as: how to adapt and cope with life and study-related stressors more effectively, and how to engage in life and studies in a more meaningful way. Additionally, it specified that the workshop included mindfulness practices and advice how to integrate it into daily life.

All participants attended an evaluation meeting in an individual assessment meeting prior the workshop where they completed a set of online questionnaires composed of symptom (stress, depression, and anxiety), process (psychological inflexibility, mindfulness, and valued living), and demographic measures. The measures were administered in English.

Data Analysis

Statistical analyses were conducted using IBM SPSS (version 24 and 26). The

analyses were accomplished per the following steps. First, to describe the amount of psychological distress among the participants, the numbers of students reporting minimal, low, moderate, and high amounts of symptoms were recorded. Second, the association between symptom measures (PSS-10, PHQ-9, GAD-7) and process measures (AFQ-Y, FFMQ, ELS) were examined using Pearson's correlations. Correlations r <0.30 were considered small, correlations r ≥0.30 and r <0.50 medium, and correlations r ≥0.50 strong (Kraemer, Morgan, Leech, Gliner, Vaske, & Harmon, 2003). Linear regression analyses were performed to investigate which components of psychological flexibility FFMQ subscales (FFMQ-Ob, FFMQ-De, FFMQ-Nj, FFMQ-NR, FFMQ-Aw), and ELS subscales (ELS-VL, ELS-LF) made significant contributions to the prediction of stress (PSS-10), depression (PHQ-9), and anxiety (GAD-7). Thus, AFQ-Y was not included in the regression analysis since the total score in AFQ-Y reflects general psychological flexibility skills and we wanted to understand the subskills in psychological flexibility as predictors. The FFMQ and ELS total scores were not included in the regression analysis because of their high correlation with the subscales. We included in the regression analysis such components that significantly correlated with stress, depression, and anxiety, and the correlation coefficient was at least medium (r ≥0.30). We employed first the Enter-method and entered the predictors in order of the level of correlation coefficient, starting from the strongest correlation. After identifying the significant predictors, we applied the stepwise method and investigated the contribution of the individual predictors (FFMQ and ELS subscales). The variance inflation factors (VIF) were in acceptable range (VIF <2.5), indicating that the multi-collinearity was not a problem.

RESULTS

When investigating the symptoms of stress, depression, and anxiety, nearly 90% of the students experienced moderate or high levels of stress (PSS-10), 43% at least moderate depressive symptoms (PHQ-9), and nearly 38%= at least moderate anxiety (GAD-7).

The first aim of this study was to explore which psychological flexibility skills were associated with symptoms of stress, depression, and anxiety among international students. As shown in Table 2, psychological inflexibility (AFQ-Y) had a significant and moderate positive correlation (r= 0.31-0.38) with perceived stress (PSS-10) and depression (PHQ-9), and anxiety (GAD-7). Similarly, high levels of symptoms were associated with low levels of mindfulness. The mindfulness subscales act with awareness (FFMQ-Aw) and non-judgement (FFMQ-Nj) showed moderate negative correlations (r= -0.37; -0.47) with all symptom measures, while non-reactivity (FFMQ-Nr) had significant, but slightly smaller correlations (r= -0.30; -0.34). For engaged living (ELS, Total), there was a significant, moderate (r= -0.30; r= -0.47), negative correlation with stress (PSS-10), depression (PHQ-9), and anxiety (GAD-7; r= -0.30). Valued living (ELS-VL) correlated moderately and negatively with depression (r= -0.39), correlations with stress and anxiety were lower (r <0.30). Life fulfilment (ELS-LF) correlated strongly and negatively with stress and depression (r= -0.52, r= -0.53, respectively), and moderately and negatively with anxiety (r= -0.35). Interestingly, the FFMQ subscales observe (FFMQ-Ob) and describe (FFMQ-De) showed either very low or low correlations with the symptom measures. Overall, students with higher levels of symptoms reported higher psychological inflexibility and lower scores in mindfulness and living according to their values. See Table 2 for further details.

Table 2. Correlations between symptom (stress, depression, anxiety) and process measures (engaged living, psychological inflexibility, and mindfulness skills). Mean values and standard deviations (SD).

	PSS-10	PHQ-9	GAD-7	ELS	ELS-VL	ELS-LF	AFQ-Y	FFMQ	FFMQ -Ob	FFMQ -De	FFMQ -Aw	FFMQ -Nj	FFMQ -Nr
PSS-10	_	.63**	.55**	-.39**	-.29**	-.52**	.31**	-.45**	-.06	-.13	-.43**	-.38**	-.30**
PHQ-9		_	.65**	-.47**	-.39**	-.53**	.38**	-.53**	-.12	-.21*	-.47**	-.41**	-.32**
GAD-7			_	-.30**	-.24*	-.35**	.32**	-.40**	-.03	-.07	-.43**	-.37**	-.34**
ELS				_	.97**	.86**	-.33**	.51**	.26**	.27**	.40**	.23*	.34**
ELS-VL					_	.70**	-.31**	.49**	.25**	.28**	.38**	.18	.35**
ELS-LF						_	-.28*	.45**	.22*	.20*	.36**	.27**	.26**
AFQ-Y							_	-.48**	.04	-.13	-.46**	-.59**	-.15
FFMQ								_	.55**	.53**	.67**	.57**	.60**
FFMQ-Ob									_	.17	.18	-.01	.32**
FFMQ-De										_	.12	-.01	.21*
FFMQ-Aw											_	.36**	.28**
FFMQ-Nj												_	.19
FFMQ-Nr													_
M	20.80	8.85	8.67	54.20	38.24	15.96	26.32	119.71	26.87	26.74	24.84	24.74	16.59
SD	5.64	5.04	4.91	11.90	8.40	4.39	10.57	17.90	6.19	6.61	6.30	7.23	4.24

Notes: *= p <.05 level; **= p < .01 level; AFQ-Y= Avoidance and Fusion Questionnaire-for Youth; ELS= Engaged Living Scale; ELS-LF= Life Fulfillment; ELS-VL= Valued living; FFMQ Five Facets Mindfulness Questionnaires; FFMQ-Aw= FFMQ Acting with Awareness; FFMQ-De= FFMQ Describe; FFMQ-Nj= FFMQ Non-Judgement FFMQ-Nr= FFMQ Non-Reactivity; FFMQ-Ob= FFMQ Observe; GAD-7= Generalized Anxiety Disorder-7 items; PHQ-9= Patient Health Questionnaire-9 items; PSS-10= Perceived Stress Scale- 10 items.

When investigating the total scores of mindfulness (FFMQ), psychological inflexibility (AFQ-Y) and engaged living (ELS) as predictors for stress (PSS), we observed a significant model, $F(3, 97)= 10.058$, p <.001. The model explained 21% of the variance of PSS (Adjusted $R^2= 0.214$). However, only the FFMQ total was a significant predictor (Standardized β, $\beta= -0.294$, $p= 0.010$). For depression (PHQ-9) we obtained a significant model $F(3, 97)= 16.967$, p <.001, explaining 32% of the variance. For depression, both FFMQ Total and ELS Total acted as significant predictors ($\beta= -0.333$, p =.002; $\beta= -0.240$, p=.014, respectively). For anxiety symptoms (GAD-7), we also observed a significant model $F(3, 97)= 7.466$, p <.001, explaining 16% of the variance. Only the FFMQ total was a significant predictor (Standardized β, $\beta= -0.282$, p=.016). The analyses suggested that psychological inflexibility (AFQ-Y) was not a significant predictor for stress (PSS), depression (PHQ-9), and anxiety (GAD-7) when investigated together with the FFMQ and ELS.

Second, we investigated the subscales of the FFMQ and the ELS as predictors. In relation to perceived stress (PSS-10), four subscales (ELS-LF, FFMQ-Aw, FFMQ-Nj and FFMQ-Nr) correlated significantly and at least moderately ($r \geq 0.30$) with PSS-10 and were entered in the regression analyses. These four subscales explained 35% of the variance in PSS-10, $F(4, 96)= 13.817$, p <.001. Further, ELS-LF ($\beta= -0.347$, p <.001), FFMQ-Aw ($\beta= -0.208$, $p= .027$) and FFMQ-Nj ($\beta= -0.188$, $p= .037$) acted as significant predictors, but not FFMQ-Nr. The stepwise method with these significant predictors indicated that the ELS-LF explained 25% of the variance in PSS-10, the FFMQ-Aw an additional 7% and FFMQ-Nj an additional 3% (see Table 3 for details).

Regarding the symptoms of depression (PHQ-9), five subscales (ELS-LF, FFMQ-Aw, FFMQ-Nj, ELS-VL and FFMQ-Nr) correlated significantly and at least moderately ($r \geq 0.30$) with PHQ-9 and were entered in the regression analyses. These five subscales explained almost 40% of the variance in PHQ-9, $F(5, 95)= 13.361$, p <.001. Further, ELS-LF ($\beta= -0.384$, p <.001), FFMQ-Aw ($\beta= -0.250$, $p= .007$) and FFMQ-Nj ($\beta= -0.198$, $p= .024$) acted as significant predictors, but not ELS-VL and FFMQ-Nr. The

Table 3. Linear regression analysis. Role of mindfulness and engaged living skills in predicting stress, depression, and general anxiety.

DV	Significant predictors (IV)	Std β	R^2	Adjusted R^2	Change R^2
PSS-10	1. Model ESL-LF	-0.365***	0.249	0.241	0.249***
	2. Model FFMQ-Aw	-0.228*	0.322	0.308	0.073**
	3. Model FFMQ-Nj	-0.197*	0.355	0.335	0.033*
PHQ-9	1. Model ELS-LF	-0.366***	0.266	0.259	0.266***
	2. Model FFMQ-Aw	-0.263**	0.361	0.348	0.094***
	3. Model FFMQ-Nj	-0.212*	0.399	0.380	0.038*
GAD-7	1. Model FFMQ-Aw	-0.300**	0.190	0.182	0.190***
	2. Model FFMQ-Nr	-0.212*	0.241	0.225	0.051*
	3. Model FFMQ-Nj	-0.216*	0.281	0.259	0.040*

Notes: ***= $p \leq .001$; **= $p < .01$; *= $p < .05$; AFQ-Y= Avoidance and Fusion Questionnaire-for Youth; DV= dependent variable ELS= Engaged Living Scale; ELS-LF= Life Fulfillment; ELS-VL= Valued living; FFMQ Five Facets Mindfulness Questionnaires; FFMQ-Aw= FFMQ Acting with Awareness; FFMQ-De= FFMQ Describe; FFMQ-Nj= FFMQ Non-Judgement FFMQ-Nr= FFMQ Non-Reactivity; FFMQ-Ob= FFMQ Observe; GAD-7= Generalized Anxiety Disorder-7 items; IV= independent variable PHQ-9= Patient Health Questionnaire-9 items; PSS-10= Perceived Stress Scale- 10 items.

stepwise method with these significant predictors indicated that the ELS-LF explained 26% of the variance in PHQ-9, the FFMQ-Aw an additional 9%, and the FFMQ-Nj an additional 4% (Table 3).

When investigating symptoms of anxiety (GAD-7), four subscales (FFMQ-Aw, FFMQ-Nj, ELS-LF, and FFMQ-Nr) correlated significantly and at least moderately ($r \geq 0.30$) with GAD-7 and were entered in the regression analyses. These four subscales explained 28% of the variance in GAD-7, $F(4, 96)= 9.999$, $p < .001$. Further, FFMQ-Aw ($\beta= -0.267$, $p= .007$), FFMQ-Nj ($\beta= -0.197$, $p= .038$) and FFMQ-Nr ($\beta= -0.193$, $p= .036$) acted as significant predictors, but not ELS-LF. The stepwise method with these significant predictors indicated that the FFMQ-Aw explained 19% of the variance in GAD-7, the FFMQ-Nr an additional 5% and the FFMQ-Nj an additional 4% (Table 3).

DISCUSSION

The current study sought to examine psychological distress in international students, and in particular which psychological skills were associated with and could possibly predict psychological symptomatology among international students. We believe that knowledge of predictors could help us develop interventions and counseling services that could enhance the overall well-being of international students. In general, we found that a significant proportion of students in the current sample experienced high levels of stress and elevated levels of depression and anxiety. In terms of psychological skills, the results revealed, in particular that four psychological flexibility skills were associated with different dimensions of psychological distress: (1) life fulfillment, (2) act with awareness, (3) non-judgement, and (4) non-reactivity.

There is ample evidence indicating that adjustment to challenges may lead to psychological distress, such as stress, depression, and anxiety, among international students (e.g., Forbes-Mewett, 2019; Shadowen *et alia*, 2019), which is also reflected in this study. Although the current study sought out international students interested in a program to help cope with study-related stressors and integrate mindfulness into their daily lives, many participants, unexpectedly, experienced high levels of psychological distress. Almost all of them experienced at least moderate stress, and nearly half of them displayed moderate to high levels of depression and anxiety. This is in accordance with the studies of Khoshlessan and Das (2019), Rice *et alia* (2012) and Shadowen *et*

alia (2019), which found equivalent, high levels of depressive and anxiety symptoms in international students. The results of this study also raise concerns about the effects of psychological distress on studies. Ill-being can make it difficult to keep adequate levels of energy and focus on studies (Russell *et alia*, 2010).

In addition, the results of the current study suggested that students who had lower flexibility and mindfulness skills (fusion with thoughts, lack of awareness, avoidance, unclear values, and less value-based actions) experienced heightened levels of stress, depression, and anxiety, thereby corroborating earlier findings (e.g., Lee & Orsillo, 2014; Levin *et alia*, 2014, 2019; Roemer, Salters, Raffa, & Orsillo, 2005; Tavakoli *et alia*, 2019; Tull, Gratz, Salters, & Roemer, 2004). These earlier studies concluded that psychological inflexibility was associated with higher stress, depression, and generalized anxiety among student populations. The current study added to this knowledge by investigating the different dimensions of psychological flexibility and mindfulness associated with stress, depression, and anxiety symptoms. In addition, these results substantiate those of previous studies that have examined associations between mindfulness and the psychological well-being of university students (e.g., Baer *et alia*, 2006; Brown & Ryan, 2003). These findings are also in accordance with a study by Räsänen, Muotka, & Lappalainen (2020), which observed that increased meaningfulness (i.e., how students viewed their life in stressful situations) mediated changes in stress and depression.

Further, we analyze which psychological skills, e.g., general psychological flexibility/inflexibility, mindfulness and engaged living, were the strongest predictors of symptoms of stress, depression, and anxiety. Both symptoms of stress and depression were explained by the degree of life fulfillment, which accounted for approximately 25% of the variance in stress and depression. This finding suggest that identifying what matters to oneself (personal values) and, in particular engaging in meaningful actions based on these values could reduce symptoms of stress and depression. Second, practicing being focused on the present moment and developing awareness skills as well as non-judgmental attitude toward unwanted thoughts and feelings may offer a more resilient perspective for relating to stress and depression. In accordance with our results, increased non-judgmental awareness of the present moment has been found to be associated with lower perceived stress over time in students (Mayer, Im, Stavas, & Hazlett-Stevens, 2019). These three skills (life fulfillment, behavioral awareness, and non-judgement) together explained about 40% of symptoms of depression, and over 30% of stress. Of these three, life fulfillment acted as the strongest predictor. Interestingly, life fulfillment was not a significant predictor for symptoms of anxiety. Instead, act with awareness, non-judgment, and non-reactivity predicted symptoms of anxiety, together accounting for approximately 28% of the variability. Of these three mindfulness-related skills, act with awareness was the strongest predictor for anxiety.

Overall, the findings suggest that the transdiagnostic process of psychological flexibility is a key factor in managing psychological distress and promoting wellbeing in international students. Students with low psychological flexibility skills are at risk of experiencing elevated levels of psychological distress, such as stress, depression, and anxiety. Therefore, training in skills such as identifying what matters to oneself and engaging in meaningful actions as well as developing awareness skills and a non-judgmental attitude toward emotions could prevent the development of psychological distress. As Masuda and Tully (2012) recommend, interventions targeting not only psychological symptoms but also mindfulness and psychological flexibility are needed.

Andrade (2006) has called for assessment data that will help make informed decisions about support programs for international students. The results herein highlight the skills that can be included in services for international students and inform interventions for international students.

However, the present study does come up against several limitations, the most important being the sample size and representativeness of the sample, as most participants were female university students. A larger and more heterogeneous sample would have ensured a more accurate representation of the target population. Also, data was collected from international students who decided voluntarily to enroll in a well-being workshop. A further limitation was the fact that we only used self-report questionnaires. Self-reported data may lead to inaccuracies (e.g., social desirability bias) which may pose a threat to internal validity. Lastly, we were unable to establish causal conclusions based on the current data. We are aware of the fact that relationships found in this data could be coincidental, or a third factor may explain the observed associations.

It is advisable that services aimed at international students devote attention to improving these students' psychological flexibility and mindfulness skills and incorporate these skills into their guidance and counselling services. Emphasis needs to be placed on helping international students engage in life, clarify what is important for them (personal values) in relation to their studies while they are in a foreign country, and on encouraging them to make time for the things they consider important (value-based actions). For example, an ACT intervention (Hayes *et alia*, 2012) may assist them in acquiring tools to cope with their concerns and promote their well-being, thus fostering engagement in life, awareness skills, and more openness toward their internal and external experiences while studying abroad. The current study increases knowledge of the relationship between symptoms of stress, depression, and anxiety and the psychological skills of students completing their studies abroad. In addition, the study suggests that different types of distress may benefit from training skills of distinct psychological flexibility dimensions. For example, fostering engagement in life (i.e., working with values and engaging in concrete actions) is important for symptoms of stress and depression and may play a minor role in symptoms of anxiety. Still, more studies with larger samples are needed to investigate whether our findings can be generalized to the overall international student population.

REFERENCES

Andrade MS (2006). International students in English-speaking universities: Adjustment factors. *Journal of Research in International Education, 5*, 131-154. Doi: 10.1177/1475240906065589

Baer RA, Smith G, Lykins E, Button D, Krietemeyer J, Sauer S, Walsh E, Duggan J, & Williams J (2008). Construct Validity of the Five Facet Mindfulness Questionnaire in Meditating and Nonmeditating Samples. *Assessment, 15*, 329-342 Doi: 10.1177/1073191107313003.

Baer RA, Smith GT, Hopkins J, Krietemeyer J, & Toney L (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*, 27-45. Doi: 10.1177/1073191105283504

Brown KW & Ryan RM (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*, 822-848. Doi: 10.1037/0022-3514.84.4.822

Cohen S, Kamarck T, & Mermelstein R (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 38-396. Doi: 10.2307/2136404

Cohen S & Williamson G (1988). Perceived stress in a probability sample of the US In: Spacapam S, Oskamp S, editors. The social psychology of health: *Claremont Symposium on Applied Social Psychology*.

Eisenbeck N, Carreno DF, & Uclés Juárez R (2019). From psychological distress to academic procrastination:

Exploring the role of psychological inflexibility. *Journal of Contextual Behavioral Science*, *13*, 103-108. Doi: 10.1016/j.jcbs.2019.07.007

Fergus TA, Valentiner DP, Gillen MJ, Hiraoka R, Twohig MP, Abramowitz JS, & McGrath PB (2012). Assessing psychological inflexibility: The psychometric properties of the Avoidance and Fusion Questionnaire for Youth in two adult samples. *Psychological Assessment*, *24*, 402-408. Doi: 10.1037/a0025776

Forbes-Mewett H (2019). *Mental Health and International Students: Issues, challenges and effective practice*. International Education Association of Australia (IEAA). Retrieved from: https://www.researchgate.net/publication/334721342_Mental_Health_and_International_Students_Issues_challenges_effective_practice

Glick DM, Millstein DJ, & Orsillo SM (2014). A preliminary investigation of the role of psychological inflexibility in academic procrastination. *Journal of Contextual Behavioral Science*, *3*, 81-88. Doi: 10.1016/j.jcbs.2014.04.002

Greco LA, Lambert W, & Baer RA (2008). Psychological inflexibility in childhood and adolescence: Development and evaluation of the Avoidance and Fusion Questionnaire for Youth. *Psychological Assessment, 20*, 93-102. Doi: 10.1037/1040-3590.20.2.93

Hauschildt K, Gwosc C, Netz N, & Mishra S (2015). *Social and Economic Conditions of Student Life in Europe: Synopsis of Indicators*. *Eurostudent V 2012-2015*. W. Bertelsmann Verlag. Retrieved from: https://www.eurostudent.eu/download_files/documents/EVSynopsisofIndicators.pdf

Hayes SC (2019). Acceptance and commitment therapy: towards a unified model of behavior change. *World Psychiatry*, *18*, 226. Doi: 10.1002/wps.20626

Hayes SC & Hofmann SG (2018). *Process-based CBT: The science and core clinical competencies of cognitive behavioral therapy*. Oakland, CA: New Harbinger Publications

Hayes SC, Luoma, JB, Bond FW, Masuda A, & Lillis J (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour research and therapy*, *44*, 1-25. Doi: 10.1016/j.brat.2005.06.006

Hayes SC, Strosahl KD, & Wilson KG (2012). *Acceptance and Commitment Therapy: The process and practice of mindful change*. *2nd Ed*. New York: The Guilford Press.

Hechanova-Alampay R, Beehr TA, Christiansen ND, & Van Horn RK (2002). Adjustment and Strain among Domestic and International Student Sojourners: A Longitudinal Study. *School Psychology International*, *23*, 458-474. Doi: 10.1177/0143034302234007

Kashdan TB & Rottenberg J (2010). Psychological flexibility as a fundamental aspect of health. *Clinical Psychology Review*, *30*, 865-878. Doi: 10.1016/j.cpr.2010.03.001

Khoshlessan R & Das KP (2019). Analyzing international students' study anxiety in higher education. *Journal of International Students*, *7*, 311-328. Doi: 10.32674/jis.v7i2.383

Kim YK, Maleku A, Lemieu C, Du X, & Chen Z (2019). Behavioral health risk and resilience among international students in the united states: A study of sociodemographic differences. *Journal of International Students*, *9* 282-305. Doi: 10.32674/jis.v9i1.264

Knirsch P (2015). *Measuring values and committed action with the Engaged Living Scale (ELS): psychometric evaluation in populations with minor depression and chronic pain*. Master's thesis, Department of Behavioral Sciences, University of Twente.

Kraemer HC, Morgan GA, Leech NL, Gliner JA, Vaske JJ, & Harmon RJ (2003). Measures of clinical significance. *Journal of the American Academy of Child and Adolescent Psychiatry*, *42*, 1524-1529. Doi: 10.1097/00004583-200312000-00022

Kroenke K, Spitzer RL, & Williams JB (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine*, *16*, 606-613. Doi: 10.1046/j.1525-1497.2001.016009606.x

Kroenke K, Spitzer RL, & Williams JB (2002). The PHQ-15: Validity of a new measure for evaluating the severity of somatic symptoms. *Psychosomatic Medicine*, *64*, 258-266. Doi: 10.1097/00006842-200203000-00008

Lee EH (2012). Review of the psychometric evidence of the perceived stress scale. *Asian Nursing Research*, *6*, 121-127. Doi: 10.1016/j.anr.2012.08.004

Lee JK & Orsillo SM (2014). Investigating cognitive flexibility as a potential mechanism of mindfulness in Generalized Anxiety Disorder. *Journal of Behavior Therapy and Experimental Psychiatry*, *45*, 208-216. Doi: 10.1016/j.jbtep.2013.10.008

Levin ME, Krafft J, Pistorello J, & Seeley JR (2019). Assessing psychological inflexibility in university students: Development and validation of the acceptance and action questionnaire for university students (AAQ-US). *Journal of Contextual Behavioral Science, 12*, 199-206. Doi: 10.1016/j.jcbs.2018.03.004

Levin, M. E., MacLane C, Daflos S, Seeley JR, Hayes SC, Biglan A, & Pistorello J (2014). Examining psychological inflexibility as a transdiagnostic process across psychological disorders. *Journal of Contextual Behavioral Science, 3*, 155-163. Doi: 10.1016/j.jcbs.2014.06.003

Masuda A, Muto T, Tully EC, Morgan J, & Hill ML (2014). Comparing Japanese College Students' and US College Students' Disordered Eating, Distress, and Psychological Inflexibility. *Journal of Cross-Cultural Psychology*, *45*, 1162-1174. Doi: 10.1177/0022022114534982

Masuda A & Tully EC (2012). The role of mindfulness and psychological flexibility in somatization, depression, anxiety, and general psychological distress in a nonclinical college sample. *Journal of Evidence-Based Complementary & Alternative Medicine*, *17*, 66-71. Doi: 10.1177/2156587211423400

Mayer C, Im S, Stavas J, & Hazlett-Stevens H (2019). Mindfulness facets associated with perceived stress: The role of nonreactivity. *Journal of Depression and Anxiety Forecast, 2*, *1009*.

Mori S (2000). Addressing the mental health concerns of international students. *Journal of Counseling and Development*, *78*, 137-144. Doi: 10.1002/j.1556-6676.2000.tb02571.x

OECD (2019). *Education at a Glance 2019: OECD Indicators*, Paris: OECD Publishing.

Peltz JS, Rogge RD, Bodenlos JS, Kingery JN, & Pigeon WR (2020). Changes in psychological inflexibility as a potential mediator of longitudinal links between college students' sleep problems and depressive symptoms. *Journal of Contextual Behavioral Science, 15*, 110-122. Doi: 10.1016/j.jcbs.2019.12.003

Räsänen P, Muotka J, & Lappalainen R (2020). Examining mediators of change in wellbeing, stress, and depression in a blended, Internet-based, ACT intervention for university students. *Internet Interventions*, *22,* 100343. Doi: 10.1016/j.invent.2020.100343

Rice G, Choi CC, Zhang Y, Morero YI, & Anderson D (2012). Self-critical perfectionism, acculturative stress, and depression among international students. *The Counselling Psychologist, 40*, 575-600.

Roemer L, Salters K, Raffa SD, & Orsillo SM (2005). Fear and avoidance of internal experiences in GAD: Preliminary tests of a conceptual model. *Cognitive Therapy and Research*, *29*, 71-88. Doi: 10.1007/s10608-005-1650-2

Russell J, Rosenthal D, & Thomson G (2010). The international student experience: Three styles of adaptation. *Higher Education*, *60*, 235-249. Doi: 10.1007/s10734-009-9297-7

Schmalz JE & Murrell AR (2010). Measuring experiential avoidance in adults: The Avoidance and Fusion Questionnaire. *International Journal of Behavioral Consultation and Therapy*, *6*, 198. Doi: 10.1037/h0100908

Shadowen NL, Williamson AA, Guerra NG, Ammigan R, & Drexler ML (2019). Prevalence and correlates of depressive symptoms among international students: implications for university support offices. *Journal of International Students, 9*, 130-149. Doi: 10.32674/jis.v9i1.277

Sherry M, Thomas P, & Chui WH (2010). International students: a vulnerable student population. *Higher Education, 60*, 33-46. Doi: 10.1007/s10734-009-9284-z

Spitzer RL, Kroenke K, Williams JBW, & Löwe B (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, *166*, 1092-1097. Doi: 10.1001/archinte.166.10.1092

Sümer S, Poyrazli S, & Grahame K (2008). Predictors of Depression and Anxiety Among International Students. *Journal of Counseling & Development, 86*(4), 429-437. Doi: 10.1002/j.1556-6678.2008.tb00531.x

Tavakoli N, Broyles A, Reid EK, Sandoval JR, & Correa Fernández V (2019). Psychological inflexibility as it relates to stress, worry, generalized anxiety, and somatization in an ethnically diverse sample of college students. *Journal of Contextual Behavioral Science*, *11*, 1-5. Doi: 10.1016/j.jcbs.2018.11.001

Trindade IA, Ferreira C, Pinto Gouveia J, & Nooren L (2016). Clarity of Personal Values and Committed Action: Development of a Shorter Engaged Living Scale. *Journal of Psychopathology and Behavioral Assessment*, *38*, 258-265. Doi: 10.1007/s10862-015-9509-7

Trompetter HR (2014). *ACT with pain: measurement, efficacy and mechanisms of acceptance & commitment therapy*. [PhD Thesis - Research UT, graduation UT, University of Twente]. Universiteit Twente. Doi: 10.3990/1.9789036537087

Tull MT, Gratz KL, Salters K, & Roemer L (2004). The Role of Experiential Avoidance in Posttraumatic Stress Symptoms and Symptoms of Depression, Anxiety, and Somatization. *The Journal of Nervous and Mental Disease*, *192*, 754-761. Doi: 10.1097/01.nmd.0000144694.30121.89

Tyndall I, Waldeck D, Pancani L, Whelan R, Roche B, & Pereira A (2020). Profiles of Psychological Flexibility: A Latent Class Analysis of the Acceptance and Commitment Therapy Model. *Behavior Modification*, *44*, 365-393. Doi: 10.1177/0145445518820036

Valdivia Salas S, Martín Albo J, Zaldívar P, Lombas AS, & Jiménez TI (2017). Spanish Validation of the Avoidance

and Fusion Questionnaire for Youth (AFQ-Y). *Assessment, 24*, 919-931. Doi: 10.1177/1073191116632338

Wilton L & Constantine MG (2003). Length of Residence, Cultural Adjustment Difficulties, and Psychological Distress Symptoms in Asian and Latin American International College Students. *Journal of College Counseling, 6*, 177-186. Doi: 10.1002/j.2161-1882.2003.tb00238.x

Zvolensky MJ & Leventhal AM (2016). Affect and Health Behavior co-Occurrence: The Emerging Roles of Transdiagnostic Factors and Sociocultural Factors. *Behavior Modification, 40*, 3-6. Doi: 10.1177/0145445515627307

Received, September 16, 2022
Final Acceptance, December 16, 2022