Factors affecting academic stress: Comparison of students studying in Malaysia and Ireland

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## Abstract

**Aims:** Stress may affect students' mental health and their academic performance. This study focuses on academic stress (AS) in college students. Different factors were found in previous literature to affect AS in college students. This study aimed to examine the association between factors (self-esteem, depression, family support, and coping strategies) and AS. This study also aimed to examine the cultural differences across country of study to address literature gaps. **Method:** A cross-sectional study was conducted with a total of 70 college students from Malaysia and Ireland. A survey questionnaire was administered to participants through social media. It consisted of an informed consent, demographic questions, the Rosenberg Self-Esteem Scale (RSES), the Beck Depression Inventory-II (BDI-II), the Undergraduate Stress Questionnaire (USQ), the Multidimensional Scale of Perceived Social Support (MSPSS), the Brief-COPE Inventory (BCI) and a debriefing sheet. **Results:** Majority of the respondents were females (60.0%) and age from 18 – 34 years (98.6%). Depression and emotion-focused coping are moderately, positively correlated with AS. Students studying in Ireland was found to score higher in AS than students studying in Malaysia (mean difference = 2.73). Depression ($p = .011$) and emotion-focused coping ($p = .009$) statistically predict AS. Age (*beta* = -.25, $p = .027$) and country of study (*beta* = .28, $p = .013$), after controlling for other variable, predicts AS with depression being the stronger predictor. **Conclusion:** Results show students studying in Ireland reported higher AS, which was a surprise finding. The findings emphasize the need to recognize factors' influence and cultural differences on AS. Implications for parties related to the student to reduce AS are discussed.

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## Introduction

Stress was found to be a common and rising factor in mental health illnesses for the past years. It was reported that 74% of people cannot cope due to the overwhelming feeling of stress (Mental health statistics: stress, 2020). Stress, according to Hans Selye (Kalat, 2018), is the body's common response to any pressure placed on it. There are various types of stress and stressors, and it is believed to be the cause to mental health illnesses, inability to adapt to different environment and some negative events. Stress was largely researched in various samples of different age groups. However, college students were not as frequently studied for stress. Due to the increasing number of students (47%; Balasegaram, 2019) committing suicide, research has been done looking at the risk factors contributing to suicide. Stressful life events were found to be a leading cause.

Nowadays, college students were expected to be good at everything and a lot are struggling to meet the high expectations society have on them (Pariat, Rynjah, Joplin, & Kharjana, 2014). This leads to them experiencing high levels of stress (6.1%; Statista, 2021b) and burnout. The main stress college students experience is academic stress (AS). AS is described as the body's reaction to academic demands that outdo student's adaptive capacity (Wilks, 2008). Different stressors can contribute to stress. Stressors are situations, challenges or things that triggers emotional or physical stress in an individual ("APA Dictionary of Psychology," n.d.). Stressors include examinations and evaluations, difficult class work, economic or financial difficulties, relationship problems and family issues (Bedewy & Gabriel, 2015) Other researchers (Misra & Castillio, 2004; Misra, McKean, West, & Russo, 2000) found that gender, race and the type of college or university students enrol in are considered stressors as well.

College is a stressful time for many students as most students must adapt to new teaching and learning styles. The number of students enrolling in college for third level education has been growing steadily. There are a total of 227,677 enrolments in 2018/19 in Ireland (Student Demographics 2018/19, n.d.) with 53% female students and 47% male students. In Malaysia there are approximately 706,550 enrolments (Statista, 2021a) in the same year with 58.7% female students and 41.3% male students. In recent years, the influence of culture on how students perceive stress and react to stress has received considerable attention from researchers. For example, several studies investigated differences between international students and local students in perceived stress and the reaction to stress. Some researches focused on students studying in the same country but from different background. To the author's knowledge, there were no studies comparing AS in Malaysian and Irish students. As known, stress greatly impacts adolescents and many mental health conditions develops and emerge during young adulthood. Because Ireland has the youngest population in Europe ("Being young in Europe today - demographic trends - Statistics Explained," 2020), Irish students or students studying in Ireland were chosen to be compared with Malaysian students or students studying in Malaysia. Malaysia was picked because it is geographically distant from Ireland and is culturally distinct from Ireland. According to the author's observations and knowledge, Irish universities tend to have a large age gap (presence of mature students) among students, whereas in Malaysia, all students are of similar age without significant age gap. Hence, one of the aims of this study is to examine how AS differ between two countries (Malaysia and Ireland).

Perception and reaction to stress differs across countries as there is a significant difference in the education system between collectivistic culture and individualistic culture (Manikutty, Anuradha, & Hansen, 2007; Marginson, & Yang, 2021). For example, in collectivist countries, students tend to wait for instructions and are expected to follow and

memorize what was taught. It is not a norm for students to be proactive and ask questions in class. These students focus on obtaining good grades hence poor academic performance, frequent examinations and evaluations are what causes these students stress. Because the individualism culture focuses on "I", students were expected to look for answers and learn by themselves. The lecturer, college and friends' support hence means a lot to these students and stress increase as academic support in school decreases. Furthermore, from Monday to Friday, students from western countries such as Australia and the USA spend six to seven hours at school (Sun, Dunne, & Hou, 2012). Students from Asian schools were found to spend an average of eight hours per day in school, with some spending up to 12 hours per day, six days a week (Sun et al., 2012; Zhao & Zhu, 2009). Studies also found Asian students to have more homework than their western counterparts. However, some research shows that there is no significant difference in cultural difference in stressors contributing to AS, in terms of interaction with lecturers, friends and the university (Kormi-Nouri, MacDonald, Farahani, Trost, & Shokri, 2015).

**Academic stress (AS)**

Due to the breakout of the coronavirus in year 2019, all face-to-face classes and club activities had to be substituted by remote learning. This change was implemented, and online teaching or learning was found to have a serious impact on assessments and evaluation (Sahu, 2020). This affects the mental health of students, including increased depression or anxiety levels (Kowal et al., 2020). These then impact students' performance on learning, well-being and their mental health leading to increased AS and burnout (Salanova, Schaufeli, Martínez, & Bresó, 2010).

Excessive high levels of AS are associated with poor mental health, decline in school performance (Kumaraswamy, 2013; Macan, Shahani, Dipboye, & Phillips, 1990; Ramli,

Alavi, Mehrinezhad, & Ahmadi, 2018) and several physical health problems like decrease in exercise (Weidner, Kohlmann, Dotzauer, & Burns, 1996) and insomnia (Alsaggaf, Wali, Merdad, & Merdad, 2016). High levels of AS could lead to students experiencing symptoms of anxiety and depression, fatigue and some may even drop out of school. AS is mainly influenced by assignments, examinations, and grades (Misra & McKean, 2000). These symptoms could exacerbate during examination periods (Macan et al., 1990).

Stress was found to be affected by different factors which includes demographic, biological, psychological, and environmental factors. Demographic factors include gender (Backović, Ilić Živojinović, Maksimović, & Maksimović, 2012; Misra et al., 2000; Reddy, Menon, & Thattil, 2018), status and socioeconomical background (Kiang, Andrews, Stein, Supple, & Gonzalez, 2013). Environmental factor like social support is also associated with AS. Studies found that the higher social support received, the lower the AS experienced by students (Rayle & Chung, 2007; Wilks & Spivey, 2010). Biological factors like the cortisol level in our body was also found to be associated with stress (Zimmaro et al., 2016) where cortisol levels increase as our stress level increases.

**Self-esteem**

In addition, self-esteem was also found to be a factor that could potentially affect AS in college students. Self-esteem is how an individual evaluate themselves (Overholser et al., 1995). When self-esteem is low, individuals will feel depressed, stressed and a sense of worthlessness. Self-esteem is crucial in affecting AS as it is an essential indicator of coping strategies for stress. Self-esteem is a significant variable in the academic field. It is linked to good academic performance, intrinsic motivation to learn and self-confidence (Choi, 2005)

Studies found a negative correlation between AS and self-esteem (Abouserie, 1994; Michie, Glachan, & Bray, 2001; Mulyadi, Rahardjo, & Basuki, 2016). Filozof, Albertin,

Jones, Steme, Myers, & McDermott. (1998) reported low self-esteem is linked to increased AS, leading to school failure and dropout. This was support by Robinson and Tayler (1991), who conducted research with a sample of 150 students and found that students who underperformed reported lower self-esteem. They also found cultural difference in terms of self-esteem where French students (individualism culture) show higher self-esteem than Japanese students (collectivism culture).

Studies also found that there is a relationship between self-esteem and the psychological well-being in college students. Low self-esteemed students are associated with increased levels of depression (Battle, 1978, 1980). Orth, Robins, & Roberts (2008) indicated that low self-esteem can predict depression. Most students with high AS reported low self-esteem and almost half had significantly high depression scores (Baste & Gadkari, 2014). The finding of the literature imply that low self-esteem and high depression levels are associated with high AS (Sohail, 2013). These studies shows that depression can also affect AS due to it being highly associated with self-esteem.

**Depression**

Depression is prevalent in college students and is positively associated with AS. Beck and Young (1978), Kumaraswamy (1990) as cited in Kumaraswamy (2013), found 25% and 31% college students reporting symptoms of depression respectively. Increased workload, the difficulty of modules and unfavourable grades promotes depression. Depressed students will have difficulty concentrating and remembering as it was found to be able to interfere with cognitive functioning (McLean, 1981, as cited in Fauber, Forehand, Long, Burke, & Faust, 1987). They will be easily distractible and lose interest in studying, influencing AS. These are supported by various studies that obtained similar results (Anderman, 2002; Jayanthi,

Thirunavukarasu, & Rajkumar, 2015; Romo-Nava et al., 2016; Yadusky-Holahan & Holahan, 1983).

Dahlin, Joneborg, & Runeson (2005) conducted a cross-sectional study with a sample of 342 medical students. They concluded the age difference in AS with Year 1 students experiencing the highest levels of AS. Besides, they also reported 12.9% of the students had depressive symptoms. On the other hand, Barker, Howard, Villemaire-Krajden, & Galambos (2018) conducted a within-person study looking at fluctuations in depressive symptoms. Their research found that higher AS is associated with higher depressive symptoms. They also found that the symptoms peaked during examination periods.

Due to culture differences (collectivism and individualism), college students experience different stressors which leads to increased levels of depression. In collectivism culture, academic performance is considered to be important. Students are expected to perform well in school, obtain good grades and reach other's, especially adult's expectations (Chen, Rubin, & Li, 1995). Cole (1991) found that in Chinese schools, students are frequently shamed and humiliated by teachers, peers, and parents, both privately and publicly. This repeated negative feedback exposure increases their AS and inhibits the development of self-esteem which facilitates the development of depression. From this, it can be assumed that social support is associated with depression and AS.

**Family support**

Social support was also found to be negatively associated with depression. This was supported by Matlin, Molock, & Tebes (2011)'s study. They obtained results that suggest that family support protects adolescents directly from depression. Social support is considered a protective factor and was found to increase individuals' resistance to stress (Fernández González, González Hernández, & Trianes Torres, 2015). However, Procidano & Heller

(1983) reported that depressed individuals recognize less support as part of their negative self-esteem instead of it being associated with depression. Students can receive support from friends, family, peers, and other people. Individuals from different age group seeks and receive support from different people to a certain extent. Hence, another factor that could affect AS was social support.

Numerous researches were done looking at peer or other support on college students. Nevertheless, this study will look at family support in college students as family members are as important as peers to college students. Family support is especially important recently due to the recent pandemic whereby all students had to adapt to online learning at home. Rayle & Chung (2007) conducted a study on 533 students and found those who felt supported experienced less AS. Sharaf, Thompson, & Walsh (2009) also reported students who do not receive family support will have increased AS. Students with good family support can achieve good results, cope better with stressors, adjust to changes and handle AS better. Procidano & Heller (1983) found family support to be relatively stable compared to peer support in college students although students perceive friends to be more important. This is supported by another study that indicated peer support is voluntary and that family members are obligated to provide support. (Brannan, Biswas-Diener, Mohr, Mortazavi, & Stein, 2013).

Perceived social support varies across cultures. Although collectivist parents have high expectations on their children which increases AS (Busari, 2012), the collectivistic culture emphasizes on the self being interdependent and having harmonious relationship with others while individualistic culture focuses on being independent. From these, people from collectivistic culture were assumed to seek help and receive more social support than those from individualistic culture (Mortenson, 2006; Shavitt, Cho, Johnson, Jiang, Holbrook, & Stavrakantonaki, 2016). However, there are studies (Kim, Sherman, Ko, & Taylor, 2006; Taylor, Sherman, Kim, Jarcho, Takagi, & Dunagan, 2004) that showed students from

individualistic cultures tend to seek more support and make greater use of campus support facilities. Students from collectivistic culture who were academically distressed tend to avoid instead of seeking support (whether from family or others). They do not articulate their academic problems to others in fear of the potential negative influence on the harmonious relationship with others.

**Coping strategies**

Coping strategies vary and different coping strategies might have different effects on AS. Coping strategies can be categorized into problem-focused and emotion-focused strategies (Brougham, Zail, Mendoza, & Miller, 2009). Emotion-focused strategies entailed expressing emotion and changing expectations whereas problem-focused strategies used behavioural actions such as planning. Studies (Crego, Carrillo-Diaz, Armfield, & Romero, 2016; Struthers, Perry, & Menec, 2000) learned that students using problem-focused strategies cope better, are more adaptive and have lower AS. The opposite goes to emotion-focused strategies, which are associated with undesirable outcomes.

Students with high AS will have a negative effect on their academic performance and well-being (Edwards, Herschberger, Russell, & Market, 2001). Hence, the support received and how students cope with AS are important. Research found that students who cope by receiving emotional support from others are more resilient to AS (Burleson & Goldsmith, 1998). Several studies reported that using social withdrawal as a coping strategy is associated with depressive symptoms (Chang, 2001; Evans & Katona, 1993). As discussed, depression can and is positively associated with AS. This coping strategy is particularly preferred by international students and students from collectivistic culture (Frijda, Kuipers, & Ter Schure, 1989; Mori, 2000). From this, it can be assumed that coping strategies affecting a student's psychological well-being will indirectly affect AS.

Studies were conducted looking at how AS differ in students from different cultural background. AS and coping styles in students of different cultural backgrounds differ. Misra & Castillo (2004) found differences in AS and that American students tend to engage in emotion-focused strategies. Mortenson (2006) further supported this by reporting that although both American and Chinese students reported similar perception of AS, two very different coping strategies were used. Chinese students were found to have strong association between AS and avoidant self-coping strategy. In contrast, Burleson & Mortenson (2003) found no differences between coping strategies. They reported that emotion-focused coping styles were preferred by both the Chinese and U.S. college students.

Students from collectivistic culture view AS as "unacceptable" as distressed feelings not only affect themselves, but also affects the others around them. This is also often associated with a loss of face, whether to themselves or to their family. Hence, students often self-cope and engage in social withdrawal (Frijda et al., 1989; Taylor et al., 2004). The total opposite is reflected on students from individualistic culture. They view AS as a challenge to overcome and often associate AS with failure to attain personal goals and missed opportunities (Mesquita, 2001; Mortenson, 2001). They tend to cope by seeking social support, especially emotional support.

**Present study**

Previous research has been predominantly focused on coping strategies and their effect on stress in college students (Mahmoud, Staten, Hall, & Lennie, 2012; Pariat et al., 2014; Pierceall & Keim, 2007). This study will focus specifically on AS in students, especially third level education students. Other studies focus on either only the psychological factors (Abouserie, 1994; Kumaraswamy, 2013) or environmental factors (Crego et al., 2016; Sharaf et al., 2009) contributing to AS. Social support was widely researched on but there are limited studies that only look at family support (Fernández González et al., 2015; Rayle &

Chung, 2007) in students and how this affects AS. Hence this research aims to explore the association between both internal (depression and self-esteem) and external factors (family support and coping strategies) affecting AS.

Excessive AS could potentially advance into poor mental and physical health leading to some negative outcomes like suicide if not addressed properly. Past researches found depression (Ang & Huan, 2006), support (Renk & Smith, 2007) and other demographics (Karaman, Lerma, Vela, & Watson, 2019) significantly predict AS. This research aims to extend from these literatures and examine how each factor predicts AS. Given the cultural differences between individualistic and collectivistic countries, factors that are associated with AS may differ. For example, due to different societal norms and upbringing, students may have different life experiences and source of stress. The education system and strategies used to cope with stress may differ too across cultures.

Due to the vast differences in culture that was noticed from growing up in a collectivist country (Malaysia) and now studying in an individualistic country (Ireland), this sparked interest in how cultural differences differs and affects AS. Past research looked at differences in AS among individuals from different backgrounds (Misra & Castillo, 2004; Mortenson, 2006). Little is known about the differences between two countries, leading to this research comparing AS in country of study (Malaysia vs Ireland) to address the literature gaps.

The variables will be tested using several questionnaires in this study: Rosenberg Self-Esteem Scale (RSES) will examine self-esteem levels. Multidimensional Scale of Perceived Social Support (MSPSS) will assess the perceived family support received. Depression will be assessed using the Beck Depression Inventory (BDI). Undergraduate Stress Questionnaire (USQ) will measure the AS in participants. The Brief-COPE Inventory (BCI) will provide an understanding of coping strategies used.

This study aims to provide greater understanding of how different factors affect AS in college students. This study aims to examine the association between self-esteem, depression, coping style, family support and AS. This study also aims to investigate how these factors predict AS in college students to identify dominant stressors and find ways to alleviate AS. This study will look at how culture (Malaysian and Irish) influences AS to broaden our knowledge on cultural differences in AS. These aims lead to the formation of the following research questions and hypothesis:

The research questions in this study are (1) how do factors (self-esteem, depression, family support, and coping strategies) affect AS? (2) how does country of study affect AS? (3) to what extent do self-esteem, depression and family support predict higher AS? (4) to what extent does coping strategies predict higher AS? (5) does country of study predict AS after controlling for other variables?

In this study, it is hypothesized that (*H1*) self-esteem, depression, family support, emotion-focused and problem-focused coping will be associated with AS (*H2*) there is a significant difference in country of study on AS (*H3*) depression will significantly predict higher AS (*H4*) emotion-focused coping will significantly predict higher AS (*H5*) country of study will significantly predict AS after controlling for other variables.

## Methodology

### Participants

Participants were recruited using convenience and snowball sampling. A poster consisting of a brief description of the study and the survey link was distributed through the researcher's social media account (Instagram and WhatsApp). Participants were encouraged to share the link with those they thought are eligible to participate. G*Power: Statistical Power Analyses (Faul, Erdfelder, Buchner, & Lang, 2009) was used to estimate the sample size required for a statistically powerful analysis as this study involves hierarchical regression analyses. The estimated sample size is 200 students. This study also involves multiple regression. Tabachnick and Fidell (2013) formula, as follow, (N > 50 + 8$m$; $n$ = number of participants, $m$ = number of PVs) for calculating minimum sample size was used. The minimum sample size of this study was $n$ = 66. No participants received remuneration.

This study's sample consisted of 70 undergraduate students (38.6% male; 60.0% female; 1.4% prefer not to say). To accommodate both the ethical considerations and mature students, mostly in Ireland, this study sampled participants ranging in age from 18 to 50 years old, with a mean age of 21.97 ($SD$ = 3.93). The country of study was relatively evenly distributed among participants with 40 (57.1%) from Malaysia and 30 (42.9%) from Ireland.

### Materials

The questionnaire was comprised of demographic questions and five other scales combined using Google Forms.

**Demographics.** The demographic questions (see Appendix F) include gender (male, female, non-binary, prefer not to say), age and country of study (Malaysia, Ireland).

Participants were asked to indicate the country of study according to the university they are enrolled in.

**Rosenberg Self-Esteem Scale.** The Rosenberg Self-Esteem Scale (RSES; see Appendix A) will be administered to measure levels of self-esteem in participants (Rosenberg, 1965). RSES demonstrates strong reliability with Cronbach's alpha coefficient ranging from .72 to .87 and an average test-retest reliability of .87. (Rosenberg, 1979). RSES demonstrates predictive, concurrent and construct validity. This scale had a good internal reliability within the current study with Cronbach's alpha coefficient of .88. The RSES is originally a Guttman scale but is widely used as a 10-item Likert scale now (Marsland, & Perry, 1973) to measure global self-esteem including both positive and negative thoughts about the self (Torrey, Muesser, McHugo, & Drake, 2000; Sinclair, Blais, Gansler, Sandberg, Bistis, & LoCicero, 2010). This includes sample items like "I feel that I'm a person of worth" and "I certainly feel useless at times". Items will be answered on a four-point Likert scale with a range of 1 being "strongly agree" to 4 being "strongly disagree". The scale will be scored by totalling the points for the 10-items, with the scores ranging from 0 to 30. However, item 2,5,6,8,9 will be reversed scored as these are negatively worded. There was no cut-off score for RSES (Rosenberg, 1965). The higher the points obtained indicates a higher level of self-esteem. The RSES takes approximately 5 minutes to complete.

**Beck Depression Inventory-II.** Beck Depression Inventory-II (BDI-II; see Appendix B) with extensively reported reliability and validity (Hammen, 1980; Richter, Werner, Heerlein, Kraus, & Sauer, 1998) will be measuring depression levels in students. It is sensitive for detecting depression which shows good validity (Wang & Gorestein, 2013). It has been found with internal consistency being described at around .90 (Lee, Lee, Hwang, Hong, & Kim, 2017) and the test-retest reliability ranging from .73 to .96 (Wang & Gorenstein, 2013). This scale had a good internal reliability within the current study,

obtaining Cronbach's alpha coefficient of .90. BDI-II is a revised version created to match the updated DSM-IV criteria for depression. BDI-II is a 21-item self-reported scale and each item is scored using a 4-point Likert scale, with scale values ranging from 0 to 3. Participants will be assessed based on how the participant is feeling in the past two weeks by rating each item like "Sadness" based on the severity of the symptoms, "I do not feel sad, I feel sad much of the time, I am sad all of the time, and I am so sad or unhappy that I can't stand it".  The total score will range from 0 to 63. The higher the scores obtained indicates higher level of depression (0 to 13 = none or minimal depression; 14 to 19 = mild depression; 20 to 28 = moderate depression; 29 to 63 = severe depression). The BDI-II takes approximately 10 minutes to complete.

**Undergraduate Stress Questionnaire.** Undergraduate Stress Questionnaire (USQ) with Cronbach's alpha measuring internal reliability of .86 will be used to measure AS (Akgun, & Ciarrochi, 2003). The USQ is an 83-item checklist of stressful events for college students, including academic or non-academic events. The stressful events were developed from the answers or input from college students (Crandall, Preisler, & Aussprung, 1992; Rospenda, Richman, Wolff, & Burke, 2013). This research will select items that are academically related like "Had a lot of tests" and "Lost of datelines to meet". The total number of items selected is 26 items (see Appendix C) for more details). Participants will check the items that they had experienced in the past semester. The scale scores (yes = 1; no = 0) will be totalled. The total score will range from 0 to 26. The higher the score obtained indicates the higher the AS levels in college students. The USQ takes approximately 5 minutes to complete.

**Multidimensional Scale of Perceived Social Support.** Multidimensional Scale of Perceived Social Support (MSPSS; see Appendix D) will be administered to measure the amount of family support college students received (Zimet, Dahlem, Zimet, & Farley, 1988).

MPSS has been used in many studies and had good internal reliability and validity with Cronbach's coefficient alpha of .91 and .93 (Chou, 2000; Dahlem, Zimet, & Walker, 1991; Zimet, Powell, Farley, Werkman, & Berkoff, 1990). It has also been tested to have test-retest reliability of .85 (Zimet et al., 1988). MSPSS assessed the perceived support received from three factor groups which are family (Fam), friends (Fri) and significant others (SO). MSPSS is chosen to measure the perceived social support, specifically family support, college students received because the scale analyses the three sources of support separately (Zimet et al., 1990). MSPSS is a self-explanatory, self-reported, 12-item scale that will be easily administered. The scale uses a 7-point Likert scale (1 = very strongly disagree; 7 = very strongly agree) to assess the level of perceived support received. There will be four items for each subscale. The score reports the overall score as well as scores for each of the subsets respectively (Zimet et al., 1988). The family support score will be focused on in this study, hence only four questions from the family subscale will be administered to the participants. The MSPSS questionnaire will contain the following questions: "My family really tries to help me; I get the emotional help and support I need from my family; I can talk about my problems with my family and My family is willing to help me make decisions". MSPSS-Family scale had a good internal reliability within the current study, obtaining Cronbach's alpha coefficient of .86. The scoring method for the average family social support subscale would be dividing the sum of all items by four. The higher the average score, the higher the levels of family social support. The MSPSS takes approximately 3 minutes to complete.

**Brief-COPE Inventory.** To look at the coping style of each participant, the Brief-COPE Inventory (BCI; Carver, 1997) will be administered. BCI (see Appendix E) originally was widely used in the healthcare industry (Meyer, 2001; Mohanraj, 2015; Yusoff, Low, & Yip, 2010). However, studies have shown that BCI used in student samples also have good reliability and validity (Mahmoud, Staten, Hall, & Lennie, 2012; Miyazaki, Bodenhorn,

Zalaquett, & Ng, 2008; Yuan, Zhang, & Li, 2017; Yusoff, 2010, 2011). BCI is reliable as the overall internal consistency is high with Cronbach's alpha ranging from 0.70 to 0.88 (Mahmoud et al., 2012; Meyer, 2001; Yusoff, 2010, 2011). However, some studies demonstrated BCI having average internal consistencies with Cronbach's alpha ranging from 0.5 to 0.6 (Yuan, Zhang, & Li, 2017; Yusoff. 2011). BCI had a good internal reliability within the current study with Cronbach's alpha coefficient of .81.  BCI is a shorter version of the original COPE Inventory which consisted of 60-items. BCI is a self-reported 28-items questionnaire that measures 14 different scales (Carver, 1997; Khalili, Farajzadegan, Mokarian, & Bahrami, 2013; Mahmoud et al., 2012). Each scale comprises two items. The 14 scales measured can be categorized into problem-focused coping skills and emotion-focused coping skills. Problem-focused coping skills include eight scales which are acceptance, religion, positive reframing, planning, instrumental support, active coping, emotional support, and humour. The remaining six scales (self-distraction, venting, self-blame, behavioural disengagement, denial, and substance use) were under the emotion-focused coping skills. Participants' responses will be recorded using a 4-point Likert scale (1 = I have not been doing this at all; 4 = I have been doing this a lot). The scores for the two items of each scale will be summed up. The subscale that has the highest scores will be the coping style that participants' use the most. To understand which coping strategy participants typically use, the scores of the subscales will be summed up. Problem-focused coping strategies will have scores ranging from 8 to 32 while emotion-focused coping strategies will have scores ranging from 6 to 24. BCI takes approximately 8 minutes to complete.

**Design and analyses**

The current study is a cross-sectional research design. This study is quantitative in nature and survey research was used in collecting data. Mode and frequency of the demographic variables like gender and country of study was obtained. Descriptive statistics

was performed for all continuous variables. Tests of normality were carried out, ensuring all variable meet normality assumptions. Pearson's correlations were conducted to examine the first hypothesis. Independent-samples t-test was conducted to test the second hypothesis. It contained two independent variables (IVs), Malaysian and Irish college students and a dependent variable (DV), AS. Linear multiple regressions were conducted to examine the third and fourth hypothesis. The predictor variables (PVs) include, (3) self-esteem, depression, and family support; (4) emotion-focused coping and problem-focused coping. Criterion variable (CV) for both tests was AS. Two independent-samples t-tests were conducted to examine if significant predictors of AS differ across country of study. Both IVs were Malaysian and Irish college students. The DVs were depression and emotion-focused coping respectively. Hierarchical multiple regression was conducted to examine the last hypothesis. The PVs were age, gender, self-esteem, depression, family support, emotion-focused coping, problem-focused coping, and country of study. The CV was AS.

**Procedure**

Data was collected from college students in both Malaysia and Ireland through an online survey created using Google Form. This study used an anonymous, self-reported questionnaire that does not collect any identifying information to ensure anonymity and confidentiality. A poster containing a brief description of the study, inclusion criteria, and the survey link was created. Convenience sampling took place when the poster was sent to family and friends of the researcher via WhatsApp. The poster was also shared on the researcher's social media account (Instagram and WhatsApp). Participants were encouraged to share the survey link to whoever they think fits the eligibility criteria. Participants were provided with the information sheet (see Appendix I) when they open the link. The information sheet contained all information that participants would have to know including the purpose of the study, potential risks and benefits, participants' role, questionnaires involved and the

researcher's contact information. Participants were informed that they can withdraw at any time before the response is submitted and participation was voluntary. After reading the information sheet, participants were required to provide their consent by ticking a box at the end of the page with the wording of "I consent" (see Appendix G) before they can access the questionnaire.

The questionnaire consisted of six sections. The first section included demographics questions that require participants to report their gender, age, and country of study. The second section was the Rosenberg Self-Esteem scale (RSES; Rosenberg, 1965), measuring levels of self-esteem. The third section was the Beck Depression Inventory-II (BDI-II; Beck et al., 1988) that was widely used in assessing levels of depression in participants. The fourth section consisted of the Undergraduate Stress Questionnaire (USQ; Crandall, Preisler, & Aussprung, 1992) that measured the level of AS. The fifth section of the questionnaire was the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) measuring perceived family support received. The sixth section was the Brief-COPE Inventory (BCI; Carver, 1997), examining the coping style of each participant. Participants took their time to complete the questionnaire. The estimated time to complete was 15 minutes. Once participants complete the questionnaire, a debriefing sheet (see Appendix H) was provided, along with a list of helplines on it.

**Ethical considerations**

This study was approved by the National College of Ireland's Psychology Department's Ethics Committee, which complies with ethical guidelines by The Psychological Society of Ireland and the National College of Ireland. All data was collected in conformity with NCI's ethical guidelines.

As this study explores participant's experiences, variables like depression and AS might be sensitive to some. To address the issue of beneficence, the risks, and benefits of participating in the study were clearly outlined in the information sheet and consent form. Participants might experience psychological distress from taking part in the study. A referral list with helplines was attached to the debriefing sheet (see Appendices H, I & J).

Informed consent (see Appendix G) was obtained to make sure participants understand the study and what their participation would involve. Participants were informed about the purpose of study, duration of study, role of participants, possible risks, inclusion criteria, voluntary participation, and withdrawal rights. Participants were required to tick a "I consent" box at the end of the form indicating their consent to ensure voluntary participation. Participants were informed of their right to withdraw consent at any point of time before submitting their response as no identifying information was collected from the participants, data could not be retrieved to destroy after submission of response.

To guarantee anonymity, no identifying information was asked from the participants. To further safeguard anonymity and confidentiality, all data were stored into a password-encrypted file to which only the research had access. These data were discarded after a specific period.

To have justice means to not be bias in the research according to the Belmont Report (Office for Human Research Protections, 2021). Due to usage of convenience sampling, a degree of bias was included in this study. This was addressed by complying to the ethics and to report results obtained fairly.

## Results

### Descriptive statistics

A total of 70 participants aged between 18 – 50 years old took part in the study. As presented in Table 1, participants were categorised based on age, gender, and country of study. The sample consisted of 27 male participants (38.6%), 42 female participants (60.0%) and 1 participant (1.4%) who prefer not to disclose gender. 40 participants (57.1%) studies in Malaysia while 30 participants (42.8%) studies in Ireland.

Table 1

*Frequencies for sample on age, gender, and country of study (n = 70)*

| Variable | Frequency | Valid % |
|---|---|---|
| **Gender** | | |
| Male | 27.0 | 38.6 |
| Female | 42.0 | 60.0 |
| Prefer not to say | 1.0 | 1.4 |
| **Age Group** | | |
| 18 – 34 years | 69.0 | 98.6 |
| 35 – 50 years | 1.0 | 1.4 |
| **Country of Study** | | |
| Malaysia | 40.0 | 57.1 |
| Ireland | 30.0 | 42.9 |

Descriptive statistics for age, self-esteem, depression levels, AS, family support and coping strategies were presented in Table 2. Preliminary analyses indicated that only age was not normal. The other variables followed the assumptions of normality. Age obtained a significant value of $p < .001$ in the Kolmogorov-Smirnov test of normality, indicating that the null-hypothesis was accepted. The other variables obtained a non-significant result ($p > .05$) in the Kolmogorov-Smirnov test, indicating data are normally distributed. Histograms were inspected. Age and depression obtained positively skewed histograms, family support had negatively skewed histogram while the other histograms were relatively normally distributed. Age had a normal Q-Q plot with dots that were not on the diagonal line and had a relatively large difference between the dots and the diagonal line. Age, depression, and emotion-focused coping had several outliers but for the purpose of the study, these outlying scores were retained.

Table 2

*Descriptive statistics for all continuous variables (n = 70).*

| Variable | *M* [95% CI] | *SD* | *Md* | Std. Error | Range |
|---|---|---|---|---|---|
| Age | 21.97 [21.03 – 22.91] | 3.93 | 21.00 | .47 | 19.00 – 44.00 |
| Self-esteem | 22.97 [21.39 – 24.55] | 6.61 | 22.00 | .79 | 13.00 – 38.00 |
| Depression | 14.24 [12.10 – 16.39] | 9.01 | 13.50 | 1.08 | 0.00 – 41.00 |
| Academic Stress | 9.44 [8.37 – 10.52] | 4.52 | 9.00 | .54 | 1.00 – 20.00 |
| Family Support | 19.89 [18.52 – 21.25] | 5.72 | 20.50 | .68 | 6.00 – 28.00 |
| Emotion Coping | 39.61 [37.95 – 41.28] | 6.99 | 40.00 | .84 | 26.00 – 58.00 |
| Problem Coping | 30.84 [29.53 – 32.15] | 5.50 | 31.00 | .66 | 18.00 – 45.00 |

**Inferential statistics**

A Pearson's correlation coefficient was computed to investigate the relationship between self-esteem, depression, family support, emotion-focused coping, problem-focused coping, and AS. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. All variables were normally distributed. Depression ($r = .30$, $n = 70$, $p = .012$) and emotion-focused coping ($r = .26$, $n = 70$, $p = .027$) were significantly, positively, moderately correlated with AS, see Table 3 below. This indicates that depression and emotion-focused coping shared 9% and 6.76% of variance in common respectively with AS. Results indicate that higher depression levels and emotion-focused coping are associated with higher AS levels. Self-esteem ($r = .18$, $n = 70$, $p = .142$), family support ($r = .04$, $n = 70$, $p = .755$), and problem-focused coping ($r = .03$, $n = 70$, $p = .789$) were non-significantly, positively, weakly correlated with AS, see Table 3 below. Results indicate that self-esteem, family support, and problem-focused coping are not associated with AS.

An independent samples t-test was conducted to compare AS levels between student studying in Malaysia and Ireland. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homogeneity of variance. AS was normally distributed. Levene's test for equality of variance was non-significant ($p = .169$), equal variance is assumed hence assumption of homogeneity of variance was not violated. There was a significant difference in scores, with students studying in Ireland ($M = 11.00$, $SD = 4.84$) scoring higher in AS than students studying in Malaysia ($M = 8.28$, $SD = 3.94$; $t(68) = -2.60$, $p = .011$). The magnitude of the differences in the means (mean difference = -2.73, 95% $CI$: -4.82 – -.63) was medium (Cohen's d = -.62).

Table 3

*Correlations for all continuous variables.*

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1. Age | - | | | | | | |
| 2. Self-esteem | -.14 | - | | | | | |
| 3. Depression | -.12 | .58*** | - | | | | |
| 4. Family support | .04 | -.30* | -.48*** | - | | | |
| 5. Emotion-focused coping | .13 | .14 | .27* | .05 | - | | |
| 6. Problem-focused coping | .16 | -.02 | .00 | .03 | .63*** | - | |
| 7. Academic stress | -.23 | .18 | .30* | .04 | .26* | .03 | - |

Note: *n* = 70; *p* < .05; **p* < .01; ***p* < .001

Linear multiple regression was used to investigate the impact of self-esteem, depression, and family support on AS levels. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity. Correlations between the PV's and CV in the model were examined (see Table 3). Correlations between the PV's were lesser than .90. Tests for multicollinearity indicated that all Tolerance values were above .10 and VIF values were below 10, indicating there was no violation of the assumption of multicollinearity. Scatterplot was inspected and there were no outliers. The model explained 13.10% of the variation in AS levels ($F$ (3, 66) = 3.21, $p$ = .013). As can be seen in Table 4, out of the three PVs, only depression was found to predict AS to a statistically significant level ($\beta$ = .40, $p$ = .011).

Linear multiple regression was used to predict the impact of emotion-focused coping and problem-focused coping on AS levels. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity. Correlations between the PV's and CV in the model were examined (see Table 3).

Correlations between the PV's were lesser than .90. Tests for multicollinearity indicated that all Tolerance values and VIF values were within acceptable range, indicating there was no violation of the assumption of multicollinearity. The scatterplot was inspected and there were no outliers. The model explained 10% of the variation in AS levels ($F$ (2, 67) = 3.70, $p$ = .030). Out of the two PVs, only emotion-focused coping was found to predict AS to a statistically significant level ($\beta$ = .40, $p$ = .009) (see Table 5).

Table 4

*Standard multiple regression predicting academic stress*

| Variable | $R^2$ | B | SE | $\beta$ | t | p |
|---|---|---|---|---|---|---|
| | .13 | | | | | |
| Self-esteem | | .01 | .10 | .02 | .14 | .889 |
| Depression | | .20 | .08 | .40 | 2.61 | .011* |
| Family support | | .19 | .10 | .24 | 1.79 | .077 |

*Note*: $R^2$ = R-squared; $B$ = unstandardized beta; $\beta$ = standardized beta; $SE$ = standard errors of $B$; *$p$ < .05; $n$ = 70

Table 5

*Standard multiple regression predicting academic stress*

| Variable | $R^2$ | B | SE | $\beta$ | t | p |
|---|---|---|---|---|---|---|
| | .10 | | | | | |
| Emotion-focused coping | | .26 | .10 | .40 | 2.71 | .009** |
| Problem-focused coping | | -.18 | .12 | -.22 | -1.49 | .141 |

*Note*: $R^2$ = R-squared; $B$ = unstandardized beta; $\beta$ = standardized beta; $SE$ = standard errors of $B$; *$p$ < .05, **$p$ < .01; $n$ = 70

Two independent samples t-test was conducted to compare depression and emotion-focused coping between country of study. As these two factors were found to significantly predict AS, this sparked interest in examining whether depression and emotion-focused

coping differ between Malaysian and Irish students. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homogeneity of variance. AS was normally distributed. Levene's test for equality of variance was non-significant ($p = .709$, $p = .851$ respectively), equal variance is assumed hence assumption of homogeneity of variance was not violated. There was no significant difference in scores (depression, $p = .677$; emotion-focused coping, $p = .743$), indicating that Malaysian and Irish students do not differ in both depression and emotion-focused coping.

Hierarchical multiple regression was used to assess the capability of country of study (Malaysia vs Ireland) on predicting AS scores, after controlling for the effects of gender, age, self-esteem, depression, family support, emotion-focused coping, and problem-focused coping. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, homoscedasticity, and multicollinearity. An analysis was conducted to test the tolerance and VIF values of each predictor variables, all predictor variables have tolerance value larger than .10 and VIF value below 10. Gender and age were entered at Step 1, significantly explaining 12.20% of the variance in AS scores, $F (2, 67) = 4.65$, $p = .013$. After the entry of self-esteem, depression, family support, emotion-focused coping and problem-focused coping at Step 2, the total variance explained by the model was 23.40%, $F (7, 62) = 2.70$, $p = .017$. Country of study was entered at Step 3 and the total variance explained by the whole model was 30.80%, $F (8, 61) = 3.40$, $p = .003$. Country of study explained an additional 7.5% change of the variance in AS levels, after controlling for gender, age, self-esteem, depression, family support, emotion-focused coping and problem-focused coping, R square change = .07, F change $(1, 61) = 6.60$, $p = .013$. In the final model (see Table 6), only age, and country of study were statistically significant, with country of study recording the highest beta value ($beta = .28$, $p = .013$), followed by age ($beta = -.25$, $p = .027$).

Table 6

*Hierarchical multiple regression predicting academic stress scores*

| Variable | $R^2$ | $R^2$ Change | B | SE | β | t | p |
|---|---|---|---|---|---|---|---|
| 1 | .12 | | | | | | |
| Gender | | | 2.9 | .92 | .26 | 2.28 | .026* |
| Age | | | -.28 | .13 | -.24 | -2.13 | .037* |
| 2 | .23 | .11 | | | | | |
| Gender | | | 1.31 | .95 | .16 | 1.37 | .175 |
| Age | | | -.28 | .13 | -.24 | -2.08 | .042* |
| Self-esteem | | | -.02 | .09 | -.03 | -.21 | .831 |
| Depression Level | | | .17 | .08 | .23 | 1.43 | .159 |
| Family Support | | | .11 | .11 | .12 | 1.06 | .293 |
| Emotion-focused coping | | | .18 | .10 | .27 | 1.71 | .092 |
| Problem-focused coping | | | -.09 | .12 | -.11 | -.77 | .446 |
| 3 | .31 | .07 | | | | | |
| Gender | | | 1.24 | .91 | .16 | 1.36 | .180 |
| Age | | | -.29 | .13 | -.25 | -2.26 | .027* |
| Self-esteem | | | .03 | .09 | .05 | .33 | .740 |
| Depression | | | .08 | .08 | .16 | .98 | .331 |
| Family Support | | | .08 | .10 | .10 | .77 | .444 |
| Emotion-focused coping | | | .18 | .10 | .28 | 1.80 | .077 |
| Problem-focused coping | | | -.09 | .12 | -.11 | -.77 | .444 |
| Country of Study | | | 2.57 | 1.00 | .28 | 2.57 | .013* |

*Note*: $R^2$ = R-squared; *B* = unstandardized beta; *β* = standardized beta; *SE* = standard errors of *B*; *p* < .05; *n* = 70

**Discussion**

This study aimed to investigate the factors (self-esteem, depression, family support, coping strategies, and country of study) affecting and predicting AS. It also aimed to observe the study country differences (Malaysia vs Ireland) on AS.

*H1* was rejected, with results showing only depression and emotion-focused coping had a positive, moderate association with AS, indicating students with higher depression levels who used emotion-focused coping had higher AS. Findings are in line with numerous studies which have demonstrated a positive relationship between depression (Anderman, 2002; Barker et al., 2018) and emotion-focused coping (Crego et al., 2016) with AS. However, it was surprising to find self-esteem, family support, and problem-focused coping to have a non-significant correlation with AS. Findings contrasted prior research that discovered a negative relationship between these factors and AS (e.g. Abourserie, 1994; Rayle & Chung, 2007; Struthers, Perry, & Menec, 2000). One possible explanation for contrasting findings could be a distinct difference in samples where most studies sampled participants from the same country.

Misra & Castillio (2004) found significant differences in students between collectivistic and individualistic countries of study, in line with *H2*. Results indicated students studying in Ireland had higher AS. Although this was an unexpected finding, it contributes to the limited research on cultural differences in AS. Misra & Castillio (2004) also unexpectedly found American participants reporting higher AS than international students. Following results obtained for *H1*, two independent-samples t-tests were conducted to look at the difference between depression and emotion-focused coping in country of study. Results show that there was no significant difference in country of study which contrasted previous findings. Studies (Cole, 1991; Mortenson, 2006) showed that students of collectivistic culture

are more inclined to be associated with emotion-focused coping and develop depression hence reporting higher AS. Further research is required to examine country of study differences in AS, including more countries that represent the collectivistic and individualistic cultures.

Linear multiple regressions were conducted to discover which factor and coping style predicts AS. Results demonstrated that depression and emotion-focused coping could significantly predict higher AS, supporting *H3* and *H4*. Findings support previous studies which suggested students with high levels of depression, and/or use emotion-focused coping will report higher AS. One reason for these results is depressed students being easily distractible and unmotivated to learn, influencing AS (Fauber et al., 1987). Chang (2001) found usage of emotion-focused coping to be associated with depressive symptoms, ultimately affecting AS as they tend to avoid and escape from problems. Hence, results suggest depressed students and those practising emotion-focused coping tend to account for higher AS. Findings demonstrate the likelihood to reduce these unfortunate situations by reducing AS through paying attention and care to those with higher depression levels and/or practises emotion-focused coping as the number of students committing suicide and engaging in undesirable activities due to AS rises.

Although previous studies found gender (Reddy et al., 2018), self-esteem (Mulyadi et al., 2016), depression (Anderman, 2002), and family support (Rayle & Chung, 2007) affecting AS, this study only find age and country of study to significantly predict AS after controlling for other variables, supporting *H5*. An explanation for age to predict AS might be a lack of motivation, concentration, and fear of failure (Busari, 2012). Differences in culture and education system could explain country of study to be a significant predictor for AS (Manikutty et al., 2007). Studies (Ang & Huan, 2006; Zhao, Zhu, & Ma, 2009) found collectivist parents to have higher expectations, instilling fear of failure in students hence the

increase in AS. Sun et al. (2012) described students from collectivist cultures to spend more time studying and competing than students from individualist cultures due to low entrance rates and overloading assignments.

**Implications**

As the present study found correlations between several factors and AS, significant differences in country of study on AS and age, country of study as a significant predictor of AS, procedures and interventions could be implemented to reduce AS. A reduction in AS could lead to lesser suicide cases, reduced individuals negatively influenced by surroundings and peers, and more students enjoying studying. These findings have implications for the development of training and support of the government, school, and parents to pay attention to the students. The government and schools could modify the education system or have workshops to reduce AS in students while retaining beneficial and distinctive aspects that fit the culture and norm. Teachers and parents could receive training to understand the students. They play a huge role in affecting students' self-esteem, teaching helpful coping strategies, and providing support to the students. This study contributes to the understanding of cultural differences in AS by looking at students studying in different countries (Malaysia vs Ireland). For better representations of the population, additional considerations when selecting countries to compare should be taken in future studies.

**Limitations**

The generalizability of this study is restricted due to several limitations. Although current study attempts to examine factors affecting AS and cultural differences in AS, the country of study chosen were limited and could not represent the population. If more countries of study were considered, the results could be more generalised and predictive of AS. Current study tried to control for any confounding variables that could affect AS and the

results. However, there are many factors contribute to AS which should be examined and controlled in further studies.

Current results were biased as most participants were from a younger age group (both Malaysia and Ireland). Results may not be generalised to the population as due to the small sample size, only one participant is from the 35 – 50 age group (representing the mature students). Having a balanced sample could produce different results. Future research may replicate this study with a larger and balanced sample. All questionnaires were self-reported for convenience and to adhere to COVID-19 restrictions because this study was conducted during the pandemic. Self-reported measures could consist of bias as participants may have answered questions in a socially desirable manner. Future research could change the methodology and conduct a study looking at actual behaviour.

Due to the current study being a cross-sectional design, causal relationships could not be inferred. A longitudinal study could be conducted in future to look at the development of the students. This may be beneficial as interventions and procedures to reduce AS could be implemented, and results could be compared to examine causal relationships and fluctuations in AS. Future studies might also benefit from sampling students who plan to study abroad (in countries of opposite cultures) to compare AS studying in different countries to understand cultural differences better.

**Conclusion**

The present study examines the factors affecting AS and how AS differs across countries to expand on the literature to understand cultural differences in AS and the correlations between the factors and AS. It can be concluded that there is a moderate positive relationship between depression, emotion-focused coping and AS. Surprisingly, students studying in Ireland was found to have higher AS than those studying in Malaysia. Future

studies could be conducted to understand why students studying in Ireland reported higher AS. According to previous literature, gender (Backović et al., 2012; Misra et al., 2000) could predict AS. However, according to this study, high AS could be predicted by depression and emotion-focused coping. Furthermore, age and country of study were shown to significantly predict AS. Moreover, students should be able to receive support or consultation on how to manage AS.  Future studies may increase sample size and use a longitudinal design to demonstrate how AS develops over time and which factor predicts AS. It benefits the future development of interventions, workshops, and preventive measures to deal with AS and its associated undesirable outcomes.

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Appendices

Appendix A

Rosenberg Self-Esteem Scale (RSES)

Please record the appropriate answer for each item, depending on whether you 1 = strongly agree; 2 = agree; 3 = disagree or 4 = strongly disagree with it.

| | | |
|---|---|---|
| 1. | On the whole, I am satisfied with myself. | |
| 2. | At times, I think I am no good at all. | |
| 3. | I feel that I have a number of good qualities. | |
| 4. | I am able to do things as well as most other people. | |
| 5. | I feel I do not have much to be proud of. | |
| 6. | I certainly feel useless at times. | |
| 7. | I feel that I'm a person of worth. | |
| 8. | I wish I could have more respect for myself. | |
| 9. | All in all, I am inclined to think that I am a failure. | |
| 10. | I take a positive attitude toward myself. | |

Appendix B

Beck Depression Inventory-II (BDI-II)

Please read each group of statements carefully and pick out one statement that best describes the way you have been feeling during the past two weeks, including today. If several statements seem to apply equally well, choose the highest number for that group. Do not choose more than one statement for any groups.

| 1. Sadness | 4. Loss of pleasure |
|---|---|
| 0 I do not feel sad | 0 I get as much pleasure as I ever did from the things I enjoy |
| 1 I feel sad such of the time | 1 I don't enjoy things as much as I used to |
| 2 I am sad all the time | 2 I don't get real satisfaction out of anything anymore |
| 3 I am so sad or unhappy that I can't stand it | 3 I am dissatisfied or bored with everything |

| 2. Pessimism | 5. Guilty feelings |
|---|---|
| 0 I am not discouraged about my future | 0 I don't feel particularly guilty |
| 1 I feel more discouraged about my future than I used to be | 1 I feel guilty over many things I have done or should have done |
| 2 I do not expect things to work out for me | 2 I feel quite guilty most of the time |
| 3 I feel my future is hopeless and will only get worse | 3 I feel guilty all of the time |

| 3. Past Failure | 6. Punishment feelings |
|---|---|
| 0 I do not feel like a failure | 0 I don't feel l am being punished |
| 1 I have failed more than I should have | 1 I feel I may be punished |
| 2 As I look back, I see a lot of failures | 2 I expect to be punished |
| 3 I feel I am a total failure as a person | 3 I feel I am being punished |

| 7. Self-dislike | 11. Agitation |
|---|---|
| 0 I feel the same about myself as ever | 0 I am no more irritated by things than I ever was |
| 1 I have lost confidence in myself | 1 I am slightly more irritated now than usual |
| 2 I am disappointed in myself | 2 I am quite annoyed or irritated a good deal of the time |
| 3 I dislike myself | 3 I feel irritated all the time |

| 8. Self-criticalness | 12. Loss of Interest |
|---|---|
| 0 I don't feel I am any worse than anybody else | 0 I have not lost interest in other people |
| 1 I am critical of myself for my weaknesses or mistakes | 1 I am less interested in other people than I used to be |
| 2 I blame myself all the time for my faults | 2 I have lost most of my interest in other people |
| 3 I blame myself for everything bad that happens | 3 I have lost all of my interest in other people |

| 9. Suicidal thoughts or wishes | 13. Indecisiveness |
|---|---|
| 0 I don't have any thoughts of killing myself | 0 I make decisions about as well as I ever |
| 1 I have thoughts of killing myself, but I would not carry them out | 1 I put off making decisions more than I used to |
| 2 I would like to kill myself | 2 I have greater difficulty in making decisions more than I used to |
| 3 I would kill myself if I had the chance | 3 I can't make decisions at all anymore |

| 10. Crying | 14. Worthlessness |
|---|---|
| 0 I don't cry any more than usual | 0 I do not feel I am worthless |
| 1 I cry more now than I used to | 1 I don't consider myself as worthwhile and useful as I used to |
| 2 I cry all the time now | 2 I feel more worthless as compared to other |
| 3 I used to be able to cry, but now I can't cry even though I want to | 3 I feel utterly worthless |

| 15. Loss of energy | 19. Concentration difficulty |
|---|---|
| 0 I have as much energy as ever | 0 I can concentrate as well as ever |
| 1 I have less energy than I used to have | 1 I can't concentrate as well as usual |
| 2 I don't have enough energy to do very much | 2 It's hard to keep my mind on anything for very long |
| 3 I don't have enough energy to do anything | 3 I find I can't concentrate on anything |

| 16. Changes in sleeping pattern | 20. Tiredness or fatigue |
|---|---|
| 0 I can sleep as well as usual | 0 I am no more tired or fatigued than usual |
| 1 I sleep somewhat more/ less than usual | 1 I get more tired or fatigued more easily than usual |
| 2 I sleep a lot more/ less than usual | 2 I am too tired or fatigued to do a lot of the things I used to do |
| 3 I sleep most of the day/ wake up 1-2 hours early and can't get back to sleep | 3 I am too tired or fatigued to do most of the things I used to do |

| 17. Irritability | 21. Loss of interest in sex |
|---|---|
| 0 I am no more irritable than usual | 0 I have not noticed any recent change in my |
| 1 I am more irritable than usual | 1 I am less interested in sex than I used to be |
| 2 I am much more irritable than usual | 2 I am much less interested in sex now |
| 3 I am irritable all the time | 3 I have lost interest in sex completely |

| 18. Changes in appetite |
|---|
| 0 I have not experienced any changes in my appetite |
| 1 My appetite is somewhat less/ greater than usual |
| 2 My appetite is much less/ greater than before |
| 3 I have no appetite at all/ crave food all the time |

Appendix C

Undergraduate Stress Questionnaire (USQ) with 26 items for this research

Please check the appropriate stressors in your life that have affected you during the past semester.

| | | | | |
|---|---|---|---|---|
| 1. | _____ | Had a lot of tests | 14. | _____ | Performed poorly at a task |

1. _____ Had a lot of tests

2. _____ Its finals weeks

3. _____ Assignments in all classes due the same day

4. _____ Lots of deadlines to meet

5. _____ You have a hard upcoming week

6. _____ Went into a test unprepared

7. _____ Did worse than expected on test

8. _____ Had projects, research paper due

9. _____ Did badly on a test

10. _____ Thought about unfinished work

11. _____ No sleep

12. _____ Had a class presentation

13. _____ Working while in school

14. _____ Performed poorly at a task

15. _____ Can't finish everything you needed to do

16. _____ Crammed for a test

17. _____ Trying to decide on major

18. _____ Noise disturbed you while trying to study

19. _____ Can't understand your professor

20. _____ Trying to get into your major or college

21. _____ Registration for classes

22. _____ Stayed up late writing a paper

23. _____ Problems with your computer

24. _____ Spoke with a professor

25. _____ Got to class late

26. _____ Sat through a boring class

Appendix D

Multidimensional Scale of Perceived Social Support (MSPSS) – Family

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement with 1= very strongly disagree; 2 = strongly disagree; 3 = mildly disagree, 4 = neutral, 5 = mildly agree; 6 = strongly agree; 7 = very strongly agree.

1. My family really tries to help me.                                   _____

2. I get the emotional help & support I need from my family.            _____

3. I can talk about my problems with my family.                        _____

4. My family is willing to help me make decisions.                     _____

Appendix E

Brief-COPE Inventory (BCI)

The following questions ask how you have sought to cope with a hardship in your life. Please read the statements and indicate how much you have been using each coping style.

| | I haven't been doing this at all | I've been doing this a little bit | I've been doing a medium amount | I've been doing this a lot |
|---|---|---|---|---|
| 1. I've been turning to work or other activities to take my mind off things. | | | | |
| 2. I've been concentrating my efforts on doing something about the situation I'm in. | | | | |
| 3. I've been saying to myself "this isn't real". | | | | |
| 4. I've been using alcohol or other drugs to myself feel better. | | | | |
| 5. I've been getting emotional support from others. | | | | |
| 6. I've been giving up trying to deal with it. | | | | |
| 7. I've been taking action to try to make the situation better. | | | | |

| 8. I've been refusing to believe that it has happened. | | | |
|---|---|---|---|
| 9. I've been saying things to let my unpleasant feeling escape. | | | |
| 10. I've been getting help and advice from other people. | | | |
| 11. I've been using alcohol or other drugs to help me get through it. | | | |
| 12. I've been trying to see it in a different light, to make it seem more positive. | | | |
| 13. I've been criticizing myself. | | | |
| 14. I've been trying to come up with a strategy about what to do. | | | |
| 15. I've been getting comfort and understanding from someone. | | | |
| 16. I've been giving up the attempt to cope. | | | |
| 17. I've been looking for something good in what is happening. | | | |

| | | | |
|---|---|---|---|
| 18. I've been making jokes about it. | | | |
| 19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping. | | | |
| 20. I've been accepting the reality of the fact that it has happened. | | | |
| 21. I've been expressing my negative feelings. | | | |
| 22. I've been trying to find comfort in my religion or spiritual beliefs. | | | |
| 23. I've been trying to get advice or help from other people about what to do. | | | |
| 24. I've been learning to live with it. | | | |
| 25. I've been thinking hard about what steps to take. | | | |
| 26. I've been blaming myself for things that happened. | | | |

Appendix F

Demographic questions

1. Gender

    a. Male

    b. Female

    c. Non-binary

    d. Prefer not to say

2. Age

3. Country of study (Please answer according to the college/ university you are enrolled in. If you are enrolled in and are studying in an Irish college, please choose Ireland and vice versa.)

    a. Malaysia

    b. Ireland

Appendix G

Informed consent

**Title: Factors affecting academic stress: A comparison between Malaysian and Irish college students**

I would like to invite you to take part in a research study. Before you decide, you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully. If you have any questions about the information provided, feel free to contact me using the details provided at the end of this sheet. Take time to decide whether or not you would like to take part. You are encouraged to take a screenshot of this page to keep a copy of your informed consent.

**Who I am and what this study is about?**

I am a final-year psychology student at the National College of Ireland (NCI). I am conducting a study for my final year thesis and would like to invite you to take part in my research. This study aims to provide a greater understanding of how different factors affect academic stress and how the perception of academic stress and coping style differ between Malaysian and Irish college students. Factors include depression, self-esteem, coping strategies and family support. This study would also investigate the role of status (Malaysian or Irish college student), depression, self-esteem, coping strategies and family support in predicting academic stress. This study is being carried out under the supervision of Dr. David Mothersill.

**What will taking part involve?**

Taking part in this research involves a completion of a set of questionnaires with six sections including a few demographics questions. This includes questions that records your age, gender and your status (Malaysian or Irish college student).

The second section is the Rosenberg Self-Esteem scale (RSES) measuring self-esteem in individuals. This questionnaire contains 10 questions. All questions will be answered on a 4-point Likert scale with 1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree.

The third section will contain the Beck Depression Inventory – II (BDI-II) that assess levels of depression. This questionnaire contains 21 questions. You will choose which statement best describes you out of the four provided.

The Undergraduate Stress Questionnaire (USQ) in the fourth section examines the academic stress levels. It contains 26 statements, and you will have to tick any statement that have affected you.

Section five is the Multidimensional Scale of Perceived Social Support (MSPSS) measuring perceived family support received. This contains 11 items. You will answer each item on a scale of 1 (very strongly disagree) to 7 (very strongly agree).

Lastly, the Brief-COPE Inventory (BSI) in included in section six and this examines your coping style. It is a 28-item questionnaire. You will answer each item on a scale of 1 (I haven't been doing this at all) to 4 (I've been doing this a lot). This questionnaire should take about 15 to 20 minutes to complete, and it can be completed in your own time. This will take place online using Google Form to record your responses.

**Who can take part?**

You must be within the age range of 18 to 50, currently residing in the Republic of Ireland or in Malaysia, a registered undergraduate or postgraduate student currently enrolled in any universities in Ireland or Malaysia, can read and understand English.

**Do you have to take part?**

No, you are under no obligation to take part in this research. All participation would be voluntary. There will be no remuneration. If you decide take part in this research, you will be asked to provide consent and read a copy of the information sheet. You may screenshot the information sheet and consent sheet for your own records.

You are still free to withdraw at any time without giving a reason during the survey. All data would be returned deleted. A decision to withdraw at any time during your participation, will not bring any negative outcomes. You can do this at any time by simply closing the browser window and exiting the questionnaire. However, do understand that once you have submitted your response, you will not be allowed to withdraw your data will be collected anonymously, making it impossible to identify.

**What are the possible risks and benefits of taking part?**

There is no risk of loss of privacy as all information and data collected will be anonymous and confidential.

However, there is a chance for possible physical risk that result or emerge from mental or emotion risks during or following the completion of this study. As this study assesses academic stress and depression, you might feel distress or uncomfortable. If you experience any uncomfortableness, I encourage you to reach out and contact the helplines provided.

There are no direct benefits for taking part in this study. However, your participation and the data gathered will increase our understanding on this topic.

**Will taking part be confidential?**

Yes, all data that is collected from you during the research will be kept confidential. You will not be providing any identifying information. Google Forms will be used to collect your responses and once you submit your responses, there will be no personal identifying

information about you. Google Forms does not collect any identifying information from the participants hence you will not be identifiable. All data will be kept securely in a password-encrypted folder in the researcher's laptop which only the researcher have access to. On completion of the research, the data will be retained on the researcher's laptop and after ten years, all data will be destroyed.

**What will happen to the results of the study?**

The results obtained will be used in my thesis that will be submitted to the National College of Ireland. It will not be published but may be used for teaching purposes.

**Who should you contact for further information?**

For further information, please feel free to contact E Qing Kee at x19118520@student.ncirl.ie or Dr. David Mothersill at david.mothersill@ncirl.ie.

**Thank you.**

I have read and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I voluntarily agree to take part in this study.

By ticking the "I consent" box below, you agree that you age 18 to 50, are a registered part-time or full-time undergraduate or postgraduate student currently enrolled in any universities in Malaysia or Ireland and would like to participate.

I consent ☐

Appendix H

Debriefing sheet

**Title: Factors affecting academic stress: A comparison between Malaysian and Irish college students**

**E Qing Kee:**

Thank you for taking part in this study. The following will provide you with full details of the study in which you have participated.

**Purpose of study**

This study aims to provide a greater understanding of how each factor affects academic stress. Academic stress is the stress one experience in response to academic-related demands that exceed the adaptive ability of students. This study is interested in understanding how different factors predict academic stress. This is important as the early discovery of what are the stressors enables one to reduce the risk of being stressed out and apply coping strategies to reduce stress. This study will also be looking at the difference between Malaysian and Irish college students in academic stress levels. Factors contributing to academic stress and the coping strategies used can differ, hence this study is interested to look at the differences across cultures.

**How was this tested?**

You were asked to complete a questionnaire with six sections including demographic questions, the Rosenberg Self-Esteem scale (RSES; Rosenberg, 1965) to measure self-esteem, the Beck Depression Inventory – II (BDI-II; Beck et al., 1988) that assess levels of depression, the Undergraduate Stress Questionnaire (USQ; Crandall, Preisler, & Aussprung, 1992) examining the academic stress levels, the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) measuring perceived family support received and Brief COPE Inventory (BCI; Carver, 1997) measuring academic stress levels.

**Confidentiality**

All information provided will be anonymous and confidentiality will be ensured. All data will be stored in password-encrypted file on the researcher's password protected laptop. The results obtained will be submitted to National College of Ireland for my final year thesis.

If you have concerns regarding participation, please contact E Qing Kee at x19118520@student.ncirl.ie. or my supervisor, Dr. David Mothersill at david.mothersill@ncirl.ie

If you are experiencing any distress from participating in this study, please do not hesitate to contact the researcher or supervisor of this research. It is also advised that you contact:

*For students in Ireland:*

Samaritans (emotional support helpline) - 116 123

Grow (mental health helpline) - 1890 474 474

Aware (depression support helpline) - 1800 80 48 48

*For students in Malaysia:*

Befrienders (emotional support helpline) - 03 7956 8145 [KL]; 05 547 7933 [Ipoh]; 04 281 5161 [Penang]

MMHA (mental health helpline) - 03 2780 6803

**Thank you again.**

Appendix I

Information sheet

**Title: Factors affecting academic stress: A comparison between Malaysian and Irish college students**

I would like to invite you to take part in a research study. Before you decide, you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully. If you have any questions about the information provided, feel free to contact me using the details provided at the end of this sheet. Take time to decide whether or not you would like to take part. You are encouraged to take a screenshot of this page to keep a copy of your informed consent.

**Who I am and what this study is about?**

I am a final-year psychology student at the National College of Ireland (NCI). I am conducting a study for my final year thesis and would like to invite you to take part in my research. This study aims to provide a greater understanding of how different factors affect academic stress and how the perception of academic stress and coping style differ between Malaysian and Irish college students. Factors include depression, self-esteem, coping strategies and family support. This study would also investigate the role of status (Malaysian or Irish college student), depression, self-esteem, coping strategies and family support in predicting academic stress. This study is being carried out under the supervision of Dr. David Mothersill.

**What will taking part involve?**

Taking part in this research involves a completion of a set of questionnaires with six sections including a few demographics questions. This includes questions that records your age, gender and your status (Malaysian or Irish college student).

The second section is the Rosenberg Self-Esteem scale (RSES) measuring self-esteem in individuals. This questionnaire contains 10 questions. All questions will be answered on a 4-point Likert scale with 1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree.

The third section will contain the Beck Depression Inventory – II (BDI-II) that assess levels of depression. This questionnaire contains 21 questions. You will choose which statement best describes you out of the four provided.

The Undergraduate Stress Questionnaire (USQ) in the fourth section examines the academic stress levels. It contains 26 statements, and you will have to tick any statement that have affected you.

Section five is the Multidimensional Scale of Perceived Social Support (MSPSS) measuring perceived family support received. This contains 11 items. You will answer each item on a scale of 1 (very strongly disagree) to 7 (very strongly agree).

Lastly, the Brief-COPE Inventory (BSI) in included in section six and this examines your coping style. It is a 28-item questionnaire. You will answer each item on a scale of 1 (I haven't been doing this at all) to 4 (I've been doing this a lot).This questionnaire should take about 15 to 20 minutes to complete, and it can be completed in your own time. This will take place online using Google Form to record your responses.

**Who can take part?**

You must be within the age range of 18 to 50, currently residing in the Republic of Ireland or in Malaysia, a registered undergraduate or postgraduate student currently enrolled in any universities in Ireland or Malaysia, can read and understand English.

**Do you have to take part?**

No, you are under no obligation to take part in this research. All participation would be voluntary. There will be no remuneration. If you decide take part in this research, you will be

asked to provide consent and read a copy of the information sheet. You may screenshot the information sheet and consent sheet for your own records.

You are still free to withdraw at any time without giving a reason during the survey. All data would be returned deleted. A decision to withdraw at any time during your participation, will not bring any negative outcomes. You can do this at any time by simply closing the browser window and exiting the questionnaire. However, do understand that once you have submitted your response, you will not be allowed to withdraw your data will be collected anonymously, making it impossible to identify.

**What are the possible risks and benefits of taking part?**

There is no risk of loss of privacy as all information and data collected will be anonymous and confidential.

However, there is a chance for possible physical risk that result or emerge from mental or emotion risks during or following the completion of this study. As this study assesses academic stress and depression, you might feel distress or uncomfortable. If you experience any uncomfortableness, I encourage you to reach out and contact the helplines provided.

There are no direct benefits for taking part in this study. However, your participation and the data gathered will increase our understanding on this topic.

**Will taking part be confidential?**

Yes, all data that is collected from you during the research will be kept confidential. You will not be providing any identifying information. Google Forms will be used to collect your responses and once you submit your responses, there will be no personal identifying information about you. Google Forms does not collect any identifying information from the participants hence you will not be identifiable. All data will be kept securely in a password-

encrypted folder in the researcher's laptop which only the researcher have access to. On completion of the research, the data will be retained on the researcher's laptop and after ten years, all data will be destroyed.

**What will happen to the results of the study?**

The results obtained will be used in my thesis that will be submitted to the National College of Ireland. It will not be published but may be used for teaching purposes.

**Who should you contact for further information?**

For further information, please feel free to contact E Qing Kee at x19118520@student.ncirl.ie or Dr. David Mothersill at david.mothersill@ncirl.ie.

**Thank you.**

Appendix J

Consent form

**Consent to take part in research**

- I voluntarily agree to participate in this research study.

- I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any questions without any negative consequences.

- I understand that I cannot withdraw permission to use my data after submitting a response.

- I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.

- I understand that participation involves completing a 15-to-30-minute survey form which consists of six sections including demographic questions, the Rosenberg Self-Esteem scale (RSES; Rosenberg, 1965) to measure self-esteem, the Beck Depression Inventory – II (BDI-II; Beck, Steer & Garbin, 1988) that assess levels of depression, the Undergraduate Stress Questionnaire (USQ; Crandall, Preisler, & Aussprung, 1992) examining the academic stress levels, the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) measuring perceived family support received and Brief-COPE Inventory (BCI; Carver, 1997) measuring academic stress levels.

- I understand that I will not benefit directly from participating in this research.

- I understand that all information I provide for this study will be treated confidentially.

- I understand that in any report on the results of this research, my identity will remain anonymous. This will be done by not collecting identifying information from me.

- I understand that if I inform the researcher that myself or someone else is at risk of harm, they may have to report this to the relevant authorities – they will discuss this with me first but may be required to report with or without my permission.

- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

E Qing Kee, x19118520@student.ncirl.ie; Dr. David Mothersill (supervisor), david.mothersill@ncirl.ie

I have read and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I voluntarily agree to take part in this study.

By ticking the "I consent" box below, you agree that you age 18 and above, are a registered part-time or full-time undergraduate or postgraduate student currently enrolled in any universities in Malaysia or Ireland and would like to participate.

I consent ☐