EMOTION REGULATION AMONG UNDERGRADUATES IN MALAYSIA: DISTRESS TOLERANCE, MINDFULNESS, AND POSITIVE REAPPRAISAL

CHING KAI XUAN

A RESEARCH PROJECT

SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS

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Emotion Regulation among Undergraduates in Malaysia: Distress Tolerance, Mindfulness, and Positive Reappraisal

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Universiti Tunku Abdul Rahman

This research project is submitted in partial fulfilment of the requirements for the Bachelor of Social Science (Hons) Guidance and Counselling, Faculty of Arts and Social Science, Universiti Tunku Abdul Rahman. Submitted on APRIL 2023.

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UAPC3093 PROJECT PAPER II

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SCORE / TRAITS	SCORE	EXCELLENT 4	GOOD 3	AVERAGE 2	LACKING 1
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Organisation		Title/author of paper clearly displayed. Concise presentation of introduction, review of literature, methodology, findings and conclusions.	Shows title/author. Adequately presents introduction, review of literature, methodology, findings and conclusions.	Shows title/author. Presents main ideas of introduction, review of literature, methodology, findings and conclusions.	Title/author are missing. Insufficient coverage of main points of introduction, review of literature, methodology, findings and conclusions.
Competency		Student demonstrates competent knowledge of the subject by explaining the subject with details. Able to answer questions posted by the audience/examiners fluently with confidence.	Student is able to provide sufficient information to enable audience to understand main ideas. Able to answer questions posted by the audience/examiners with noticeable interval.	Student is able to provide basic information with vague and disjointed ideas. Student tried to answer the questions posted by the audience/examiner using common-sense rather than evidence-based answer.	Student is unable convey the information fluently to the audience/examiner. Student is not able to answer the questions posted by the audience/examiner.

Visual Presentation		Visually appealing poster with appropriate colours, organization, and font sizes enhance readability. Strategically positioned graphics and text.	Overall visually appealing. Organisation of content enhances readability. Appropriate font size enhances readability. Content arrangement easily understood. Graphics enhances text.	Visual appeal is adequate. Colours and layout somewhat cluttered. Font size affects readability. Confusing content arrangement. Graphics help to highlight some content.	Visuals lack appeal. Colours and layout cluttered. Hinders readability. Inconsistent font sizes and content arrangement Mismatch of graphics and text.
Mechanics		The slides are flawless with no misspelling, punctuation, or grammatical errors. Provide essential sources and citations using 7th edition APA style.	2 – 3 misspelling, punctuation and/ or grammatical errors in the slides. Provided excessive and cluttered sources and citations.	4 misspelling, punctuation and/ or grammatical errors detected in the slides. Inconsistent citation styles detected.	Slides are riddled with multiple spelling, punctuation and/ or grammatical errors. Does not cite sources.
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VERBAL SKILLS					
Enthusiasm		Demonstrates a strong, positive feeling about topic during entire presentation.	Occasionally shows positive feelings about topic.	Shows little positive feelings toward topic presented.	Shows absolutely no interest in topic presented.
Delivery		Uses a clear voice and speaks at a good pace so audience can hear presentation. Does not read off slides.	Presenter's voice is clear. The pace is a little slow or fast at times. Audience can hear presentation.	Presenter's voice is low. The pace is much too rapid/slow. Audience has difficulty hearing presentation.	Presenter mumbles or talks very fast and speaks too softly for audience to hear and understand.
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		Appropriate facial expression without a zoned-out or confused expression.	Occasionally demonstrate either a zoned-out or confused expression during presentation.	Occasionally demonstrate both zoned-out or confused expressions during presentation.	mistakes. Consistently zoned-out or displays confused expression during presentation.
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Department of Psychology and Counselling
Faculty of Arts and Social Science
UTAR Perak Campus

ACKNOWLEDGEMENT

The current research would not be completed without the support and assistance provided by a few parties. Therefore, I would like to take this opportunity to express my gratitude and appreciation for the people who have supported and helped me throughout the journey of conducting the project.

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CHING KAI XUAN

APPROVAL FORM

The research paper attached herewith, entitled “Emotion Regulation among Undergraduates in Malaysia: Distress Tolerance, Mindfulness, and Positive Reappraisal” written and submitted by Ching Kai Xuan in partial fulfilment of the requirements for the Bachelor of Social Science (Hons) Guidance and Counselling is hereby accepted.

_____ Date: _____

Supervisor

(Mr. Ho Khee Hoong)

ABSTRACT

This research aimed to determine the relationships between emotion regulation, distress tolerance, mindfulness, and positive reappraisal of undergraduates in Malaysia. This research has adopted a quantitative cross-sectional correlational research design, and data were collected through online surveys. A total of 218 samples were gathered through purposive sampling, which involved undergraduates in Malaysia whose age were between 19 years old and 26 years old (M = 21.234; SD = 1.276). Majority of the survey respondents were female (n = 141, 64.68%), followed by male (n = 77, 35.32%). The location of this research and data collection was primarily online platforms such as Instagram and WhatsApp, and University Tunku Abdul Rahman, Kampar campus. However, the participants included undergraduates from several states across Malaysia. Besides the informed consent and demographic information, the instruments that were included in the questionnaire were Difficulties in Emotion Regulation Scale-16 (DERS-16), Distress Tolerance Scale-Short Form (DTS-SF), Mindful Attention Awareness Scale (MAAS), and Positive Reappraisal Subscale. Based on the results, emotion regulation was significantly and positively related to distress tolerance, mindfulness, and positive reappraisal. It was also found out that distress tolerance and mindfulness were significant predictors for emotion regulation, while positive reappraisal was not. Therefore, the findings of this research would provide theoretical evidence for Mindfulness-to-Meaning Theory. Besides, the findings of this research would also provide practical benefits for the mental health care providers who could be dealing with clients with emotion regulation difficulties in their practices, as well as the undergraduates who need to improve their emotion regulation abilities.

Keywords: Emotion regulation, Distress tolerance, Mindfulness, Positive reappraisal, Mindfulness-to-meaning theory

DECLARATION

I declare that the materials and contents in this paper are the end results of my own work, and that due acknowledgement has been given in the bibliography and references to ALL sources, be they printed, electronic, or personal.

Name : CHING KAI XUAN

Student ID : 19AAB03906

Signature : _____

Date : 18th April 2023

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List of Abbreviations

DERS	Difficulties in Emotion Regulation Scale
DTS	Distress Tolerance Scale
MAAS	Mindful Attention Awareness Scale
MLR	Multiple Linear Regression
PPMC	Pearson's Product-Moment Correlation
PRS	Positive Reappraisal Subscale

Chapter 1 Introduction

Background of The Study

Emotion regulation is one of the most rapidly developing areas of research in the psychology field (Gross, 2015). This could be possibly due to the increasing realization of its importance and impacts on people's different aspects of life, which include developmental, social, health, and others (Gross, 2015). That being said, the life of an individual who is experiencing emotion dysregulation or difficulties in emotion regulation could be rather distressing because they do not have the appropriate and effective strategies to manage their negative emotions and to handle the stressful life events in so many aspects. According to Beauchaine et al. (2007), problems with emotion regulation are even known as the "hallmark of mental health disorders", in which they have been associated with mental health disorders and conditions such as depression and anxiety disorders. In fact, increasing attention has been focused on its relationship with mental health conditions and symptoms as well (Bradley et al., 2011). That being said, failing to regulate one's emotions is indeed problematic as it is seen as a risk factor and symptom for a number of psychopathologies (Beauchaine et al., 2007).

Besides the mental health conditions that are mentioned above, perhaps another issue that should also be given more attention are the suicidal and the self-harming behaviours. According to Linehan (1993), these behaviours are generally resulted from failures to cope with negative emotions in a more adaptive and effective way. Multiple researchers (Ennis et al., 2017; Neece et al., 2013), have also reported that difficulties in emotion regulation and these behaviours are indeed interrelated. Therefore, it is important for individuals to develop if not enhance their emotion regulation skills in order to prevent more suicidal and self-harming behaviours from happening. In fact, suicidal cases have already contributed to more

than 70,000 of deaths each year according to the statistics from World Health Organization (2021). This means that the thousands of people might have had difficulties in regulating and coping with their negative emotions during certain moments of distress, and this had eventually costed them their lives. Besides, it is also reported that there is an increasing number of college students who are having difficulties with their mental health, and many other stressors in terms of social, financial, personal, academic, etc. (Arici-Ozcan et al., 2019). That being said, young people around this age might be a high-risk group that needs more attention as they are susceptible to the self-harming behaviours due to their high level of stress and the subsequent negative emotions. In fact, among the various causes of deaths, suicide is reported to be the fourth leading cause for the young people, ranging from 15 to 29 years according to the World Health Organization (2021).

As for Malaysia, it is reported that there were up to 5.8 deaths from suicide in every 100000 individuals in 2019 (Lew et al., 2022). At the same time, it is noted that suicide has become one of the foremost causes of death for young people (15 to 29 years) in Malaysia in 2019 (Chua & Rao, 2021). Furthermore, it is identified that relationship issues, family issues, and academic issues were the main stressors that might result in suicide among the young people in Malaysia (Kok et al., 2011). That being said, individuals, be it from Malaysia or the other countries, being unable to regulate and cope with their negative emotions, especially stress, is indeed an issue that needs attention and perhaps solutions, so that more deaths from suicide could be prevented. In addition, this is also especially true for the young people, which definitely includes the undergraduates who are the research participants in this current study.

In moments of distress, individuals with high distress tolerance ability can regulate and endure their negative emotions more effectively (Leyro et al., 2010). In other words, individuals with low distress tolerance ability are more likely to have difficulties in regulating

and enduring their negative emotions (Jeffries et al., 2015). Nevertheless, this does not mean that the individuals do not use any emotion regulation strategies, nor they do not attempt to regulate their emotions, but the truth is that they have been using the said strategies in a maladaptive manner (Jeffries et al., 2015). For instance, it is found that individuals with low distress tolerance might regulate his or her negative emotions by suppressing or avoiding them, which is seemingly not the most ideal and adaptive method (Jeffries et al., 2015). In relation to that, there are a number of adaptive cognitive strategies that could be used by individuals to regulate emotions, which include but are not limited to cognitive reappraisal, information-seeking, and emotional acceptance (D'Agostino et al., 2017).

According to literature, mindfulness is a state of mind where one does not judge and categorize things or situations as "good" or "bad", and instead accepts them as how they are (Nyklíček, 2010). In addition, while not everyone was born to be mindful, mindfulness could still be cultivated through interventions and practices (Nyklíček, 2010). In fact, the mindfulness-based intervention has also been increasingly used by the practitioners in both clinical and non-clinical settings, and it is reported that the practice of mindfulness has been effective in helping individuals to reduce the intensity and occurrence of negative emotions (Chambers et al., 2009). Mindfulness-based interventions showed effectiveness both when they are used individually and when they are used along with other interventions (Chambers et al., 2009). In fact, Mindfulness-Based Stress Reduction (also known as MBSR), DBT, and Mindfulness-Based Cognitive Therapy (also known as MBCT) which put high emphasis on mindfulness are reported to have shown effectiveness in improving negative emotions and different illnesses of individuals (Chambers et al., 2009).

Finally, positive reappraisal is said to be one of the emotion regulation strategies that could help individuals to deal with negative emotions as well (Garland et al., 2009). In simple terms, positive reappraisal happens when an individual reframes his or her negative thoughts

to positive thoughts, which would in turn influence his or her emotions (Gross, 2014). This simply means that when an individual starts to think positively, he or she would also feel more positive. Besides, positive reappraisal could also improve the symptoms of depression and anxiety disorders, which are two groups of mental disorders that are associated with negative emotions due to difficulties with emotion regulation (Everaert & Joormann, 2019). Therefore, positive reappraisal is indeed an adaptive and active strategy to help individuals to cope with their negative emotional experiences (Martin & Dahlen, 2005). Furthermore, it is reported that mindfulness plays a role in the facilitation of positive reappraisal, which means one needs to be mindful during the process of reappraisal (Garland et al., 2009). That being said, the practice of this strategy would require certain level of efforts as it is a cognitive strategy that should be applied actively (Folkman, 1997).

In short, the current study is focused on the relationships between emotion regulation and the three constructs that seemed to interrelate with one another to a certain extent, which include distress tolerance, mindfulness, and positive reappraisal. In addition, knowing the importance of emotion regulation in the various aspects of one's life, especially in terms of mental health, as well as the negative consequences resulted from emotion dysregulation, this study is also interested to find out the significance of the three selected constructs for the prediction of emotion regulation. With the findings, the field of counselling would definitely be benefited as not only that emotion dysregulation is a risk factor for a number of mental health conditions, but emotion regulation is also the protective factor against them (Beauchaine et al., 2007; Hu et al., 2014; Saxena et al., 2011). Besides, it is reported that in psychotherapies, it is important for therapists, including the counsellors, to include the enhancement of emotion regulation as part of the treatment plan because it would largely improve the outcome of the treatment or intervention (Berking et al., 2008). Therefore, the

results would definitely help by gathering more information regarding emotion regulation and its predictors.

Problem Statement

As mentioned earlier, emotion dysregulation or difficulties in emotion regulation is detrimental to one's life in many aspects, in which mental health is one of them (Gross, 2015). Besides depression and anxiety disorders, many other mental health illnesses have also been associated with emotion regulation issues. Examples include borderline personality disorder, eating disorders, somatic disorders, and etc. (Berking & Wupperman, 2012). At the same time, the issues with emotion regulation might have also resulted in suicidal cases of many individuals around the world (World Health Organization, 2021). In addition, it is reported that the abilities of emotion regulation would improve as one ages (Orgeta, 2009). Therefore, this does not only mean that young people generally have weaker abilities to regulate their emotions, but also mean that they could develop more issues resulting from the difficulties in emotion regulation (Orgeta, 2009). According to research, it is reported that among the young people, undergraduate students are associated with higher levels of stress, poorer mental health, and greater negative emotions as compared to the alumni who have graduated from university (Wyatt & Oswalt, 2013). In fact, undergraduate students in the contemporary society are indeed enduring a huge amount of stress due to the overwhelming academic demands and several other environmental factors such as homesickness and adaptation to independent living at the same time (Pfeiffer, 2001). Therefore, it is a huge concern for the undergraduate population who not only have more difficulties in emotion regulation but are also rather vulnerable due to the number of stressors one has to deal with.

According to research, the utilization of adaptive and effective strategies for emotion regulation, such as positive reappraisal, does indicate greater mental health, and vice versa

(Hu et al., 2014). Besides, it is also reported that greater abilities in emotion regulation also indicate greater subjective well-being of the individuals (Saxena et al., 2011). This means that when individuals are capable of regulating their emotions, they would generally feel more happy and more satisfied with their lives (Saxena et al., 2011). Therefore, it can be seen that emotion regulation is indeed an important skill that can protect individuals from many of the mental and psychological hazards, especially the negative emotions. That being said, research on this area of interest is also important as it would be advantageous to develop not only a more in-depth understanding regarding this, but also the different approaches to improve the abilities of emotion regulation of the individuals.

Distress tolerance and emotion regulation are interrelated to a certain extent, but it remains unclear whether one of the constructs could predict another to a greater extent (Arici-Ozcan et al., 2019; Van Eck et al., 2016). This is said because when one has poor emotion regulation abilities, the person would also suffer from more emotional distress as he or she finds more difficulties to cope with it (Van Eck et al., 2016). Conversely, when one has poor distress tolerance abilities, the person would also develop lower emotion regulation self-efficacy, which in turns influence the actual emotion regulation abilities (Van Eck et al., 2016). That being said, it is seemingly the best if one could develop both emotion regulation and distress tolerance skills. In addition, it is reported that emotion regulation abilities not only correlate with distress tolerance abilities, but also the willingness to tolerate distress (Bardeen et al., 2014). Therefore, knowing that both constructs could influence one another, the current study is also interested in how well distress tolerance could significantly predict emotion regulation among the target population.

In 2010, mindfulness-based interventions and practices are still considered rather new in the field of psychology (Erisman & Roemer, 2010). As in the recent years, the approach has been given increasing attention as an intervention to help individuals deal with emotional

regulation difficulties and emotional issues, indicating its effectiveness and importance in both clinical and non-clinical settings (Kim et al., 2022; Kriakous et al., 2021). Nevertheless, while it is said that mindfulness-based intervention improves the deficits in emotion regulation, it is also reported that the abovementioned practices might actually bring harm to individuals who have major deficits in emotion regulation (Serhatoğlu et al., 2022). Moreover, individuals do not necessarily need to participate in any mindfulness-based intervention or practices to be mindful, and it is natural that some individuals are just more mindful than the others (Goodall et al., 2012). Therefore, the current study is interested to identify the relationship between mindfulness and emotion regulation, as well as the predictive power of mindfulness on emotion regulation among the general undergraduates who mostly have not gone through any intense mindfulness training.

Last but not least, as mentioned earlier, positive reappraisal has been identified as one of the effective emotion regulation strategies (Garland et al., 2009; Martin & Dahlen, 2005). However, it is stated that the in-depth process to which how positive reappraisal actually modifies one's emotions remains unclear (Waugh et al., 2022). According to research, the process of reappraisal, be it negative or positive, contains three stages, which are generation, selection, and implementation of reappraisals (Waugh et al., 2022). In addition, it is reported that emotion changes most significantly during the implementation stage (Waugh et al., 2022). In another words, it simply means that failure to reach the final stage in the process could possibly predict one's failures, or at least a reduced level of effectiveness, in the regulation of his or her emotions. Therefore, it is understood that the application of positive reappraisal is not as simple as it seems, and that it requires conscious efforts to make it successful. Hence, the current study is interested in finding out its relationship with emotion regulation, as well as the significance of its predictive power on emotion regulation among the target population.

Significance of The Study

The current study is important as it could make contributions and benefit multiple parties from the relevant fields. First of all, this study could provide further theoretical support and evidence for the Mindfulness-to-Meaning Theory, which is considered a rather new theory that is developed in 2015 (Garland et al., 2015). According to the authors of the theory themselves, more research and studies indeed need to be done in order to refine their theory (Garland et al., 2015). For instance, the results would be able to tell which parts of the theory could predict emotion regulation better. Therefore, the current study should be able to contribute to the pool of scholastic knowledge and add more useful information for the understanding and the establishment of the theory.

In addition, the current study would also benefit the practitioners in both the clinical and non-clinical settings, such as the counsellors and clinical psychologists who provide psychotherapies to clients. Specifically, it is reported that counsellors in universities are increasingly having students with mental health conditions and emotional issues in the recent years (Storrie et al., 2010). In addition, it is also said that one of the roles of the therapists are to help the clients to improve their abilities to regulate and manage their emotions (Soma et al., 2019). Therefore, it would be definitely beneficial for them because the results of this study would be able to tell how well and how much distress tolerance, mindfulness, and positive reappraisal predict emotion regulation. Thus, it would provide an insight to the practitioners regarding the significance and influence of the abovementioned constructs on the clients' emotion regulation, or their difficulties in emotion regulation which could help them in the development of treatment plans, action plans, and interventions. As mentioned earlier, emotion regulation is an important protective factor for the individuals against mental health hazards. It is evidenced that with greater emotion regulation abilities, one would have healthier mental conditions (Hu et al., 2014; Saxena et al., 2011). Therefore, the current study

would also remind the practitioners, especially the counsellors in university about the importance of emotion regulation itself, and thus encourage the practitioners to pay attention to the emotion regulation deficits of their clients.

Furthermore, as the current study is built on a theory that is mainly about mindfulness, this means that the results of this study do not only indicate the predictive power of the three independent variables, but it would also indirectly indicate the effectiveness of mindfulness-based approaches on the regulation of emotions. As mentioned earlier, it still remains unclear whether or not mindfulness would actually benefit the population as there is contradicting evidence in the pool of literature (Kim et al., 2022; Kriakous et al., 2021; Serhatoğlu et al., 2022). Therefore, this study could help to collect information and determine whether or not mindfulness can be significantly helpful to the target population in improving their emotion regulation, which are the Malaysian undergraduates in this case. Once again, the results could also provide some insights or recommendations to the practitioners regarding the use of mindfulness-based practices.

Last but not least, as mentioned earlier, emotion regulation is undoubtedly important for the mental health of individuals, including the young people in Malaysia. Therefore, the current study would remind individuals, especially the undergraduates about the importance of not only learning but also applying the emotion regulation skills and strategies at times when they are suffering from any sorts of emotional issues due to the various stressors. At the same time, the current study would also provide an insight about how well the Malaysian undergraduates, at least of those who participate in this study, could handle their emotional difficulties for the time being. This piece of information would also be useful for academic staff, especially the university counsellors, to develop relevant programs for the university students.

Research Objectives

There are two research objectives for this study, which include:

1. To identify the relationships between emotion regulation, distress tolerance, mindfulness, and positive reappraisal.
2. To identify whether distress tolerance, mindfulness, and positive reappraisal significantly predict emotion regulation.

Research Questions

Two research questions were formulated under this study in an attempt to accomplish the research objectives listed above, which include:

1. What are the relationships between emotion regulation, distress tolerance, mindfulness, and positive reappraisal?
2. Do distress tolerance, mindfulness, and positive reappraisal significantly predict emotion regulation?

Research Hypotheses

In an attempt to answer the research questions listed above, a list of hypotheses is formulated as listed below:

1. H_1: There are positive relationships between emotion regulation, distress tolerance, mindfulness, and positive reappraisal.

   H_{1a}: There is a positive relationship between emotion regulation and distress tolerance.

   H_{1b}: There is a positive relationship between emotion regulation and mindfulness.

H_{1c}: There is a positive relationship between emotion regulation and positive reappraisal.

2. H_2: Emotion regulation is significantly predicted by distress tolerance, mindfulness, and positive reappraisal.

   H_{2a}: Emotion regulation is significantly predicted by distress tolerance.

   H_{2b}: Emotion regulation is significantly predicted by mindfulness.

   H_{2c}: Emotion regulation is significantly predicted by positive reappraisal.

Conceptual and Operational Definitions of Terms

Emotion Regulation. Emotion regulation has been defined as the process of shaping and influencing one's emotions, and this includes the types of emotions, the occurrences of the emotions, the experiences as well as the expressions of the emotions with the help of various emotion regulation strategies (Gross, 1998; Gross & McRae, 2020). Some examples of emotion regulation are talking to a friend while feeling sad, pounding a cushion while feeling angry, and asking a child to behave while they are throwing tantrums (Gross, 2014). That being said, emotion regulation could also be specifically defined as the regulation of an individual's own emotions (intrinsic) or the regulation of others' emotions (extrinsic) (Gross & McRae, 2020). Therefore, in the context of this study, emotion regulation is conceptually understood as the intrinsic regulation of one's own emotions. In addition, the construct will be measured by a shortened Difficulties in Emotion Regulation Scale (DERS-16), in which higher scores depict poorer emotion regulation (Bjureberg et al., 2015).

Distress Tolerance. Distress tolerance has been defined as an individual's perceived capability as well as behaviours in response to dealing with negative emotions, distressing stressors, and stimuli (Leyro et al., 2010). Specifically, the tolerance of distress includes

moments when an individual tolerates various forms of worries, uncertainties, annoyance, negative psychological states, and physical discomfort (Leyro et al., 2010). However, this construct will be measured with the Distress Tolerance Scale-Short Form (DTS-SF) in this study, which contains only four items in total (Garner et al., 2017). Therefore, the scores of the scale will depict distress tolerance in a more general sense, in which higher scores depict better distress tolerance (Garner et al., 2017).

Mindfulness. The term "mindfulness" has appeared to be a popular jargon and concept in the context of Buddhism since 1881 (Gethin, 2011; Rhys Davids, 1881). At the same time, the term has been defined differently in the context of mindfulness practices which include the MBCT as well as the MBSR (Gethin, 2011). In the mindfulness practices, the term is defined as the process that involves regulation and maintenance of one's own attention and awareness at the present moment during any experience, as well as being open, curious, accepting, and non-judgmental towards the experiences (Bishop et al., 2004). Therefore, the abovementioned definition is adopted in this study, and the construct will be measured using a scale created by Brown and Ryan in 2003, namely the Mindful Attention Awareness Scale (MAAS). There are a total of 15 items on this scale, in which higher scores depict better mindfulness (Brown & Ryan, 2003; MacKillop & Anderson, 2007).

Positive Reappraisal. In order to be able to define positive reappraisal, it is important to understand the meaning of appraisal. In simple terms, appraisal refers to the process which involves the development of one's initial evaluation of their subjective experience towards a particular stimulus, such as a stressor (Lazarus & Folkman, 1984). Therefore, it is understood that positive reappraisal refers to the subsequent reformation of evaluation and perception towards the same stimuli but in a positive direction (positive meanings) (Garland et al., 2009). In other words, positive reappraisal is said to be a meaning-based cognitive coping strategy that is capable of helping individuals to deal with stressors and negative emotions

(Garland et al., 2009). In this study, this construct will be measured using the Positive Reappraisal Subscale from Cognitive Emotion Regulation Questionnaire, which is abbreviated to CERQ (Garnefski et al., 2001). In specific, the subscale that would be used consists of a total of four items, in which higher scores depict greater use of positive reappraisal (Garnefski & Kraaij, 2006).

Chapter 2 Literature Review

Emotion Regulation

In the simplest words, emotion regulation refers to the shaping of how one feels (Gross, 2014). Furthermore, it is noted that it is important to be clear with the concept that emotion regulation refers to the regulation of emotions, instead of the regulation of other constructs by emotions (Gross, 2014). In fact, the number of studies regarding emotion regulation, as well as other similar terms such as difficulties or deficits in emotion regulation, emotion dysregulation, and emotion regulation strategies, has been increasing drastically each year (Gross, 2014). Therefore, with the increasing effort committed to the research in this area, knowledge, and information regarding emotion regulation were also developed more extensively. For example, the goals of emotion regulation could be differentiated in multiple ways, such as intrinsic versus extrinsic, hedonic versus instrumental, explicit versus implicit, and etc. (Sheppes & Gross, 2012).

Moreover, models that could explain the process of emotion regulation were also developed. For instance, the most common and simple model that explains emotion regulation is perhaps the process model of emotion regulation (Gross, 2015). According to the model, the entire process begins with the selection of situations that would elicit emotions, followed by the modification of situations as an attempt to modify the emotions, the deployment of attention in order to redirect or distract one from the emotions, the change in cognitive which refers to reappraisal, and finally the modulation of one's behavioural reactions in response to the emotions that have been fully developed in the previous stages (Gross, 2015). While many studies are still using this model, the model was further extended and evolved to a three stages process by the same author (Gross, 2015). In the extended version, the process includes a stage for identification, a stage for selection, and a stage for

implementation (Gross, 2015; Waugh et al., 2022). In the first stage, one would identify whether or not a particular emotion needs to be regulated; if there is an emotion that needs to be regulated, the process continues to the second stage (Gross, 2015). In the second stage, one would decide on a strategy that is potentially effective for the regulation of emotion, and finally actively apply the chosen strategy during the third stage (Gross, 2015).

Therefore, it can be seen that the emotion regulation strategies indeed play a huge role in the extended version of the process model, especially in the second and third stages (Gross, 2015; Waugh et al., 2022). This could explain the rise in research regarding emotion regulation strategies, as the strategies are basically inseparable from emotion regulation itself according to the model (Gross, 2014). That being said, there are a total of nine cognitive emotion regulation strategies according to a questionnaire developed in 2001, and the nine strategies include both adaptive (i.e., positive reappraisal and acceptance) and maladaptive strategies (i.e., self-blame and rumination) (Balzarotti et al., 2014; Garnefski et al., 2001). However, though all of the strategies would be able to help in regulating the emotions of individuals to a certain extent, the effects of each strategy on individuals are not the same (Balzarotti et al., 2014). For instance, positive reappraisal is reported to have significantly improved the well-being of the research participants, but self-blame is reported to have done the opposite (Balzarotti et al., 2014).

Moreover, emotion regulation is also always associated with mental health and different psychopathologies (Gross & Jazaieri, 2014; Sheppes et al., 2015). This is because a number of mental health conditions are characterized by difficulties in emotion regulation, or emotion dysregulation (Gross & Jazaieri, 2014). Specifically, it is mentioned that the mental health conditions are associated with emotions with abnormal intensity and duration (Gross & Jazaieri, 2014). For instance, specific phobia is characterized by fear that lasts for more than six months, and fear that is too much as compared to the “normal” individuals (American

Psychiatric Association, 2022). Besides specific phobia, the other mental health conditions that are associated with deficits in emotion regulation include social anxiety disorder, antisocial personality disorder, borderline personality disorder, depression, and etc. (Gross & Jazaieri, 2014). In relation to that, Dialectical Behavioural Therapy (DBT) was developed initially for individuals with borderline personality disorder with the purpose of improving their emotion regulation (Linehan, 2014). Therefore, DBT groups were designed to focus on the learning of four skills, which include skills for improving emotion regulation, skills for improving distress tolerance, skills for practicing mindfulness, and skills for improving interpersonal effectiveness (Linehan, 2014). Besides DBT, some other therapies that the practitioners are currently using to enhance their clients' or patients' emotion regulation consist of Acceptance Commitment Therapy, Cognitive Behavioural Therapy, etc. (Fassbinder et al., 2016; John & Steven, 2001; Suveg et al., 2009). Each of the therapies has its own unique features that can relate to emotion regulation. For instance, one of the core skills in CBT, reframing, is also known as an important emotion regulation strategy (D'Agostino et al., 2017).

Distress Tolerance

In the pool of literature, distress tolerance is understood in two ways. First of all, it simply refers to one's capability to endure the distressing negative emotional experiences (Jeffries et al., 2015). Secondly, distress tolerance is also referred to as one's persistence in the activities or behaviours that are driven by goals while being under an emotionally distressing circumstance (Bornovalova et al., 2012; Conway et al., 2020). While both explanations seemed to overlap one another, it can be seen that the former is broader and more general, while the latter is relatively more comprehensive. In addition, it can be seen that both of the explanations have linked distress tolerance to some sort of internal control over one's negative emotions so that they do not affect the person on the outside, just like

emotion regulation. Furthermore, it is said that distress tolerance does not only associate with emotion regulation, but also cognitive and physical regulation (Arici-Ozcan et al., 2019).

Nevertheless, regardless of how the authors explained the construct, distress tolerance is always associated with various kinds of mental health conditions, including substance abuse, borderline personality disorder, suicidal intentions, and etc. (Conway et al., 2020). Among the abovementioned mental health conditions, distress tolerance correlates with borderline personality disorder the most, which is most likely due to the nature of the disorder in which individuals would experience a lot of emotional disturbances (Conway et al., 2020; Kiselica et al., 2014). At the same time, distress tolerance is also reported to have negative relationships with behavioural issues, such as gambling addiction, self-injuries, binge-eating, substance use, and etc. (Bornovalova et al., 2012). This is in line with the mental health conditions that were mentioned earlier, but just from the behavioural perspective. Therefore, this has shown that it is true that distress tolerance plays a part as a protective factor to a certain extent that could influence emotional, behavioural, and cognitive regulation of one's psychological issues (Arici-Ozcan et al., 2019; Schussler et al., 2018).

In Dialectical Behavioural Therapy, distress tolerance is one of the four major skills that were intended to be taught to the clients or patients with borderline personality disorder (Linehan, 2014). However, increasing evidence has also reported the effectiveness of this therapy on other mental health conditions as well (Linehan, 2014). In addition, though emotion regulation is also one of the four skills in DBT, it is reported that the emotion regulation of the research participants in the study has largely increased after going through the distress tolerance skills training (Muhomba et al., 2017). Furthermore, another study has also emphasized the importance of distress tolerance skills in DBT in improving the mental health conditions of patients with borderline personality disorder in a clinical setting,

indicating the significance of distress tolerance in managing emotional difficulties (Zeifman et al., 2020). Therefore, these are in line with the hypotheses in the current study.

Mindfulness

The word “mindfulness” was originated from the Buddhist language as a combination of two terms that mean “awareness” and “clear understanding” in the same language (Grecucci et al., 2015). Therefore, being mindful literally means being attentive to what is happening (Grecucci et al., 2015). Furthermore, mindfulness is also differentiated into state mindfulness and trait mindfulness. That being said, state mindfulness simply refers to the state of being mindful (i.e., during meditation), while trait mindfulness refers to one’s predisposing mindfulness in day-to-day situations (Kiken et al., 2015). In addition, it is reported that when one repeatedly enters the mode of state mindfulness through meditation or any other mindfulness-based practices, the mindful trait of the person would also increase; consequently, the person would also become less distressed overall (Bravo et al., 2017; Kiken et al., 2015). Nevertheless, it was also found that trait mindfulness is positively correlated to negative emotions regulation, and negatively correlated to lower level of distress (Dillard & Meier, 2021; Lyvers et al., 2013) Therefore, it can be understood that trait mindfulness is more likely the kind of mindfulness that individuals should cultivate. That being said, this could be the reason why mindfulness-based practices are rising to be one of the most popular interventions in clinical settings (Grecucci et al., 2015). In fact, it is said that the increasing use of mindfulness practices in clinical settings started since MBSR was introduced for the improvement of emotion regulation and stress reduction (Grecucci et al., 2015). Therefore, this is in line with the research hypotheses in the current study.

Besides emotion regulation and stress reduction, the mindfulness-based interventions are also useful and widely used for a number of clinical mental health conditions, including

both emotional and behavioural conditions (Grecucci et al., 2015). For instance, chronic pain, depression, eating disorders, trauma and stress-related disorders, and even serious mental health disorders such as bipolar disorder (Grecucci et al., 2015; Wielgosz et al., 2019). However, while a lot of literature has identified mindfulness-based practices as effective interventions for mental health conditions and emotion regulation, there are also a number of studies that have focused on the negative effects and risks of mindfulness-based practices in clinical settings (Shonin et al., 2014). According to empirical research, the mindfulness-based practices that are more likely to be linked with negative effects are mostly meditation-based (Shonin et al., 2014). Specifically, some of the negative consequences are such as suicidal thoughts, dissociation, addiction, and panic attacks, along with other related subsequent biopsychosocial issues (Shonin et al., 2014). Furthermore, there were also cases in which individuals with histories of serious psychotic mental health illnesses (i.e., schizophrenia) were found to have experienced symptoms of psychosis after engaging in meditation practices (Shonin et al., 2013). Interestingly, there were also two cases of the similar incidents, with the only difference being the two individuals did not have any history of diagnosed mental health illnesses (Sethi & Bhargava, 2003). That being said, though mindfulness seems to be beneficial in both emotion regulation and clinical treatments, which is in line with the hypotheses in the current study, it is also important for practitioners to be careful with the use of mindfulness-based practices, especially meditation.

Positive Reappraisal

Positive reappraisal refers to a regulatory process in which one re-evaluates the negative emotional experiences and finds positive meanings in them (Moser et al., 2014). While positive reappraisal is commonly known as an emotion regulation strategy, it is also important to know that process of reappraisal works under the mechanism of Cognitive Behavioural Therapy (CBT) with the purpose of improving one’s emotional issues (Moser et

al., 2014). In fact, as CBT focuses on the restructuring of maladaptive thoughts to reduce emotional or behavioural problems, the mechanism of positive reappraisal is indeed in line with that of CBT (Moser et al., 2014). Specifically, there was an emotion regulation process model that explains the mechanism of positive reappraisal in three stages, which are the generation, the selection, and the implementation (Gross, 2015). Basically, in the first stage, one would generate multiple reappraisals in response to the emotional experiences (Gross, 2015). Moving on, one would then select one reappraisal from the few options, and finally implement the reappraisals through actual actions (i.e., focus on it) (Waugh et al., 2022). Looking at positive reappraisal based on this model, it was also found that emotions change most significantly at the final stage. That being said, in order to make the process of emotion regulation successful, one must not stop the positive reappraisal process at the generation phase, and must continue to consciously implement it (Waugh et al., 2022).

Positive reappraisal, as a kind of cognitive reappraisal, is often being compared with detached reappraisal (Qi et al., 2017; Shiota & Levenson, 2012). While the two varieties of cognitive reappraisal are both considered as adaptive emotion regulation strategies, it is found that positive reappraisal not only was able to reduce the research participants' negative emotional responses but could also sustain their positive emotional responses (Shiota & Levenson, 2012). On the other hand, though to a larger extent, detached reappraisal was only able to reduce the general emotional responses of the research participants, including both positive and negative emotions (Shiota & Levenson, 2012). That being said, the authors have concluded that while detached reappraisal is likely to produce neutral emotions as the result of emotion regulation, positive reappraisal could even result in improved health and psychological well-being of the individuals (Shiota & Levenson, 2012). Therefore, this has shown that positive reappraisal is not only effective as an emotion regulation strategy that

helps one to manage their distressing emotions, but it is also beneficial for the general health of the individuals (Shiota & Levenson, 2012).

Emotion Regulation and Distress Tolerance

According to the literature, a number of studies (Arici-Ozcan et al., 2019; Bardeen et al., 2014) have supported the positive relationship between emotion regulation abilities and distress tolerance. While these results definitely support the hypotheses in the current study, there are also a number of studies that view the relationship between the two constructs in a different manner. It is understood that when one regulates his or her emotions, it simply means that the person is applying emotion regulation strategies to cope with the negative emotional experience (McRae & Gross, 2020). That being said, there are also studies that have related emotion regulation and distress tolerance by considering distress tolerance as part of emotion regulation or emotion regulation strategies due to the overlapping features, instead of seeing them as two constructs that exist individually (Cougle et al., 2012; Naragon-Gainey et al., 2017). For instance, it is said that an aspect of emotion dysregulation is the low levels of distress tolerance (Cougle et al., 2012). Besides, a high level of distress tolerance is related to adaptive emotion regulation strategies such as acceptance and reappraisal; while a low level of distress tolerance is related to maladaptive emotion regulation strategies including rumination and avoidance (Jeffries et al., 2015; Naragon-Gainey et al., 2017; Slabbert et al., 2018).

On the other hand, it is reported that when emotion regulation strategies were instructed and applied to a group of patients with major depressive disorder, it is found that their levels of distress tolerance were reduced (Ellis et al., 2012). In relation to that, it is explained that the instructions (i.e., acceptance of emotions) have inflicted anger in the patients, and thus affecting their distress tolerance (Ellis et al., 2012). Therefore, according to

the study, it could be implied that the emotion regulation strategies might not be effective when it is used on other people, especially individuals with major depressive disorder as compared to healthy individuals (Ellis et al., 2012). Though this does not indicate a direct negative relationship between the two constructs, which rejects the hypotheses of the current study, it is understood that any third variable or external factor that is yet to be discovered could potentially affect the relationship tremendously.

Emotion Regulation and Mindfulness

According to Hill and Updegraff, emotion regulation that is effective involves accurate identification and differentiation of one's own emotions (2012). That being said, mindfulness is associated with better emotion regulation abilities because being mindful helps one to reduce frequent changes of emotions as well as increase recognition and attention to positive emotions (Hill & Updegraff, 2012). Besides, there are also other studies that have supported the positive relationship between emotion regulation and mindfulness, which is in line with the hypotheses in the current study (Goodall et al., 2012; Roemer et al., 2015). Meanwhile, some other studies have been relating mindfulness to emotion regulation as a type of emotion regulation strategy (Naragon-Gainey et al., 2017). This is also in line with the hypotheses in the current study as mindfulness is known as an adaptive strategy that helps with emotion regulation (Naragon-Gainey et al., 2017). At the same time, there has been an argument in an attempt to determine whether mindfulness should be considered as a top-down or a bottom-up kind of emotion regulation strategy, which basically refers to the mechanism between brain regions (Chiesa et al., 2013). As the result of the research, it is reported that the top-down strategy is related to short-term mindfulness practices, while the bottom-up strategy is related to long-term mindfulness practices (Chiesa et al., 2013), Nevertheless, regardless of the type of strategy, the effectiveness of mindfulness in clinical

settings should be the reason why mindfulness-based practices such as MBSR have been receiving rising attention in both practices and research (Chiesa et al., 2013).

Nevertheless, according to a recent study, it is mentioned that mindfulness is not necessarily good for mental health and emotional regulation in certain situations (Serhatoğlu et al., 2022). In the study, it is reported that when one is being mindful and having serious deficits in emotion regulation at the same time, the person is predicted to have possibly reduced well-being (Serhatoğlu et al., 2022). Therefore, though this does not have a direct relevance to the hypotheses in the current study as the research was not about the relationship between mindfulness and emotion regulation, it still contradicts with the idea that mindfulness could help one to develop a better emotional state. Nevertheless, the effects of mindfulness in the long term are unknown as it was not included in the research, while theoretically speaking, mindful practices should be able to improve the emotion regulation deficits of the research participants, and in turn improve their well-being in the long run (Brockman et al., 2016).

Emotion Regulation and Positive Reappraisal

In most studies, positive reappraisal, in which some studies generalized it as cognitive reappraisal, is linked to emotion regulation as one of the cognitive emotion regulation strategies (Everaert & Joormann, 2019; McRae & Gross, 2020; Nowlan et al., 2014; Nowlan et al., 2015). As an emotion regulation strategy, positive reappraisal would directly result in positive changes in emotions (Waugh et al., 2022). Little research has been done to study about the relationship between each of the emotion regulation strategies and emotion regulation abilities in order to identify how significant these strategies could help with the regulation of emotions, including positive reappraisal (Naragon-Gainey et al., 2017). However, there are researchers that have reported on the effectiveness of positive reappraisal

in decreasing subjective distress and negative emotional experiences, which therefore indicates a successful regulation of emotion (Cutuli, 2014). At the same time, it is also reported that there is a positive relationship between positive reappraisal and positive emotions under stressful circumstances (Nowlan et al., 2015). Therefore, these are in line with the hypotheses of the current research. In addition, positive reappraisal or cognitive reappraisal has been identified as one of the most commonly used and adaptive emotion regulation strategies in a number of studies (Brockman et al., 2016; Cutuli, 2014; Dryman & Heimberg, 2018; Nowlan et al., 2015). Therefore, this also indicates how useful it is to use positive reappraisal to regulate one's emotions, though a significant relationship between them has yet to be found.

On the other hand, there is also research that doubts the effectiveness of positive reappraisal in emotion regulation. According to Raio et al., emotion regulation strategies are not always useful (2013). Specifically, it is reported that emotion regulation strategies are not effective when individuals are already under stressful circumstances in the face of the particular new stressors or emotional issues (Raio et al., 2013). Surprisingly, the results of this research have contradicted with the one from Nowlan et al., which confirmed the positive relationship between both constructs under the same circumstances (2015). According to another research, it is also reported that the effectiveness of emotion regulation strategies, particularly reappraisal, varies based on the situation (Troy et al., 2013). It is reported that when the situations or stressors that elicit the emotional responses are not within one's control, the reappraisal would be effective to regulate the emotions in such situations (Troy et al., 2013). However, when the situations or stressors that elicit the emotional responses are within one's control, the reappraisal would instead worsen the person's emotions at the moment (Troy et al., 2013). Research has even been done on a group of participants with depression, and results have indicated that the participants with stressors that are within their

own control had their depression worsen after the use of positive reappraisal (Troy et al., 2013). That being said, these studies have explained that the adaptiveness of positive reappraisal could be affected by other factors and variables (i.e., stress), and it does not necessarily successfully regulate one's emotions. Hence, based on this information, it is not impossible that the results of this current study might not end up in accordance with the research hypotheses as there could be other potential confounding variables that affect the results.

Predictors of Emotion Regulation

In the current study, it was hypothesized that distress tolerance could predict emotion regulation or difficulties in emotion regulation to a significant extent. Therefore, though there was no recent research that has studied on the exact same hypothesis, it is found that a low level of distress tolerance could predict higher level of obsessions among the research participants with obsessive-compulsive disorders (Cougle et al., 2012). That being said, the results have indicated that low distress tolerance has indirectly predicted failures in regulating obsessions, which are the uninvited intrusive thoughts that would induce negative emotional issues as a response (i.e., anxiety) (Cougle et al., 2012). On the other hand, another recent research has reported that a high level of distress tolerance has predicted reduced use of emotion regulation strategies in the context of daily life (Larrazabal et al., 2022). According to the research, it is said that this is because individuals with good distress tolerance abilities might have a lower motivation to intentionally use the strategies to cope with stressful situations while they were capable of tolerating them (Larrazabal et al., 2022). That being said, the predictive power of distress tolerance on emotion regulation is still debatable as there is evidence for both stands.

As for mindfulness, it was also hypothesized that it could significantly predict emotion regulation in the current study. That being said, it is reported in a study that mindfulness, as an emotion regulation strategy, has predicted high levels of emotional well-being among the research participants (Brockman et al., 2016). Therefore, this result is somehow in line with the research hypothesis because it indicates that mindfulness has helped the participants to regulate their emotions successfully. At the same time, another research has also reported that mindfulness has a predictive power on the regulation of negative emotions, including threats and anxiety (Roemer et al., 2015). In addition, the research has also emphasized that it is the notion of acceptance in mindfulness practices that has predicted the regulation of negative emotions most significantly (Roemer et al., 2015). Furthermore, another research has reported on both the predictive power of mindfulness and reappraisal on emotions in a social context (Quaglia et al., 2014). The results have shown that mindfulness was able to significantly predict positive emotions during interactions between individuals, but it was not exactly the case for reappraisal (Quaglia et al., 2014). That being said, it indicates that mindfulness was effective in regulation and even promotion of positive emotions while having social connections (Quaglia et al., 2014).

Speaking of reappraisal, the above study was already contradicted with the research hypothesis in the current study, in which it was hypothesized that positive reappraisal could predict emotion regulation significantly (Quaglia et al., 2014). At the same time, another research has also reported that positive reappraisal did not significantly predict reduction of subjective stress (Everaert & Joormann, 2020). Furthermore, there was also research that has reported that positive reappraisal did not significantly predict nor affect the conditions of research participants with depression (Salehi et al., 2015). In addition, the authors have even made a recommendation to make changes to the existing list of cognitive emotion regulation strategies so that it would be more effective for the treatment of depression in the future

(Salehi et al., 2015). These results are surprising and unexpected because they contradicted with major parts of the findings in the current chapter, as well as the research hypothesis. Nevertheless, there are still evidences that support the research hypothesis in this study. According to the research, it is reported that positive reappraisal has a significant predictive power on positive emotions, and the prediction lasts up to six months (Nowlan et al., 2015). This has indicated the effectiveness of positive reappraisal on the regulation of emotions even over a long period of time, as well as the maintenance of positive emotions in a long run (Nowlan et al., 2015).

Theoretical Framework

The Mindfulness-to-Meaning Theory was developed in 2015 as an extension or evolution of Garland's and other authors' previous works, including the model of mindful coping, the concept of upward and downward spiral of emotions, and another model about stress, metacognition, and coping (Garland et al., 2015).

The model of mindful coping was developed in 2009 with an attempt to explain the functions and involvement of mindfulness in the process of positive reappraisal (Garland et al., 2009). Based on the model, when one is dealing with subjective negative emotional distress that is beyond the level of tolerance, the person could enter into a mindful state, where his or her attention and awareness would broaden, allowing him or her to attend to more positive meanings and aspects of the negative situations, thus making new and positive reappraisals about the situations (Garland et al., 2009). With the positive reappraisal, positive emotions would also be triggered as an automatic response (Garland et al., 2009). As for the concept of upward and downward spiral of emotions, it was proposed to explain how positive emotions might play a role in stopping the disruptive vicious cycle of emotion-related mental disorders such as anxiety and depression (Garland et al., 2010). In simpler terms, the authors

mentioned that positive emotions could trigger a virtuous cycle (upward spirals) that could counter the vicious cycle triggered by the negative emotions (downward spirals) of individuals (Garland et al., 2010). Finally, the third model about stress, metacognition, and coping basically explains the process whereby one appraises stress from the environment, generates emotions from it, and reappraises it for the second time using some coping strategies and resources in an attempt to cope with the stress (Garland et al., 2007). If it is successful, it means the person has effectively dealt with the negative emotional experience; on the other hand, it means the person might experience the stress along with its subsequent impacts of the biopsychosocial aspects (Garland et al., 2007).

That being said, with the background of the abovementioned models and concepts, the Mindfulness-to-Meaning theory has evolved to be a more comprehensive version of them all (Garland et al., 2015). Therefore, the latest version of the theory explains that when individuals become mindful as they appraise stressful situations as unbearable, negative, and distressing, positive reappraisal could change perspectives and help them to find more positive meanings regarding the situations (Garland et al., 2015). As the result, the individuals could start appreciating the positive aspects, meanings, and values of the situations, and thus changing their emotions towards a positive direction and becoming more motivated to perform behaviours according to their values (Garland et al., 2015). That being said, the theory is seemed to be derived from the process of positive reappraisal, which is an emotion regulation strategy, and mindfulness was adapted into the breakdown of the coping process, which has made it more comprehensive and understandable (Garland et al., 2015).

Therefore, the Mindfulness-to-Meaning theory is used as the theoretical framework that supports the current study, whereby it was hypothesized that distress tolerance, mindfulness, and positive reappraisal would play their roles in predicting or influencing one’s emotion regulation abilities.

Conceptual Framework

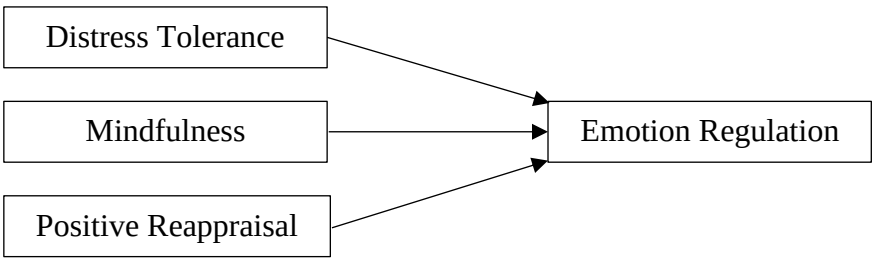

Figure 1. *The conceptual framework of the current study, "The emotion regulation of undergraduates in Malaysia: Distress tolerance, mindfulness, and positive reappraisal"*.

The figure above shows the conceptual framework of the current study, which is developed based on the Mindfulness-to-Meaning theory as mentioned above. The dependent variable in the study is emotion regulation, which is the general outcome as stated in the theory and above (Garland et al., 2015). Besides, the first independent variable is distress tolerance, which represented the notion of stress appraisal in the theory (Garland et al., 2015). Stress appraisal is part of distress tolerance; hence, the representation was based on the notion that when one has low distress tolerance ability, the person would have a high level of stress appraisal (Akbari et al., 2021). Therefore, when one has a low distress tolerance ability, a relatively lower level of stress could also be unbearable for the person due to his or her high level of stress appraisal, leading to the increased regulation of negative emotions. The second independent variable is mindfulness, which is literally the emphasis of the theory (Garland et al., 2015). According to the theory, one needs to be mindful in order to broaden his or her attention and awareness, so that he or she would not focus only on the negative aspects of the situations or things (Garland et al., 2015). Therefore, mindfulness is also an essential element which helps the ultimate outcome, which is emotion regulation according to the theory. The third independent variable is positive reappraisal, which is another important element of the theory (Garland et al., 2015). When one perceives the positive meanings from situations or

things, positive emotions would also be stimulated as a result (Garland et al., 2015). Therefore, the final independent variable should also be able to improve emotion regulation based on the theory.

That being said, this study aims to study the relationship between emotion regulation (dependent variable) and the three independent variables which are distress tolerance, mindfulness, and positive reappraisal. At the same time, the current study also aims to find out whether these three independent variables could predict the dependent variable, emotion regulation, as stated in the theory to a significant extent. Therefore, the correlation and regression model between the four variables will be determined through a series of correlation and regression analyses. Moreover, the study will be quantitative, and more specifics will be stated in the following chapter.

Chapter 3 Methodology

Research Design

This study was a quantitative study which gathers and examines data in numerical forms to answer the research questions as stated in Chapter 1 (Albers, 2017). Quantitative designed studies are used for identifying the associations between different constructs and the prediction power of a construct on another construct (Lorenzetti, 2007). In addition, it is also said that quantitative studies are also used to test the existing theories, such as the Mindfulness-to-Meaning Theory in this study (Lorenzetti, 2007). Therefore, the quantitative design was indeed appropriate for the current study.

Additionally, a correlational research design was adopted to identify the relationships between emotion regulation, distress tolerance, mindfulness, and positive reappraisal, as well as to identify whether or not the three independent variables (i.e., distress tolerance, mindfulness, positive reappraisal) were able to predict the dependent variable (i.e., emotion regulation) to a significant extent. Specifically, descriptive correlational design was for the explanation of the relationships between the four variables, while predictive correlational design was for the explanation of the predictive relationships between the dependent variable and the independent variables (Seeram, 2019).

Therefore, primary data regarding emotion regulation, distress tolerance, mindfulness, and positive reappraisal were collected from the research participants, in which primary data refers to novel data gathered by the researchers for their particular research questions (Hox & Boeije, 2005).

In order to collect the needed data as mentioned above, a questionnaire that was designed to be answered in a self-report method was created. In the questionnaire, there were a total of four scales, which included the shortened Difficulties in Emotion Regulation Scale

(DERS-16), Distress Tolerance Scale-Short Form (DTS-SF), Mindful Attention Awareness Scale (MAAS), and Positive Reappraisal Subscale from the Cognitive Emotion Regulation Questionnaire (CERQ).

Besides, an online survey containing the questionnaire, consent form, and demographic information form was created using Google Form so that answers could be collected from the research participants via the Internet. In fact, this method was suitable for the current study as it was really accessible even to a large size of samples (Rice et al., 2017). In addition, it was also because surveys are commonly used in studies with the purpose of identifying relationships between variables (Roberts, 1999).

At the same time, the current study also adopted a cross-sectional design as the collection of data only happened at one point of time, which was appropriate as this kind of design is also often used to collect descriptive data and to identify relationships between variables (Levin, 2006).

Research Participants

The research participants of the current study were undergraduates in Malaysia who aged between 18 and 29. Generally, undergraduates are defined as students who are studying in colleges or universities in order to obtain their first degrees (Stevenson, 2010). Therefore, undergraduates were chosen as the sample of the current research because tertiary education was considered as one of the most stressful and emotional sensitive periods in one's lifetime (Al-Naggar & Al-Naggar, 2012). Emotion regulation is crucial for undergraduates as it would help them to cope with the emotional problems resulted from the different stressors they faced in their college or university life, including academic, social, financial, and etc. (Kok et al., 2011). Additionally, the development of emotion regulation abilities was also especially significant at this early phase of life, as it would contribute to better well-being and overall

life quality for their lifetime (Al-Naggar & Al-Naggar, 2012). However, it has been found in research that undergraduates in Malaysia have poor abilities in regulating and controlling their emotions (Bunyaan et al., 2015). When the undergraduates do not have emotion regulation abilities, they would be susceptible to emotional vulnerabilities, psychological issues, mental health issues, which could also further result in physical issues and other issues such as poor academic performances (Al-Naggar & Al-Naggar, 2012). In fact, past studies have also reported that emotional disorders, which are associated with difficulties in emotion regulation (i.e., anxiety), are very prevalent among undergraduates in Malaysia (Al-Naggar & Al-Naggar, 2012; Arici-Ozcan et al., 2019; Latiff et al., 2014). Therefore, there was no doubt that emotion regulation is indeed important for undergraduates in Malaysia, as it was not only a potential cause, but also a potential solution to the psychological and emotional difficulties among them, which calls for attention for further research on this area (Hu et al., 2014).

Procedures of Sampling

Method of Sampling

Purposive sampling, which is a type of non-probability sampling methods, was used to reach out to the research participants. Though the use of this method might indicate that the research samples might not be able to represent the entire population, it was chosen as it would ensure that the research participants were of interest of the current study, so that they would provide data that could help to answer the research questions (Rai & Thapa, 2015). Therefore, this method was beneficial as it helped to collect data effectively and efficiently from the target research participants who have met the inclusion and exclusion criteria of the current study, which are mentioned in the below section.

Location of Study

The current study had reached out to samples from multiple universities across several states in Malaysia, including Perak, Selangor, Negeri Sembilan, Kuala Lumpur, and Johor. This was done with the help of the Internet as the link and QR code of the survey (Google Forms) was posted on social media platforms including Facebook and Instagram in order to reach out to more potential research participants. Moreover, the survey was also sent to individuals who met the inclusion and exclusion criteria through social networking platforms such as Facebook Messenger, Telegram, WhatsApp, Gmail, etc. At the same time, the researcher also approached a number of research participants in person around University Tunku Abdul Rahman, Kampar campus.

Ethical Clearance Approval

Upon the completion of Project Paper I, the researcher applied the approval for university ethical clearance from the UTAR Scientific and Ethical Review Committee, and through the supervisor of this research (Mr Ho Khee Hoong), the Head of the Psychology and Counselling Department (Dr Pung Pit Wan), and Dr Lee Lai Meng, who is the current Faculty Dean for the Arts and Social Science Faculty from UTAR. The ethical clearance approval is important as it ensured that the current study was ethical, and the survey was appropriate to be used before the commencement of the collection of data from the potential research participants. Therefore, the approval was applied as soon as possible because both the processes of obtaining approval and collecting data are time-consuming. Finally, the ethical clearance approval was obtained on 26th January 2023 (Re: U/SERC/18/2023), which then led to the commencement of data collection for the pilot study.

Sample Size, Power, and Precision

Sample Size Calculation

The sample size of the current study was determined according to Maxwell's method. According to Maxwell, the sample size should be 218 when there are a total of three predictors in the study so that the power of 0.80 could be obtained (Maxwell, 2000). This method was suitable as the suggested sample size was higher than the alternative method, G*Power, and the method was also said to be appropriate for studies using MLR (Maxwell, 2000). That being said, G*Power 3.1.9.4 was also used to generate and calculate the sample size with the data collected from the pilot study. According to the calculation, it was suggested that 41 samples were required for the Pearson's Product-Moment Correlation (PPMC), and eight samples were required for the Multiple Linear Regression (MLR). Hence, it was decided that G*Power was not suitable to be used in the current study as the suggested sample size was too small even after an increment of 50% (n = 62). In short, the final proposed sample size was 218, which was decided based on Maxwell's method.

Actual Sample Size

The final sample size used in the statistical analysis consisted of a total of 218 samples as proposed. Nevertheless, a total of 229 responses were actually collected at the end of the data collection period. However, 11 invalid responses were excluded along the way, and the data collection continued until the proposed sample size was reached. These cases were deleted as six of them were unengaged responses, and five of them did not fit either the inclusion or exclusion criteria. Unengaged responses were defined as situations where the pattens of responses from respondents were suspicious because the responses were the same for all the items in a scale (Ibrahim et al., 2015). These data must be handled accordingly as they would affect the data quality and analysis moving forward (Javed & Khan, 2017).

Therefore, the actual response rate of the responses was 95.2%, though 100% of the proposed sample size (n = 218) was achieved. According to research, a response rate of 60% was already considered as acceptable; therefore, this means that the response rate of the current study was definitely sufficient as it was way above 60% (Johnson & Wislar, 2012; McPeake et al., 2014). Hence, the 11 cases as mentioned above were deleted right away as not only the proposed sample size was achieved, but the response rate was also acceptable.

Power Analysis

Hypothesis 1. PPMC was used for the identification of the relationships between emotion regulation, distress tolerance, mindfulness, and positive reappraisal, which is the first research hypothesis. In G*Power 3.1.9.4, 'Exact' was selected as the test family, and 'Correlation: Bivariate normal model' was selected as the statistical test. According to the results of the pilot study, the effect size was r = .378, which was considered as a conventional medium effect size for bivariate correlational (Cohen et al., 2013). Additionally, the power was decided to be 0.80, and the margin of error was .05 according to the suggestion of Cohen (Chuan, 2006; Cohen, 1988). That being said, the suggested sample size was 41 according to the software.

Besides, a post-hoc power analysis was also performed subsequently in order to ascertain the statistical power achieved with the updates sample size (n = 218). In G*Power 3.1.9.4, 'Exact' was again selected as the test family, and 'Correlation: Bivariate normal model' was selected as the statistical test. While the effect size was remained at r = .378, the margin of error was also remained at .05, and the power of .99 was reported as a result. Statistical power of a hypothesis test indicates the probability of achieving statistically significant results and detecting true effect if there was any (Cohen, 2013). When a test has high statistical power, it would mean that there was a higher possibility of detecting true

effect (Button et al., 2013). Therefore, the results indicated that there was 99.99% possibility that a true effect was detected in the current study.

Hypothesis 2. MLR was used for identifying the predictions of distress tolerance, mindfulness, and positive reappraisal on emotion regulation, which is the second research hypothesis. In G*Power 3.1.9.4, 'T tests' was selected as the test family, and 'Linear multiple regression: Fixed model, single regression coefficient' was selected as the statistical test. Based on the results of the pilot study, the effect size, f^2 = 1.985 was used, which was considered a conventional large effect size (Cohen, 1998). Additionally, the power was decided to be 0.80, and the margin of error was 0.05 according to the suggestion of Cohen (Chuan, 2006; Cohen, 1988). That being said, the suggested sample size was only eight in this case according to the software.

Once again, a post-hoc power analysis was performed subsequently in order to ascertain the statistical power achieved with the updates sample size (n = 218). In G*Power 3.1.9.4, 'T tests' was again selected as the test family, and 'Linear multiple regression: Fixed model, single regression coefficient' was selected as the statistical test. While the effect size was remained at f^2 = 1.985, the margin of error was also remained at .05, and the power of 1.00 was reported as a result. Therefore, it was indicated that there was more than 99.99% possibility that a true effect was detected in the current study based on the results generated from G*Power.

Data Collection Procedures

Inclusion and Exclusion Criteria

In order to collect data that will be helpful for the current study, the sampling of research participants was done based on a few inclusion and exclusion criteria. The inclusion criteria are as followed:

1. The research participants must be Malaysian.
2. The research participants must be studying in local university.
3. The research participants aged between 18 to 29.

With these inclusion criteria, it could be ensured that the results of the current study were able to reflect the emotion regulation, along with the other three independent variables (i.e., distress tolerance, mindfulness, positive reappraisal), of the undergraduates in the Malaysia context. In addition, the age range was also important to make sure that the research participants are the young undergraduates, who are reportedly having increased mental health difficulties according to research (Arici-Ozcan et al., 2019; Latiff et al., 2014).

At the same time, the research participants were excluded if they have gone through formal mindfulness training from professional practitioners (i.e., counsellors), as the data might not be appropriate to be generalized to the overall research population. Besides, the research participants would also be excluded if they declared that they were diagnosed with mental disorders. In addition, the research participants were also excluded if they were part of the population for the pilot study, which were the students studying Guidance and Counselling in UTAR. That was, a necessary measure to prevent the participants from pilot study from participating in the actual study (Lackey & Wingate, 1997).

Informed Consent

In the online survey (Google Form), the first section was a consent form. Research participants were informed about several particulars regarding the survey including but not limited to introduction, purposes of the study, matters of confidentiality, voluntary participation, and contact information of the researcher. In fact, besides achieving the research objectives listed in the previous chapter, this study was also an academic project of a student from Universiti Tunku Abdul Rahman. Therefore, this section was important as it

ensured that the research participants were fully and rightfully informed about the survey and their participation before agreeing to participate in the study voluntarily. That being said, the research participants also had the right to withdraw from the study anytime without any consequences. In addition, there were also the researcher's contact number and email address in this section, so that the research participants had someone to refer to at times when there were any difficulties. Finally, the consents of the participants were obtained as they agreed to the particulars as mentioned and selected the "agree" option in the Google Form.

Data Collection Procedures

In the second section of the online survey, the research participants who had agreed to participate in the study were required to fill up their particulars including age, gender, race, nationality, current university, location of university, course of study, year of study, and whether or not they have been to formal mindfulness training. The collection of demographic information was important as it helped to illustrate the diverse backgrounds of all the research participants, which added to the understanding of researcher and the findings of study.

Last but not least, the final section was of course, the questionnaire, which consisted of a total of four scales and their respective instructions. The four scales were, the shortened Difficulties in Emotion Regulation Scale (DERS-16), Distress Tolerance Scale-Short Form (DTS-SF), Mindful Attention Awareness Scale (MAAS), and Positive Reappraisal Subscale from the Cognitive Emotion Regulation Questionnaire (CERQ). Additionally, both the labels of the items for DTS-SF and MAAS were reversed in advance in the questionnaire to avoid confusion and careless responses from the respondents. This was supported by studies that specifically focused on the effects of precoding, which means numbering the options in questionnaires (Callegaro et al., 2008; Tourangeau et al., 2004). According to the research, it was concluded that respondents would be confused when the labels of the responses were not

according to the expected direction, in which respondents tend to assume that the options would progress from left to the right (Callegaro et al., 2008; Tourangeau et al., 2004). Therefore, the scales were reversed from 1 being “almost always” and 5 being “almost never” to 1 being “almost never” and 5 being “almost always” so that higher ratings always refer to the positive direction. Additionally, a few studies also supported the modified labels for both of the scales as mentioned above as the same labels were used in those studies (Black et al., 2012a; Black et al., 2012b; Probert-Lindström & Perrin, 2023). After collecting the data, the scores of these two scales were also reversed back according to the original scales before performing data analysis. In a nutshell, these scales had collected the required data that could directly answer the research questions in this study meaningfully after performing several statistical analyses.

Pilot Study. A pilot study was conducted after obtaining the ethical clearance approval (from 30th January 2023 to 20th February 2023) in order to ensure that the research method and instruments used were indeed appropriate before the commencement of the actual study. Therefore, the pilot study was a smaller scale of the actual study which was conducted to prevent the failure of the actual study (Polit & Beck, 2017). In the pilot study, the data was collected from a total of 30 participants consisted of only undergraduates studying Guidance and Counselling in UTAR. The total number of participants was sufficient as the suggested number of sample size in a pilot study shall be 10% of the actual sample size (Lackey & Wingate, 1997). That being said, 30 participants should be appropriate as it was higher than 10% of 218, which was approximately 22 participants.

Furthermore, with the data obtained from the pilot study, it was reported that all the instruments used in the current study have good internal consistency as the reported Cronbach’s alpha were all higher than .70 (see Table 3.1). According to Keith (2017), it was suggested that instruments with reported Cronbach’s alpha above .70 are considered reliable.

Therefore, all the instruments were considered reliable, and no alterations were needed for the actual study.

Actual Study. The data collection for the actual study started upon confirming that the instruments were appropriate to be used based on their reliability (from 23rd February to 10th March), while the analysis started right after the completion of data collection. As mentioned above, all instruments were used without any modifications in the actual study due to their decent reliability. The online survey (Google Form) was shared to the research participants in the form of link and QR code either virtually through social media platforms or directly in a face-to-face approach. Finally, there were a total of 229 responses collected throughout the entire data collection period, but only 218 responses were used in the analysis. The reliability of the instruments was also acceptable in the actual study as they all showed great internal consistencies (see Table 3.1).

Table 3.1

Instruments' Reliability Found from Pilot Study (n = 30) and Actual Study (n = 218)

Variable	Number of Items	Pilot Study (Cronbach's α)	Actual Study (Cronbach's α)
DERS	16	.91	.93
DTS	4	.71	.74
MAAS	15	.86	.90
PRS	4	.84	.84

Note. DERS = Difficulties in Emotion Regulation Scale, DTS = Distress Tolerance Scale, MAAS = Mindful Attention Awareness Scale, and PRS = Positive Reappraisal Subscale.

Instruments

In short, there were four instruments that were used in the current study, which were the shortened scale for Difficulties in Emotion Regulation (Bjureberg et al., 2015), shortened Distress Tolerance Scale (Garner et al., 2017), Scale of Mindful Attention Awareness (Brown & Ryan, 2003), as well as Positive Reappraisal Subscale (Garnefski et al., 2001).

Emotion Regulation. The first scale was the simplified Difficulties in Emotion Regulation Scale (DERS-16) that was shortened by Bjureberg et al. in 2015, in which the original DERS-36 was developed by Gratz and Roemer in 2004 (Bjureberg et al., 2015; Gratz & Roemer, 2004). DERS, or DERS-16 was developed for the purpose of measuring one's difficulties in emotion regulation such as not being able to accept negative emotions, regulate impulsive actions, and clarify one's own emotions (Bjureberg et al., 2015). There are a total of 16 items in the shortened scale, and an example of item would be "When I'm upset, my emotions feel overwhelming". As the scale was a five-point Likert scale which ranges from 1 (almost never) to 5 (almost always), one could score a minimum of 16 and a maximum of 80 on this scale (Bjureberg et al., 2015). There were no reverse-scored items in the scale, so the final scores shall be calculated by summing up the scores. This indicated that a higher total score would indicate greater difficulties in emotion regulation; in other words, a lower total score would indicate a greater emotion regulation (Bjureberg et al., 2015). However, in the current study, all the items in this scale would be reversed so that higher score would indicate better emotion regulation of an individual. This was needed as it would ease and simplify the interpretation of results in Chapter 4. In addition, this was an appropriate alteration as not only the use of it to measure emotion regulation was supported by a few studies, but the reversal of scores for the ease of interpretation was also done in other research (Bardeen et al., 2012; Burzler et al., 2019; Gratz & Roemer, 2004; Skutch et al., 2019; Tran et al., 2014; Westerlund & Santtila, 2018). Additionally, the authors of the scale also mentioned that the

initial intention of creating this instrument was to assess emotion regulation (Gratz & Roemer, 2004). Moreover, this scale was reliable and valid as it has a high internal consistency (Cronbach's α = .92) and a great construct validity as evidenced by its significant correlation with the original DERS-36 (Bjureberg et al., 2015).

Distress Tolerance. The second scale was the Distress Tolerance Scale-Short Form (DTS-SF) that was shortened by Garner et al. in 2017, in which the original DTS was developed by Simons and Gaher in 2005 (Garner et al., 2017; Simons & Gaher, 2005). In short, DTS was originally developed for the purpose of measuring one's tolerance of distress (Simons & Gaher, 2005). As compared to the original DTS that contains 15 items, the short version only has four items for the measurement of one's tolerance of distress (Garner et al., 2017). For example, one of the items was "I can't handle feeling distressed or upset". As this scale is a five-point Likert scale which ranges from 1, which refers to "strongly agree" to 5, which refers to "strongly disagree", the lowest score one could ever get is 4, while the highest score is 20 (Garner et al., 2017). The final scores were calculated by summing up the scores. That being said, a higher total score will indicate a higher distress tolerance ability (Garner et al., 2017). Nevertheless, the fourth item in the scale, "I'll do anything to stop feeling distressed or upset." is a reverse-scored item (Garner et al., 2017). In addition, this scale was reliable and valid because it has a great internal consistency (Cronbach's α = .81) and convergent validity as evidenced by its significant correlations with scales such as the short version of Quality-of-Life Enjoyment and Satisfaction Questionnaire (QLES-Q-SF) as well as Hamilton Depression Scale (HAM-D6), in which the correlations are similar with the original DTS according to the research (Garner et al., 2017).

Mindfulness. The third scale was the Mindful Attention Awareness Scale (MAAS) which was introduced by Brown and Ryan in 2003 (Brown & Ryan, 2003). The MAAS was created for the purpose of measuring the differences between individuals in regarding their

level of attention and awareness while being in the mindful states (Brown & Ryan, 2003). MAAS is a six-point Likert scale, in which 1 refers to “almost always” and 6 refers to “almost never” (MacKillop & Anderson, 2007). Examples of the items are “I find myself doing things without paying attention” and “I find myself preoccupied with the future or the past” (MacKillop & Anderson, 2007). There are a total of 15 items in this scale, and there is no reverse-scored item; hence, it means that one could score a minimum of 15, and a maximum of 90 (MacKillop & Anderson, 2007). The total scores were calculated with the mean values of the total scores. That being said, a higher mean score will depict greater mindfulness in the person. In addition, this scale was reliable as it has a decent internal consistency (Cronbach’s $\alpha = .92$) (Phang et al., 2016). At the same time, this scale also has a good convergent validity which is evidenced by its significant positive relationships with other instruments including Satisfaction with Life Scale (SWLS) as well as Subjective Happiness Scale (SHS) (Phang et al., 2016). Moreover, MAAS also has a good divergent validity as evidenced by its significant negative relationship with Perceived Stress Scale (PSS) according to a study done in Malaysia (Phang et al., 2016).

Positive Reappraisal. The last scale was the Positive Reappraisal Subscale (PRS) from the Cognitive Emotion Regulation Questionnaire (CERQ), that was created in 2001 by Garnefski et al. Among the 36 items in CERQ, the current study will only be using the Positive Reappraisal Subscale, which was intended to measure how frequent a person uses positive reappraisal to cope with negative emotions and experiences (Aliche & Onyishi, 2019). This is because the current study is only interested in positive reappraisal, but not the other cognitive emotion regulation strategies. In fact, multiple research (Aliche & Onyishi, 2019; Gerzina & Porfeli, 2012; Hanley & Garland, 2014) have been using only the subscale in their studies as well, which indicated that it is appropriate. There are a total of four items in this subscale, and it is rated based on a five-point Likert scale, in which 1 refers to “almost

never" and 5 refers to "almost always" (Aliche & Onyishi, 2019). There is no reverse-scored item, and the final scores were calculated by summing up the scores. That being said, one could score 4 at its minimum and 20 at its maximum, in which the higher the score, the more the use of positive reappraisal in one's life (Aliche & Onyishi, 2019). An example of the item is "I think I can learn something from the situation." (Garnefski & Kraaij, 2006). In addition, these studies have also reported good internal consistency of the subscale (Cronbach's α = .80 - .82), which further reassures the use of the subscale (Aliche & Onyishi, 2019; Gerzina & Porfeli, 2012). At the same time, the Positive Reappraisal subscale also has good content validity as the items are direct and would not be confused with other constructs, while it also has significant negative correlations with depression and anxiety symptoms according to research (Nowlan et al., 2015).

Chapter 4 Results

Descriptive Statistics

Demographic Characteristics

The demographic characteristics of the participants in the current study were reported in Table 4.1 below. In the current study, there were a total of 218 undergraduates with their ages ranged between 18 to 26 years (M = 21.234; SD = 1.276). Specifically, there were 0.92% (n = 2) of undergraduates who were 18 years old, 5.51% (n = 12) who were 19 years old, 23.39% (n = 51) who were 20 years old, 27.98% (n = 61) who were 21 years old, 30.28% (n = 66) who were 22 years old, 6.88% (n = 15) who were 23 years old, 4.13% (n = 9) who were 24 years old, and 0.46% (n = 1) who were 25 and 26 years old. That being said, the undergraduates who aged 22 years were the largest group of participants in the current study. Furthermore, 35.32% (n = 77) of the participants were male, which were lesser as compared to the 64.68% (n = 141) of female participants. Moreover, most of the participants were Chinese (n = 204; 93.58%), followed by Indian (n = 11; 5.05%), and Malay (n = 3; 1.38%). Besides, most of the participants were undergraduates who are currently studying in Perak (n = 170; 77.98%), followed by Selangor (n = 26; 11.93%), Kuala Lumpur (n = 15; 6.88%), Johor and Perlis (n = 3; 1.38%), and Negeri Sembilan (n = 1; 0.46%).

The current university of the participants were not listed in Table 4.1 as there were too many of them. Nevertheless, majority of the participants were currently studying in Universiti Tunku Abdul Rahman (UTAR), which constituted 87.16% of them (n = 190). Meanwhile, the other universities include Asia Pacific University (APU), INTI University, Multimedia University (MMU), Newcastle University, Sunway University, Universiti Malaya (UM), HELP University, Tunku Abdul Rahman University of Management and Technology, International Medical University (IMU),Universiti Tenaga Nasional (UNITEN), and Taylor's

University. As for the courses of study, majority of the participants were currently studying Psychology (*n* = 42; 19.27%), and the other courses include but not limited to Computer Science (*n* = 31: 14.22%), Chinese Studies (*n* = 17; 7.80%), Commerce Accounting (*n* = 13; 5.96%), and etc. Furthermore, the year of study of the majority of participants were Year 1 (*n* = 97; 44.50%), followed by Year 3 (*n* = 74; 33.95%), Year 2 (*n* = 40; 18.35%), Year 4 (*n* = 6; 2.75%), and Year 5 (*n* = 1; 0.46%). In addition, all participants were Malaysian who have not been through any professional mindfulness training.

Table 4.1

Demographic Characteristics of Participants (n = 218)

	n	***%***	***M***	***SD***	**Minimum**	**Maximum**
Age			21.234	1.276	18	26
18	2	0.92				
19	12	5.51				
20	51	23.39				
21	61	27.98				
22	66	30.28				
23	15	6.88				
24	9	4.13				
25	1	0.46				
26	1	0.46				
Gender						
Male	77	35.32				
Female	141	64.68				
Race						
Malay	3	1.38				
Chinese	204	93.58				
Indian	11	5.05				
Location of University						
Johor	3	1.38				
Kuala Lumpur	15	6.88				
Negeri Sembilan	1	0.46				
Perak	170	77.98				
Perlis	3	1.38				
Selangor	26	11.93				

Note. n = number of respondents; *%* = percentage; *M* = mean; *SD* = standard deviation

Topic-Specific Variables Characteristics

The descriptive statistics of the topic specific variables including the emotion regulation (M = 45.326; SD = 12.791), distress tolerance (M = 13.124; SD = 3.422), mindfulness (M = 57.693; SD = 13.370), and positive reappraisal (M = 14.445: SD = 3.405) were reported in Table 4.2 below. Furthermore, the data for all four variables (i.e., emotion regulation, distress tolerance, mindfulness, positive reappraisal) appeared to be normal according to their values of skewness and kurtosis as they were all within ±2.000. In addition, the data for mindfulness (W = 0.992, p = .237) also seemed to be normal according to the p-value of Shapiro-Wilk, which was above than the standard p = .05. This indicated that the normality null hypothesis was failed to be rejected. Nevertheless, the data for emotion regulation (W = 0.980, p = .003), distress tolerance (W = 0.971, p < .001), and positive reappraisal (W = 0.964, p < .001) appeared to be not normal as their p-values were below the standard p = .05, which means the data have rejected the normality null hypotheses. Therefore, the data that were not normal should be handled and used carefully.

Table 4.2

Descriptive Statistics of Topic Specific Variables (i.e., Emotion Regulation, Distress Tolerance, Mindfulness, and Positive Reappraisal)

	Emotion Regulation	Distress Tolerance	Mindfulness	Positive Reappraisal
Median	50.000	13.000	3.867	15.000
Mean	50.537	13.124	3.846	14.427
Standard Deviation	12.635	3.422	0.891	3.386
Minimum	21.000	7.000	1.667	5.000
Maximum	80.000	20.000	6.000	20.000
Skewness	0.232	0.061	-0.018	-0.505
Kurtosis	-0.677	-0.841	-0.559	0.016
Shapiro-Wilk	0.980	0.971	0.992	0.964
P-value of Shapiro-Wilk	0.003	< .001	0.237	< .001

Data Diagnostic and Missing Data

Percentages and Frequency of Missing Data

No missing data was found amongst all the collected data (n = 0; 0%). Nevertheless, there were a number of unengaged responses (n = 6; 2.62%) and invalid responses (n = 5; 2.18%) that were deleted before proceeding to the statistical analyses. Unengaged responses referred to the suspicious patterns of constant responses from a respondent, and this could be determined when the responses were the same for all items in a scale (Ibrahim et al., 2015). However, in the current study, the unengaged responses were determined when the standard deviation of the responses from a respondent was lower than 0.50 (Gyasi et al., 2017). As for the five invalid responses, they were considered invalid as the respondents did not fulfil the research participants criteria in the current study. All of these were deleted since the response rate was acceptable (95.2%). In short, the frequency and percentage were based on the total number of responses collected, which was 229. Therefore, the final number of responses used in the current study was 218 after excluding the unengaged and invalid responses, which was sufficient for the required number of sample size.

Methods Employed for Addressing Missing Data

The first measure to ensure the completeness of the responses was to set every item in the survey as required, which means the respondents would not be able to carry on with the rest of the survey if any items were left empty. Furthermore, the data collected were also checked thoroughly using Microsoft Excel to ensure that there were no missing data. This was done with the function "=COUNTBLANK(A2:AW2), which included both columns for demographic information and items of questionnaire. The results of the function were "0" for all of the rows, which indicated that there were indeed no missing data.

Criteria for Post Data-Collection Exclusion of Participants

A total of 11 responses were excluded from the collected data. That being said, the first criterion for post data-collection exclusion was to exclude the unengaged responses. Unengaged responses were determined by computing the standard deviation of all the items answered by each respondent, and it was done with Microsoft Excel using the function "=STDEV.P(K2:AW2)". As a result, case number 21, 47, 103, 104, 151, and 184 were shown to have standard deviations that were below .50, which indicated that they were unengaged responses (Gyasi et al., 2017). Hence, the six unengaged responses were excluded in order to prevent them from affecting the data analysis.

Besides, another five responses were also excluded as the respondents have failed to meet the inclusion criteria or have met the exclusion criteria of the research participants. This included case number 13 (Bangladesh) and 72 (Thai), which failed to meet the inclusion criterion of being Malaysian. Other than that, case number 136 (Graduated) failed to meet the inclusion criterion of being an undergraduate, while case number 158 (Guidance and Counselling) and 203 (Guidance and Counselling) met the exclusion criterion of being the same population as participants for pilot study. For nationality, the two foreign respondents were identified with the Microsoft Excel function "=IF(D2="Malaysian",1,2,"")", and the results were sorted from large to small. With that, the "2" indicated and helped to identify respondents who were not Malaysian. Additionally, the other three excluded responses were identified through frequent checking throughout the data collection period. These participants might have overlooked the participants criteria that were shared through social media; therefore, this helped to ensure that the research participants recruited were appropriate for the current research.

Criteria for Imputation of Missing Data

Missing data should be imputed according to the level of data. For example, ordinal level of data should be replaced by median, and interval level of data should be replaced by mean. Nevertheless, as there were no missing data, imputation of missing data was not performed in the current study.

Defining and Processing of Statistical Outliers

Outliers for emotion regulation, distress tolerance, mindfulness, and positive reappraisal were checked using boxplot in JASP. According to the boxplots (Appendix C), there were no outliers for the four variables. Outliers are data that are different and inconsistent with the other data to a significant extent and are capable of causing bias in the data analysis (Kwak & Kim, 2017). Therefore, data that contained outliers should be removed or excluded from the study in order to ensure that the data analysis would not be affected. That being said, no data were removed as outliers as there were no outliers detected.

Nevertheless, it was reported in the boxplot that there was an outlier (Case 66) for age, which was 26 years old. However, it was not removed as 26 years was within the age range mentioned in the inclusion criteria, and the research hypotheses of the current study did not emphasize the effect of age, which was not one of the variables.

Data Transformation

In data transformation, reverse-scored items were recoded in Microsoft Excel using the function "=IF(AD2=1,5, IF(AD2=2,4, IF(AD2=3,3, IF(AD2=4,2, IF(AD2=5,1,""))))). The reversal of scores was done for the entire Distress Tolerance Scale-Short Form (DTS-SF) and Mindful Attention Awareness Scale (MAAS) as both scales were reversed earlier in the questionnaire for the convenience of the respondents. This was done with the support of a few past studies that also had the same labels (Black et al., 2012a; Black et al., 2012b;

Probert-Lindström & Perrin, 2023). Besides, the items in DERS-16 were also reversed so that higher scores would indicate greater emotion regulation, which would ease the interpretation of results. The use of this instrument to assess emotion regulation and the reversal of scores for the interpretation were also supported by past studies that did the same (Bardeen et al., 2012; Burzler et al., 2019; Skutch et al., 2019; Tran et al., 2014; Westerlund & Santtila, 2018). Other than that, only one item needed to be reversed, that was, the fourth item in the DTS-SF.

As for the data computation, the scores of scales were sum up using the Microsoft Excel function "=SUM(K2:Z2)". This included DTS-SF, Difficulties in Emotion Regulation Scale (DERS-16), and Positive Reappraisal Subscale. Besides, the scores for MAAS were computed by calculating the mean of the scores using Microsoft Excel function "=AVERAGE(AE2:AS2)" according to the instruction of the author (Brown & Ryan, 2003).

Analyses of Data Distributions

Normality. The data distribution of the four variables, which were emotion regulation, distress tolerance, mindfulness, and positive reappraisal, was analysed with normality tests including skewness, kurtosis, Shapiro-Wilk, and boxplot. The normality of data influenced the choice of statistical tests used in the current study, which were either parametric tests or nonparametric tests (Khatun, 2021).

Skewness and Kurtosis. As reported in Table 4.2, all of the four variables, which were emotion regulation, distress tolerance, mindfulness, and positive reappraisal, were normally distributed based on their skewness and kurtosis that were within ±2.000. Specifically, the skewness of emotion regulation, distress tolerance, mindfulness, and positive reappraisal were 0.232, 0.061, -0.018, and -0.505 respectively. As for kurtosis, the results were -0.677, -0.841, -0.559, and 0.016 respectively. It could be observed that majority of the variables were

negatively skewed, with the exception of the skewness of distress tolerance and the kurtosis of positive reappraisal. For skewness, it means that there were many high scores for emotion regulation, mindfulness, and positive reappraisal from the participants. For kurtosis, the negative values indicated that the data were distributed in a flat and light-tailed manner. Nevertheless, both the values for skewness and kurtosis for all four variables were in the acceptable range, which means the data were considered to be normally distributed.

Shapiro-Wilk. According to Table 4.2, the data for emotion regulation ($W = 0.980$, $p = .003$), distress tolerance ($W = 0.971$, $p < .001$), and positive reappraisal ($W = 0.964$, $p < .001$) appeared to be not normally distributed as their p-values were below the standard $p = .05$, which means the data have rejected the normality null hypotheses. As for mindfulness ($W = 0.992$, $p = .237$), the data appeared to be normally distributed as its p-value was above the standard $p = .05$, which means the normality null hypothesis was failed to be rejected.

Boxplot. The boxplot for the four variables were attached as Appendix C. It was observed that there were no outliers, and each of the data for emotion regulation, distress tolerance, mindfulness, and positive reappraisal were within the same ranges. Nevertheless, data without outliers were not necessarily normal, so the normality of data still depended on the normality tests including skewness, kurtosis, and Shapiro-Wilk.

Data Analysis

H_1: There are positive relationships between emotion regulation, distress tolerance, mindfulness, and positive reappraisal.

Pearson's Product-Moment Correlation (PPMC) was decided to be used for studying the relationship between emotion regulation and distress tolerance, while Spearman Rank Correlation Coefficient was decided to be used for studying the relationship between emotion

regulation, mindfulness, and positive reappraisal. For this hypothesis, one-tailed test was conducted.

H_{1a}: There is a positive relationship between emotion regulation and distress tolerance.

The assumption of PPMC was observed, which included both univariate normality (see Table 4.2) and bivariate normality (see Table 4.4). Both emotion regulation and distress tolerance have values for skewness and kurtosis within ±2.000, indicated that both variables were within the normal range. As for the bivariate normality, it was reported that the *p*-value of Shapiro-Wilk was $p = .685$, which indicated that the joint distribution of emotion regulation and distress tolerance was normal as it was above the standard $p = .05$. Therefore, the parametric test, PPMC was used to determine the relationship between these two variables.

According to the results as shown in Table 4.3, it was reported that $r\ (218) = .759$, $p < .001$. The results indicated that there was a statistically significant positive relationship between difficulties in emotion regulation and distress tolerance. As the direction of the relationship was positive, it means that the greater the emotion regulation, the greater the distress tolerance. That being said, the null hypothesis was rejected as the *p*-value was below .05, and H_{1a} was supported. Using Guilford's rule of thumb, the effect size indicated that the strength of this relationship between emotion regulation and distress tolerance was strong (1973).

Table 4.3

Pearson's Product-Moment Correlation (n = 218)

Pearson's Correlations

Variable		DERSTotal	DTSTotal	MAASMean	PRSTotal
1. Emotion Regulation	Pearson's r	—			
	p-value	—			
2. Distress Tolerance	Pearson's r	0.759***	—		
	p-value	< .001	—		
3. Mindfulness	Pearson's r	0.656***	0.723***	—	
	p-value	< .001	< .001	—	
4. Positive Reappraisal	Pearson's r	0.353***	0.454***	0.379***	—
	p-value	< .001	< .001	< .001	—

Note. All tests were one-tailed and for positive correlation.
* $p < .05$, ** $p < .01$, *** $p < .001$, one-tailed
Note. DERSTotal = Difficulties in Emotion Regulation Scale Total; DTSTotal = Distress Tolerance Scale Total; MAASMean = Mindful Attention Awareness Scale Mean; PRSTotal = Positive Reappraisal Subscale Total

Table 4.4

Assumption Checks for PPMC

Shapiro-Wilk Test for Bivariate Normality

		Shapiro-Wilk	p
DERSTotal	- DTSTotal	0.995	0.685
DERSTotal	- MAASMean	0.968	< .001
DERSTotal	- PRSTotal	0.985	0.024

Note. DERSTotal = Difficulties in Emotion Regulation Scale Total; DTSTotal = Distress Tolerance Scale Total; MAASMean = Mindful Attention Awareness Scale Mean; PRSTotal = Positive Reappraisal Subscale Total

H_{1b}: There is a positive relationship between emotion regulation and mindfulness.

The assumptions of PPMC were not observed, especially in terms of the normality of distribution. Though both emotion regulation and mindfulness were reported to be normal according to their values of skewness, kurtosis, and Shapiro-Wilk (for mindfulness) (see Table 4.2), the pair of variables was reported to be not normal in terms of the bivariate

normality as shown in Table 4.4. It was reported that the *p*-value of Shapiro-Wilk was $p < .001$, which indicated that the joint distribution of emotion regulation and mindfulness was not normal as it was below the standard $p = .05$. Therefore, the nonparametric version of the test, Spearman Rank Correlation Coefficient (see Table 4.5) was used to determine the relationship between these two variables.

According to the results as shown in Table 4.5, it was reported that $r\ (218) = .670$, $p < .001$. The results indicated that there was a statistically significant positive relationship between emotion regulation and mindfulness. As the direction of the relationship was positive, it means that the greater the emotion regulation, the greater the level of mindfulness. That being said, the null hypothesis was rejected as the *p*-value was below .05, and H_{1b} was supported. Using Guilford's rule of thumb, the effect size indicated that the strength of this relationship between emotion regulation and mindfulness was moderate (1973).

Furthermore, it was also decided to further analyse the results generated from PPMC for this pair of variables since both the data for emotion regulation and mindfulness were actually normal according to their values of kurtosis and skewness, and Shapiro-Wilk tests were generally more sensitive and appropriate for small sample size ($n < 50$), which indicated that it might not be powerful enough in the current large sample size ($n = 218$). (Mishra et al., 2019). In addition, PPMC was also a more stringent test with more assumptions as compared to Spearman Rank Correlation Coefficient. Hence, it was decided that the results from PPMC would also be worth to be taken into consideration in the current study.

That being said, it was reported that $r\ (218) = .656$, $p < .001$ according to the results as shown in Table 4.3. The results indicated that there was a statistically significant positive relationship between difficulties in emotion regulation and mindfulness. As the direction of the relationship was positive, it means that the greater the emotion regulation, the greater the

level of mindfulness. Therefore, the null hypothesis was rejected as the *p*-value was below .05, and H_{1b} was supported. Using Guilford's rule of thumb, the effect size indicated that the strength of this relationship between emotion regulation and mindfulness was moderate (1973).

Table 4.5

Spearman Rank Correlation Coefficient (n = 218)

Spearman's Correlations

Variable		DERSTotal	MAASMean	PRSTotal
1. DERSTotal	Spearman's rho	—		
	p-value	—		
2. MAASMean	Spearman's rho	0.670***	—	
	p-value	< .001	—	
3. PRSTotal	Spearman's rho	0.384***	0.387***	—
	p-value	< .001	< .001	—

Note. All tests were one-tailed and for positive correlation.
* p < .05, ** p < .01, *** p < .001, one-tailed
Note. DERSTotal = Difficulties in Emotion Regulation Scale Total; MAASMean = Mindful Attention Awareness Scale Mean; PRSTotal = Positive Reappraisal Subscale Total

H_{1c}: There is a positive relationship between emotion regulation and positive reappraisal.

The assumptions of PPMC were not observed, especially in terms of the normality of distribution. Though both emotion regulation and positive reappraisal were reported to be normal according to their values of skewness and kurtosis as they were both within ±2.000, the pair of variables was reported to be not normal in terms of the bivariate normality as shown in Table 4.4. It was reported that the *p*-value of Shapiro-Wilk was $p = .024$, which indicated that the joint distribution of emotion regulation and positive reappraisal was not normal as it was below the standard $p = .05$. Therefore, the nonparametric version of the test, Spearman Rank Correlation Coefficient (see Table 4.5) was used to determine the relationship between these two variables.

According to the results as shown in Table 4.5, it was reported that r (218) = .384, p < .001. The results indicated that there was a statistically significant positive relationship between emotion regulation and positive reappraisal. As the direction of the relationship was positive, it means that the greater the emotion regulation, the more frequent the use of positive reappraisal. That being said, the null hypothesis was rejected as the p-value was below .05, and H_{1c} was supported. Using Guilford's rule of thumb, the effect size indicated that the strength of this relationship between emotion regulation and positive reappraisal was weak (1973).

Due to the same reasons as mentioned above, it was decided to also analyse the results further from PPMC for this pair of variables. According to the results as shown in Table 4.3, it was reported that r (218) = .353, p < .001. The results indicated that there was a statistically significant positive relationship between difficulties in emotion regulation and positive reappraisal. As the direction of the relationship was positive, it means that the greater the emotion regulation, the greater the usage of positive reappraisal. Hence, the null hypothesis was rejected as the p-value was below .05, and H_{1c} was supported. Using Guilford's rule of thumb, the effect size indicated that the strength of this relationship between emotion regulation and positive reappraisal was weak (1973).

H_2: Emotion regulation is significantly predicted by distress tolerance, mindfulness, and positive reappraisal.

H_{2a}: Emotion regulation is significantly predicted by distress tolerance.

H_{2b}: Emotion regulation is significantly predicted by mindfulness.

H_{2c}: Emotion regulation is significantly predicted by positive reappraisal.

The assumptions of Multiple Linear Regression (MLR) were observed and were discussed in the following sections. Therefore, MLR was used to investigate how well the independent variables in the current study: distress tolerance, mindfulness, and positive reappraisal predict the dependent variable, emotion regulation. This is a two-tailed test. As a result, it was reported that the results were statistically significant F (3,214) = 106.992, $p < .001$ in the Table 4.6 below. Hence, the regression model significantly fits the data at α level = .05.

Table 4.6

Multiple Linear Regression Model (n = 218)

ANOVA

Model		*df*	*F*	*p*	Adjusted R^2	R^2
H_1	Regression	3	106.992	< .001	0.594	0.600
	Residual	214				
	Total	217				

Note. Dependent Variable = Emotion Regulation; Predictors = Distress Tolerance, Mindfulness, and Positive Reappraisal

According to Table 4.7, the identified equation to understand this relationship was as followed: emotion regulation = -2.205 (*distress tolerance*) – 3.203 (*mindfulness*) + 0.016 (*positive reappraisal*) + 86.497. This means that the emotion regulation for individual cases could be calculated with the abovementioned formula. For example, one of the cases from the actual data collected scored 17 for distress tolerance, 4.667 for mindfulness, and 15 for positive reappraisal. Hence, the emotion regulation for this individual case could be calculated with the formula = -2.205 (*17*) - 3.203 (*4.667*) + 0.016 (*15*) + 86.497 = 34.304. Furthermore, both distress tolerance (β = 0.597, $p < .001$) and mindfulness (β = 0.226, $p < .001$) were reported to significantly predict emotion regulation. Nevertheless, it was also reported that positive reappraisal (β = -0.004, $p = .931$) did not significantly predict emotion regulation. In addition, it was reported in Table 4.6 that the value of adjusted R squared was

0.594. This indicated that 59.4% of the variance in emotion regulation was explained by distress tolerance, mindfulness, and positive reappraisal. The effect size was determined using the following formula, $f^2 = \frac{R^2}{1-R^2} = \frac{0.594}{1-0.594} = 1.463$, which was a large effect size (Cohen, 1988). In a nutshell, distress tolerance and mindfulness were both predictors for emotion regulation, while positive reappraisal failed to predict emotion regulation. Therefore, H_{2a} and H_{2b} were supported, but it was not the case for H_{2c}.

Table 4.7

Multiple Linear Regression Coefficient

Coefficients

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	50.537	0.856		59.056	< .001
H_1	(Intercept)	9.503	2.876		3.304	0.001
	DTSTotal	2.205	0.241	0.597	9.162	< .001
	MAASMean	3.203	0.890	0.226	3.600	< .001
	PRSTotal	-0.016	0.182	-0.004	-0.087	0.931

Note. DTSTotal = Distress Tolerance Scale Total; MAASMean = Mindful Attention Awareness Scale Mean; PRSTotal = Positive Reappraisal Subscale Total

As for the assumptions for MLR, linear relationship (Appendix H), without significant outliers, without multicollinearity, homoscedasticity (Appendix H), and independence of observation were observed. According to the casewise diagnostic as attached in the appendix, it was shown that there were no multivariate outliers anywhere in the data as 99.9% of them were in the range between ±3.29, which means there were no standardized residuals that were below or above 3.29. Furthermore, there were also no cases that have Cook's distance greater than 1. Hence, it could be observed that multivariate normality of the data was achieved. In terms of Durbin-Watson, it was reported in Table 4.8 that the value was 1.958, which indicated that the assumption of autocorrelation was not violated because it was between 1.5 and 2.5. As for collinearity statistics, it was reported in Table 4.9 that all the

collinearity tolerance were above 0.1 and VIF were below 5.0. Therefore, this indicated again that the data was normal and without outliers.

Table 4.8

Assumption Checks for MLR (Independent Error Test)

Durbin-Watson

Model	Autocorrelation	Statistic	p
H_1	0.017	1.958	0.754

Table 4.9

Assumption Checks for MLR (Collinearity Table of Tolerance and VIF)

Collinearity Statistics

Model		Tolerance	VIF
H_1	(Constant)		
	Distress Tolerance	0.440	2.274
	Mindfulness	0.474	2.108
	Positive Reappraisal	0.788	1.268

Note. Dependent Variable = Emotion Regulation

Chapter 5 Discussion and Conclusion

Discussion

The current study aimed to determine the relationships between emotion regulation, distress tolerance, mindfulness, and positive reappraisal. Furthermore, the current study also aimed to find out whether distress tolerance, mindfulness, and positive reappraisal could predict emotion regulation.

Emotion Regulation and Distress Tolerance

The H_{1a} of the current research posited that there is a positive relationship between emotion regulation and distress tolerance, the results of PPMC also showed that the two variables were positively correlated. Therefore, the findings of the current research were consistent with the findings of the past studies, in which both supported that there was a positive relationship between emotion regulation and distress tolerance (Arici-Ozcan et al., 2019; Bardeen et al., 2014). This indicated that H_{1a} was supported not only by the evidence from the past studies, but also the evidence found from the current research. Additionally, it was observed that similar results were found from the similar contexts. While a past study found that there was positive relationship between emotion regulation and distress tolerance among college students, the current research also found that there was significant positive relationship between the two variables among undergraduates (Arici-Ozcan et al., 2019). Therefore, these results consistently proved that higher emotion regulation abilities are related to higher distress tolerance abilities for students pursuing tertiary education. For instance, when an undergraduate is experiencing high level of distress and anxiety before a presentation, he or she will be able to cope with the negative emotions better at that moment if he or she has greater emotion regulation abilities. According to the research, this is because undergraduates with better distress tolerance skills would also have greater cognitive

flexibility, which helps them to have more capability in regulating their emotions (Arici-Ozcan et al., 2019). In addition, it was also suggested that when individuals are struggling with regulating their emotions, it is likely that they will refuse to tolerate the distress that they are experiencing (Bardeen et al., 2014). According to the research, that was because the individuals have poor ability of attentional control, which was similar to the concept of cognitive flexibility and capability as mentioned earlier (Arici-Ozcan et al., 2019; Bardeen et al., 2014). In another words, when the undergraduates have higher emotion regulation difficulties, it was likely that they also have lower distress tolerance, especially when they struggle to move their attentions away from the source of distress due to limited cognitive flexibility. Therefore, it can be understood that the negative relationship between the two variables as mentioned was also similar with the findings of the current research.

Emotion Regulation and Mindfulness

The H_{1b} of the current research posited that there is a positive relationship between emotion regulation and mindfulness, both the results of PPMC and Spearman Rank Correlation Coefficient also showed that the two variables were positively correlated. Therefore, the findings of the current research were similar with findings from multiple past studies regarding the relationship between emotion regulation and mindfulness (Goodall et al., 2012; Hill & Updegraff, 2012; Roemer et al., 2015). This is said because all the findings indicated that there was a positive relationship between emotion regulation and mindfulness, which supported H_{1b} of the current research. Nevertheless, while the definitions and understandings about mindfulness were consistent across the studies, there was a slight difference between the concept of mindfulness in a past study and the current study. In the past study, the mindfulness of the participants were the results of practices and trainings; however, the mindfulness of the participants in the current research were more of the results of life experiences and personality traits (Roemer et al., 2015). Additionally, the research

participants in another past study were similar to those in the current research, in which they have never received any formal mindfulness trainings and interventions (Goodall et al., 2012). In any case, this does not affect the positive relationship found between emotion regulation and mindfulness.

In addition, the findings from this research were also similar with the studies that suggested the effectiveness of mindfulness-based interventions and practices (Chiodelli et al., 2020; Chiesa et al., 2013; Roemer et al., 2015). According to a systematic review, it was suggested that mindfulness-based interventions were helpful for emotional related issues such as depression and stress among undergraduates (Chiodelli et al., 2020). For instance, when an undergraduate has learned to be more mindful, or have always been very mindful, he or she will be able to regulate his or her negative emotions better than those who have low level of mindfulness when necessary (i.e., feeling nervous during examinations). According to research, this was because when an individual is being mindful, the individual will be aware of the needs and ways to regulate the negative emotions (Roemer et al., 2015). Therefore, this supported not only the positive relationship between emotion regulation and mindfulness, but also the validity of the findings in the current research context, which was among the undergraduates.

Emotion Regulation and Positive Reappraisal

The H_{1c} of the current research posited that there is a positive relationship between emotion regulation and positive reappraisal, both the results of PPMC and Spearman Rank Correlation Coefficient also showed that the two variables were positively correlated. The findings of the current research were in line with a few past studies, which supported the positive relationship between emotion regulation and positive reappraisal (Cutuli, 2014; Nowlan et al., 2015). Therefore, it can be said that both the results from the current research

and past studies supported H_{1c} in the current research. According to the past studies, positive reappraisal has always been an effective method that helps with one's regulation of emotion, especially when one was feeling stressful (Brockman et al., 2016; Cutuli, 2014; Nowlan et al., 2015). Specifically, this was because positive reappraisal helps individuals to increase positive emotions and decrease negative emotions by changing their negative emotions to positive emotions (Cutuli, 2014; Nowlan et al., 2015; Waugh et al., 2022). This helped to explain the findings of the current study as it indicated that the more the undergraduates tend to look for positive meanings from negative events, the more and the easier the undergraduates could change their negative emotions to positive emotions, which resulted in better emotion regulation abilities. For example, if an undergraduate tends to see his or her academic deficits as motivation for improvement instead of seeing them as a weakness that cannot be improved, this mean that this undergraduate generally has greater abilities in regulating his or her negative emotional experiences.

Predictors of Emotion Regulation

The H_{2a} of the current research posited that emotion regulation is significantly predicted by distress tolerance, the results of MLR also showed that distress tolerance has significant predictive power for emotion regulation. According to the findings of the current research, distress tolerance was the predictor that explained emotion regulation the most out of the three variables in the study. This result was consistent with a past study that focused on obsessions as an indicator of difficulties in emotion regulation (Cougle et al., 2014). According to the research, it was found that low level of distress tolerance and negative impulsivity would predict obsessions (i.e., disturbing thoughts that lead to negative emotions) among university students (Cougle et al., 2014). In another words, it means that when individuals have low distress tolerance abilities and low levels of controls over their urges, it would predict a low regulation of their emotions. For the context of the current research, it

could be justified as when undergraduates have no abilities in controlling or tolerating the negative emotional experiences, it would naturally result into the poor regulation of their emotions, and vice versa. In addition, it was also explained that individuals with high distress tolerance would have higher acceptance for their negative emotions, which is an essential part of emotion regulation (Cougle et al., 2014). Hence, it was understood that when an undergraduate tends to not accept his or her negative emotions and has no control nor tolerance over them, poor abilities in emotion regulation could be predicted. Therefore, though impulsiveness was not included in the current research, the findings were still similar with the findings in the current research. Additionally, this also supported the H_{2a} in the current research, which stated that distress tolerance was able to significantly predict emotion regulation among the undergraduates in Malaysia.

The H_{2b} of the current research posited that emotion regulation is significantly predicted by mindfulness, the results of MLR also showed that mindfulness has significant predictive power for emotion regulation. The findings from the current research were similar to a few past studies, which stated that mindfulness was able to predict greater emotion regulation abilities and emotional well-being (Brockman et al., 2016; Quaglia et al., 2014; Roemer et al., 2015). Therefore, these past studies also supported the H_{2b} of the current research. Based on the context of the current research, the results indicated that high level of mindfulness of an undergraduate would predict great emotion regulation abilities. According to research, this was mostly because the undergraduates have great acceptance for what was happening at the moment, which was a central concept of mindfulness (Roemer et al., 2015). Hence, when undergraduates consciously accept all the emotional experiences as they are without judging them negatively (i.e., mindfulness), they would be able to regulate their emotions to a better degree. For instance, when an undergraduate failed his midterm examination due to some unforeseen circumstances, he would perceive the situation as it was

without making extra judgments about his own abilities. With that, the undergraduate would be able to regulate his or her negative emotions (i.e., disappointment, sadness) better as compared to someone who would just interpret the failure as lack of intelligence.

The H_{2c} of the current research posited that emotion regulation is significantly predicted by positive reappraisal; however, the results of MLR showed that positive reappraisal did not have significant predictive power for emotion regulation. Based on the results of the current research, positive reappraisal was not a significant predictor for emotion regulation, and this result was consistent with a number of past studies (Everaert & Joormann, 2020; Quaglia et al., 2014, Salehi et al., 2015). This was not a big surprise as most of the studies included in Chapter 2 also had the similar results, which similarly did not support H_{2c} in the current research. Specifically, the past studies stated that positive reappraisal did not significantly predict greater positive emotions, lower level of stress, as well as lesser negative emotional experiences (Everaert & Joormann, 2020; Quaglia et al., 2014, Salehi et al., 2015). Therefore, this means that positive reappraisal was also not able to predict emotion regulation among the undergraduates in Malaysia, and they could still struggle with regulating their negative emotions despite practicing positive reappraisal.

According to research, this could be due to the repetitive negative thoughts associated with the negative emotional experiences (Everaert & Joormann, 2020). This means that even an undergraduate tried to regulate his or her emotions by looking at the positive sides to the events, the negative thoughts were too strong that they simple could not be neglected or restructured by the undergraduate. This was similar to the findings as mentioned earlier, which stated that when the individuals were feeling stressful, positive reappraisal would not be effective as the stressful experiences could be too overwhelming (Raio et al., 2013; Troy et al., 2013). Therefore, though this research was not about the predictive power of positive reappraisal for emotion regulation, the findings were still helpful as it added to the

justification as to why positive reappraisal could not predict emotion regulation among undergraduates to a significant degree in the current research. That being said, it could be understood that though positive reappraisal and emotion regulation were positively related, there was no other associations between the two variables based on the results of the current research. On the other hand, there was also study that indicated that positive reappraisal could predict positive emotions (Nowlan et al., 2015). Though this was not consistent with the results of the current research, it actually supported H_{2c} in the current research. According to the research, positive reappraisal not only predicted emotion regulation, but it also predicted the maintenance of positive emotions over a long term (Nowlan et al., 2015). However, this does not seem to be the case for the undergraduates in the current study, and it could be due to the reasons as stated above.

Implication of The Study

Theoretical Implication

Mindfulness-to-Meaning Theory was the theory that was used to formulate the conceptual framework in the current study (Garland et al., 2015). Based on the results, it was shown that the current study had indeed contributed to the validation of the theory under the context of undergraduates in Malaysia. It was found that distress tolerance, mindfulness, and positive reappraisal have statistically significant relationships with emotion regulation, which means that the process of being mindful towards the meanings of the negative events as described in the theory is indeed related to the regulation of emotion. Additionally, it was also found out that both distress tolerance and mindfulness were able to predict emotion regulation, and the predictor which explained emotion regulation the most would be distress tolerance, which was the first part of emotion regulation that was described in the theory

(Garland et al., 2015). Therefore, the results of the current study not only were able to consolidate the theory under the context of undergraduates in Malaysia.

Nevertheless, it was also found out that positive reappraisal was not a significant predictor for emotion regulation. This means that though the two variables are related to one another positively, emotion regulation could not be exactly explained by positive reappraisal to a significant extent. Additionally, this might also indicate that distress tolerance and mindfulness, which are the first two parts of the emotion regulation process were more important for the regulation of emotion based on the theory (Garland et al., 2015). Therefore, these results are inconsistent with not only the theory, but also with some of the past studies. However, this could be due to many other external factors such as the selection of instrument, the sample size, or the research design. In short, this indicated that further research still needs to be done in order to further examine the predictive power of positive reappraisal on emotion regulation, so that the process of emotion regulation in the theory could be more comprehensive. At the same time, it was concluded that the theory was validated in the current research context given that most of the results were significant.

Practical Implication

First of all, the results of the current study could be used as a practical framework that helps the mental health professionals who are seeing clients with emotion regulation difficulties in both clinical and non-clinical settings. This include but not limited to the clinical psychologists, counsellors in different settings, and especially the university counsellors as the current study were done under the context of undergraduates. According to the results, it was shown that distress tolerance and mindfulness are capable of predicting emotion regulation, and all three variables (i.e., distress tolerance, mindfulness, and positive reappraisal) are positively related to emotion regulation. Therefore, the practitioners could

incorporate these results into their exploration, action plans, treatment plans, or interventions. For instance, if a university counsellor is dealing with an undergraduate client with emotion regulation difficulties, the counsellor can help the client by enhancing his or her distress tolerance skills, mindfulness, and the use of positive reappraisal in order to improve his or her emotion regulation. As an example, Dialectical Behavioural Therapy could be used to improve distress tolerance and mindfulness, while positive reappraisal could be improved through practicing guided discovery or cognitive restructuring in Cognitive Behavioural Therapy (Linehan, 2014; Moser et al., 2014).

In addition, it is important to know that with improved emotion regulation, the overall mental health and well-being of the clients would also be improved (Hu et al., 2014; Saxena et al., 2011). Therefore, practitioners are recommended to always be reminded about the importance of emotion regulation abilities for the clients, even for clients without major emotion regulation difficulties as the ability itself could protect them from a lot of the mental health hazards. That being said, when the clients show satisfactory improvement in their emotion regulation and overall mental health, the image and reputation of the mental health care providers, including the practitioners, institutions, or organizations would be more positive; similarly, when the undergraduates in the universities are able to resolve their emotional difficulties in the university counselling units, the university counsellors and the universities themselves would also be benefited in terms of their overall reputation. At the same time, the mental health professionals would also be able to have greater self-esteem, confidence, and capability for dealing with clients with emotion regulation difficulties.

Furthermore, the results of the current study could also help the undergraduates in Malaysia to improve their emotion regulation abilities. With the results, it could be concluded that distress tolerance predicts emotion regulation the most in the context of Malaysian undergraduates. Therefore, undergraduates are encouraged to equip themselves with distress

tolerance abilities as a way to improve their regulation of emotion. To improve distress tolerance abilities, the undergraduates could either seek assistance from mental health professionals or look for self-help and self-learning materials from reliable resources. Additionally, they are also encouraged to practice mindfulness and positive reappraisal at times when they are dealing with any emotional events or stimuli. Based on the findings of the current study, these should be able to help them to regulate their emotions better, and thus helping them to experience more positive emotions and better mental health in general. With improved emotion regulation and mental health, the undergraduates might also be able to have better performances and experiences in their academic and social relationships. In that case, not only the undergraduates themselves would be benefited, but the universities would also be benefited by their academic achievements at the same time.

Limitation of the Study

The first limitation of the study is the sampling technique. Purposive sampling was adopted in the current study, which is a non-probability sampling method that has limitation in terms of its generalization of results (Berndt, 2020). Although this method was more convenient and time efficient given the time constraint and limited resources, it would definitely be better if the results were to have greater external validity and greater representativeness of the research population. Among the data collected, it was observed that the majority of the research participants were Chinese female who were studying in UTAR, which was definitely not consistent with the actual population of undergraduates in Malaysia. Therefore, it must be noted that the results of this study could have its limitation in terms of external validity.

The second limitation is the selection of instruments. In the current study, the researcher did too many alterations to the instruments, which could potentially lead to

reduced reliability and accuracy of the results. Specifically, the labels of both DTS-SF and MAAS were reversed in advance to prevent the inaccurate responses from respondents who did not read the instructions carefully. Besides, the scores of DERS-16 were also reversed so that higher scores would indicate greater emotion regulation, in which the purpose was to ensure that the directions of the variables were more consistent so that the interpretations were clearer and easier to be understood. Additionally, the instrument that was used to measure positive reappraisal was also just a subscale from CERQ. Nevertheless, though all alterations were made with sufficient literature supports, it must be noted that alterations should always be made with cautions.

The third limitation is the potential bias in the research population for pilot study. The research population involved undergraduates who are currently studying Guidance and Counselling in UTAR. This means that the majority of them might have learnt about topics regarding emotion regulation from their courses, thus having higher total scores as a result. This could not only affect the reliability, but also the normality of the results as the distribution of the data would be more negatively skewed. In fact, it was also observed in the actual study that the total scores for most of the scales were also negatively skewed, which means there were many respondents who have scored high in the scales (Ho & Yu, 2015). These scales included scales that measures emotion regulation, mindfulness, and positive reappraisal.

The fourth limitation is the potential response bias. As mentioned above, there were more respondents who have scored high than those who have scored low for the particular three variables. This might be due to several types of response biases including socially desirable responding and acquiescence (Bogner & Landrock, 2016). Socially desirable responding refers to the situations where the survey respondents tend to answer the questionnaire in a way that portrays themselves as more positive and desirable (Bogner &

Landrock, 2016). For example, majority of the respondents in the current study scored high for emotion regulation as they tend to describe themselves as people who do not have difficulties with their emotion regulation. Furthermore, acquiescence refers to the situations where survey respondents tend to rate more positively or agree to all the items regardless of the content (Bogner & Landrock, 2016). This means that the respondents simply score higher in the scales without actually giving careful thoughts before selecting which options describe them most accurately, which could also be a reason why most of the total scores were negatively skewed in the current study.

Therefore, the fifth limitation is the problems with statistical assumptions in the current study, which were observed in the statistical test for the first hypothesis, which was H_1: There are positive relationships between emotion regulation, distress tolerance, mindfulness, and positive reappraisal. This is said because the assumptions of PPMC include normal distribution of data and random sampling from population. However, the bivariate normality for emotion regulation with mindfulness and positive reappraisal were not achieved. This problem was solved by replacing the parametric test (PPMC) with the alternative nonparametric test (Spearman Rank Correlation Coefficient) for the two pairs of variables (Pappas & DePuy, 2004). However, the use of parametric tests is always more preferrable as there would be more information generated and acquired from the data, thus making the results more meaningful as compared to those of the nonparametric tests (Nahm, 2016). In addition, it was also decided to further analyse the results of PPMC for the two pairs of variables since the data were normal based on their values of kurtosis and skewness, and not the *p*-values of Shapiro-Wilk in the current research. Furthermore, as the research participants were all recruited through purposive sampling, this means that the participants were not exactly random samples from the population.

Recommendations for Research in The Future

The first recommendation is to use a probability sampling method for data collection. A probability sampling method will ensure that all individuals in the population have equal chances of being selected for the research, and that will help to ensure that the results of the research are more representative of the population (Berndt, 2020). Nevertheless, it is understandable that collecting data using probability sampling method could be rather difficult for undergraduates-level research as it requires more resources and time as compared to non-probability research. Therefore, it is recommended that researchers should at least collect samples according to the demographical ratio of the population (i.e., gender), so that the results could be more generalizable.

The second recommendation is to be more careful with the selection of instruments. For example, take note of the direction of labels of the instruments so that all scales in the questionnaire are more consistent and less confusing for the respondents. In addition, future research can consider changing the instrument that was used to measure emotion regulation, so that the construct can be measured more accurately and with higher validity. In relation to this, Emotion Regulation Questionnaire (ERQ) that has significant convergent validity with DERS-16 is recommended to be used in the future replications (Westerlund & Santtila, 2018). It must be noted that the design of the instruments should also be taken into consideration besides the reliability and validity of the instruments while making selection.

The third recommendation is to be more careful with the selection of research population for the pilot study. Generally, it is recommended to select a non-biased population so that it would not affect the results of the study. This is because results from a biased population cannot be generalized and represent the entire population (Simundic, 2013). Therefore, a recommendation for future replications is that instead of making the

undergraduates from a particular course as the research population, the research population should involve more varieties while still ensuring that they would not involve themselves in the actual study. For example, the research population could be undergraduates from a particular university. Nevertheless, the purpose of pilot study in the current study was mostly to check on the reliability of the scales. Therefore, though the population might not be representative enough, both the results of reliability in the pilot study and the results of the actual study were not affected.

The fourth recommendation is divided into two parts. Firstly, the recommendation for reducing the socially desirable responding is to ensure that the identifying information of the survey respondents are not collected (i.e., name), so that the respondents would feel more secured while answering the questionnaire truthfully (Bogner & Landrock, 2016). Additionally, it is recommended to reduce physically approaching the respondents as it could also lead to an increased potential of socially desirable responding (Bogner & Landrock, 2016). Secondly, as for the acquiescence bias, it is suggested to reword the items so that they are shorter and easier to be understood, or to reword the items so some items are worded positively, while some other items are worded negatively (Bogner & Landrock, 2016). Nevertheless, it must be noted that rewording of items should always be done with cautions and correct procedures. In addition, it must be noted that when there are items worded in different directions in a questionnaire, there is also a risk where respondents might feel confused and thus contributing inaccurate data.

Finally, the fifth recommendation would be to increase the sample size. With a larger sample size, the distribution of data is more likely to be normal as compared to a smaller sample size (Kim & Park, 2019). However, it must be noted that though normal distribution and parametric tests are always preferred, it is not always achievable or necessary (Krithikadatta, 2014). In addition, data that are skewed to a specific direction could also be

considered as normally distributed, depending on the tests or criteria the researchers based off (i.e., skewness) (Krithikadatta, 2014). However, bivariate normality, which was not completely achieved in the current study is indeed important as one of the research objectives was to identify relationships between the four variables under the context of undergraduates in Malaysia. Therefore, it is strongly recommended that future replications should also work on avoiding this issue. Nevertheless, the normality issue was handled by further performing the PPMC with the support of normality according to only kurtosis and skewness values in the current research, while still retaining the results of Spearman Rank Correlation Coefficient as increment of sample size was not possible at that point of time. Both tests have produced useful and meaningful results for the current research. Hence, another recommendation for future replications in regarding this limitation would be to consider more alternatives of normality tests, rather than relying mostly on the Shapiro-Wilk test.

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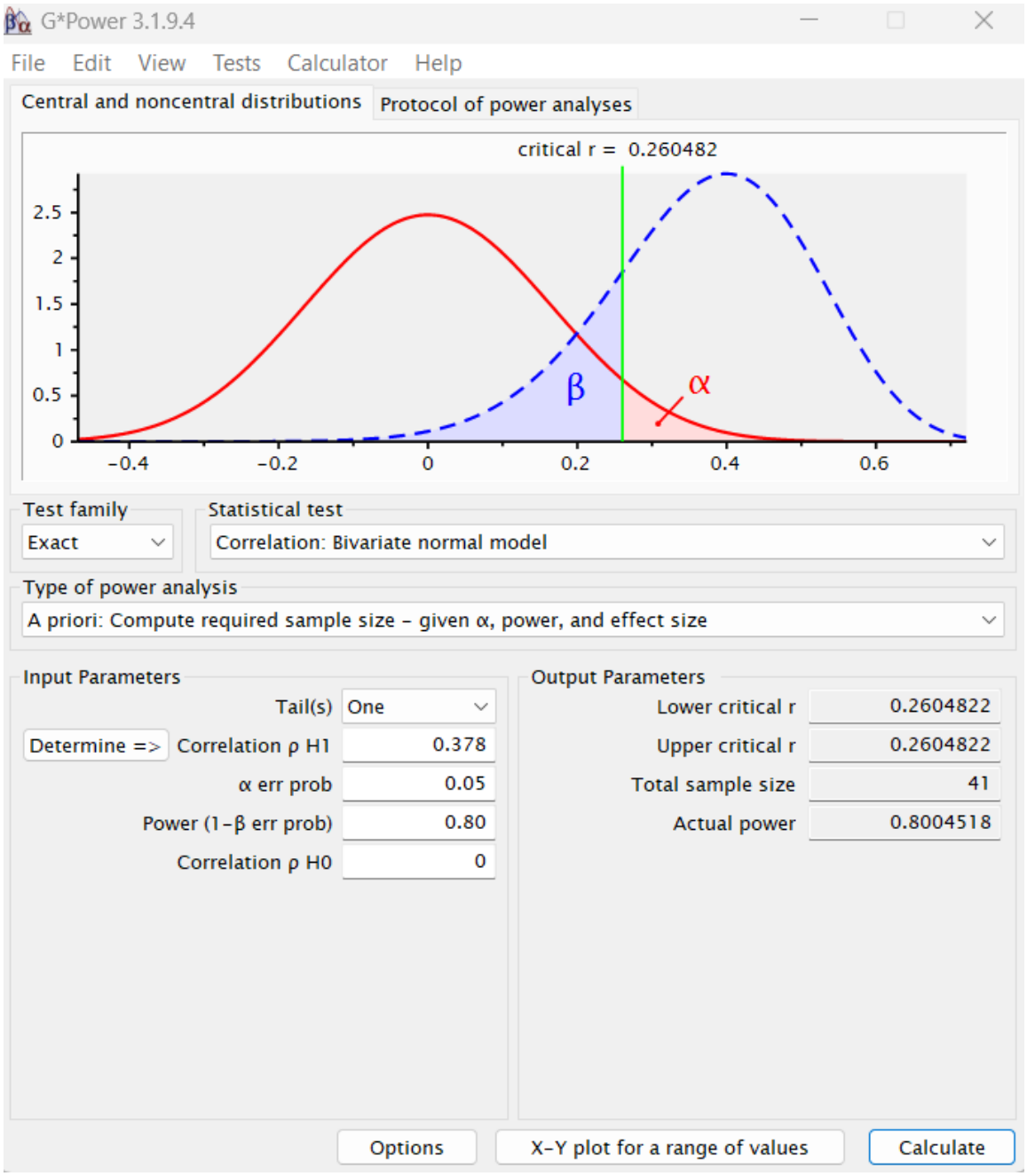
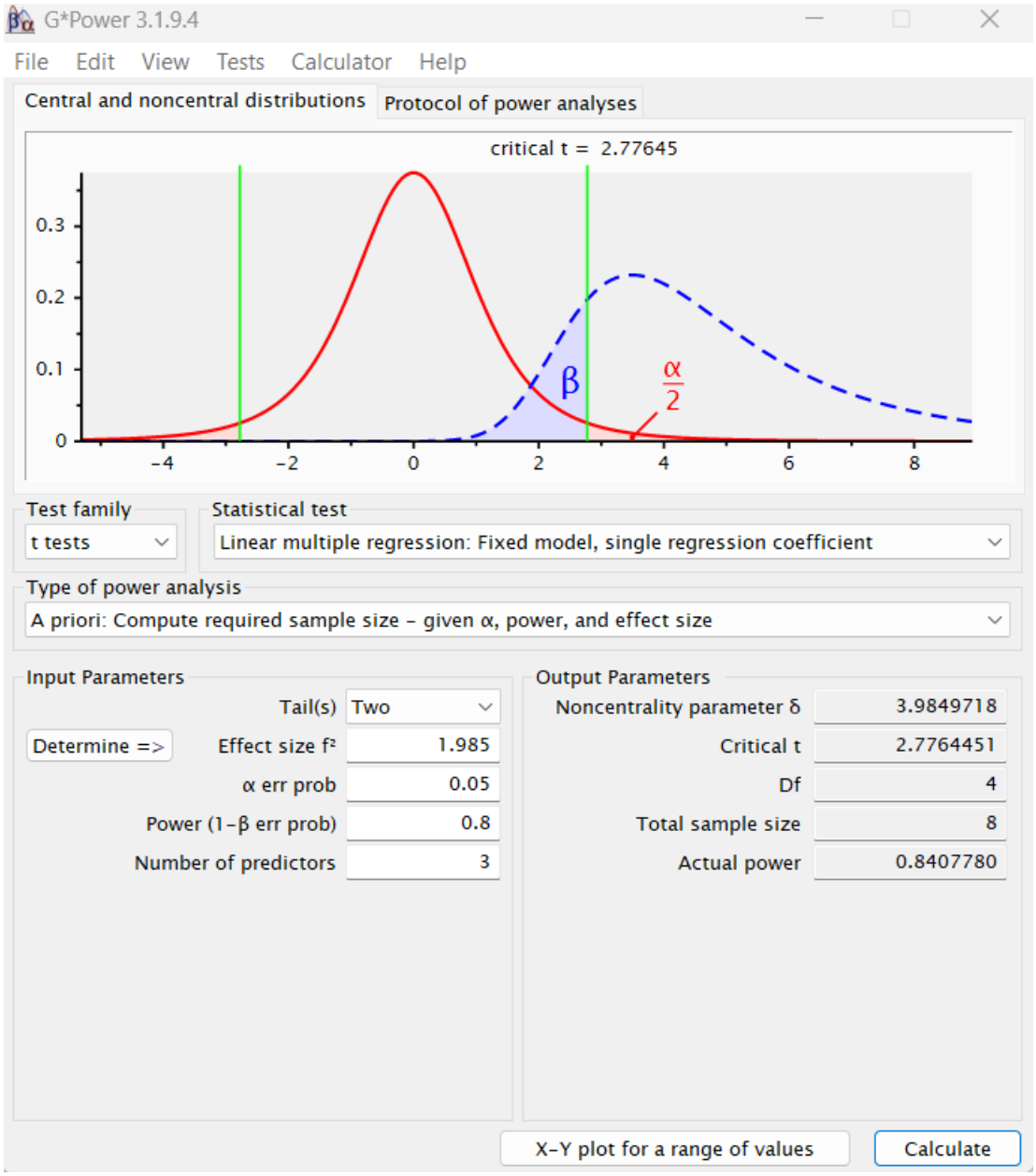
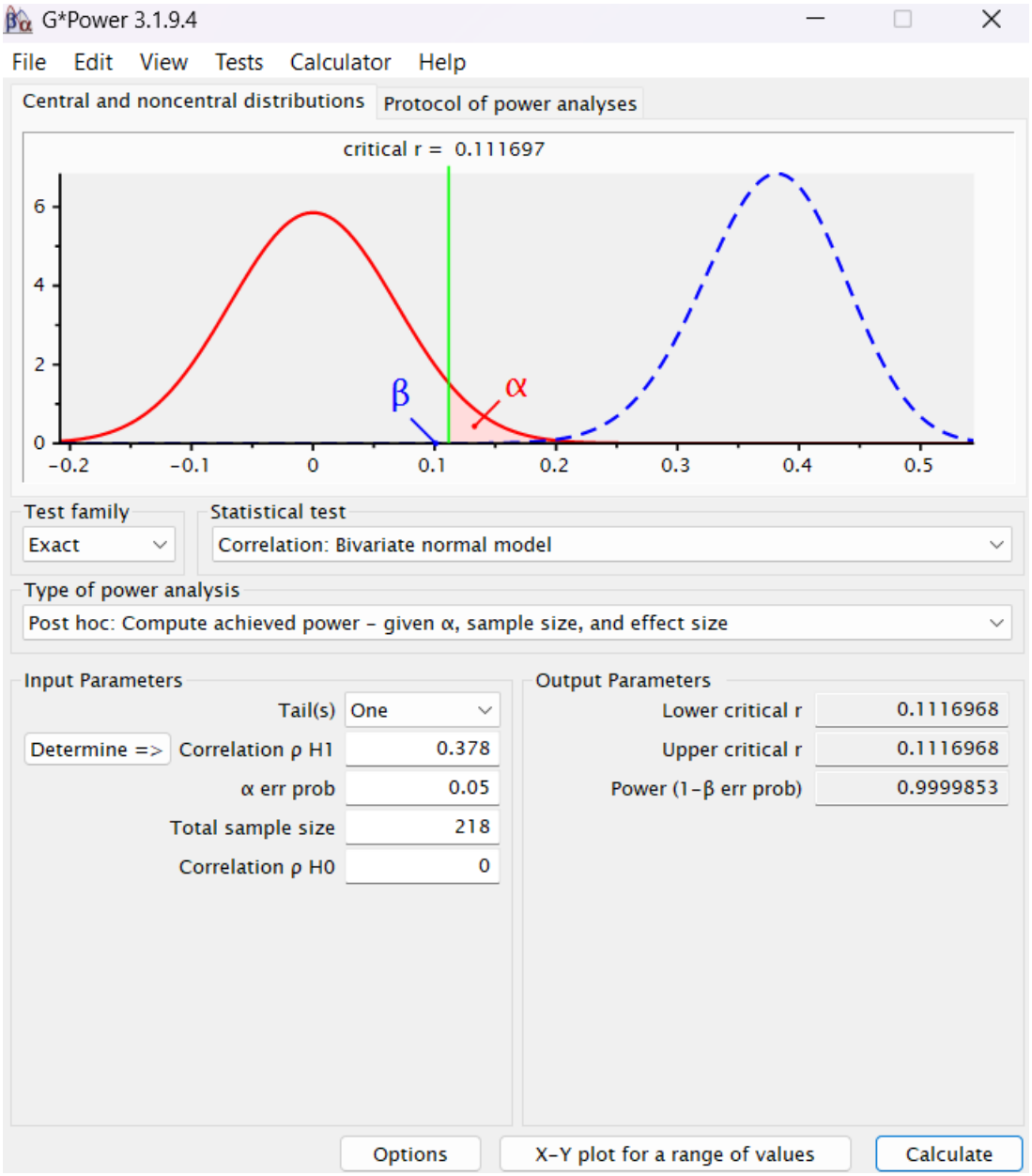
Appendices

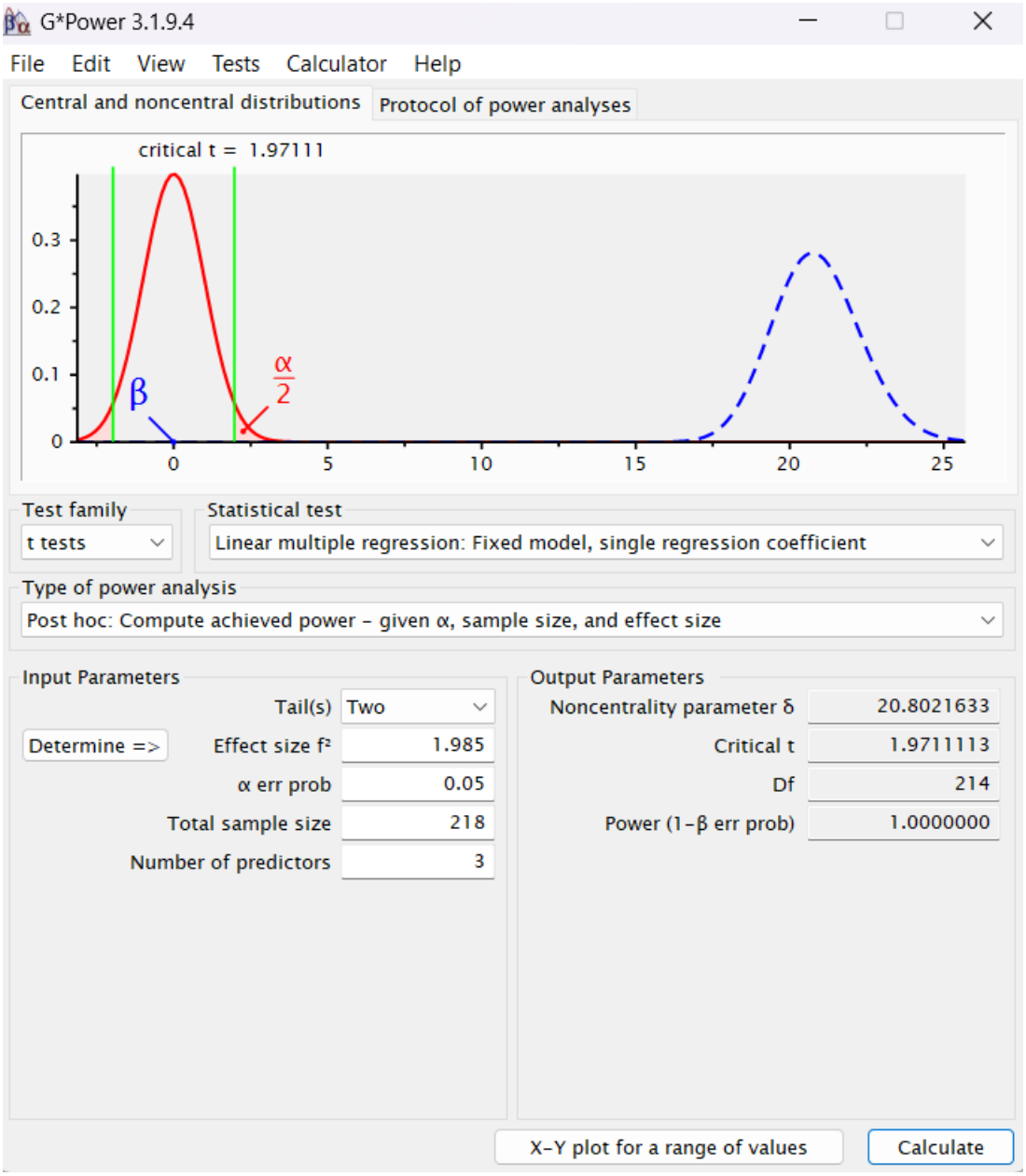
Appendix A: Sample Size Calculation




G*Power 3.1.9.4
File Edit View Tests Calculator Help
Central and noncentral distributions
Protocol of power analyses
critical t = 2.77645
0.3
0.2
0.1
0
−4
−2
0
2
4
6
8
β
α/2
Test family
t tests
Statistical test
Linear multiple regression: Fixed model, single regression coefficient
Type of power analysis
A priori: Compute required sample size – given α, power, and effect size
Input Parameters
Tail(s) Two
Determine =>
Effect size f²
1.985
α err prob
0.05
Power (1−β err prob)
0.8
Number of predictors
3
Output Parameters
Noncentrality parameter δ
3.9849718
Critical t
2.7764451
Df
4
Total sample size
8
Actual power
0.8407780
X-Y plot for a range of values
Calculate

Appendix B: Post-Hoc Power Analysis




G*Power 3.1.9.4
File Edit View Tests Calculator Help
Central and noncentral distributions
Protocol of power analyses
critical t = 1.97111
0.3
0.2
0.1
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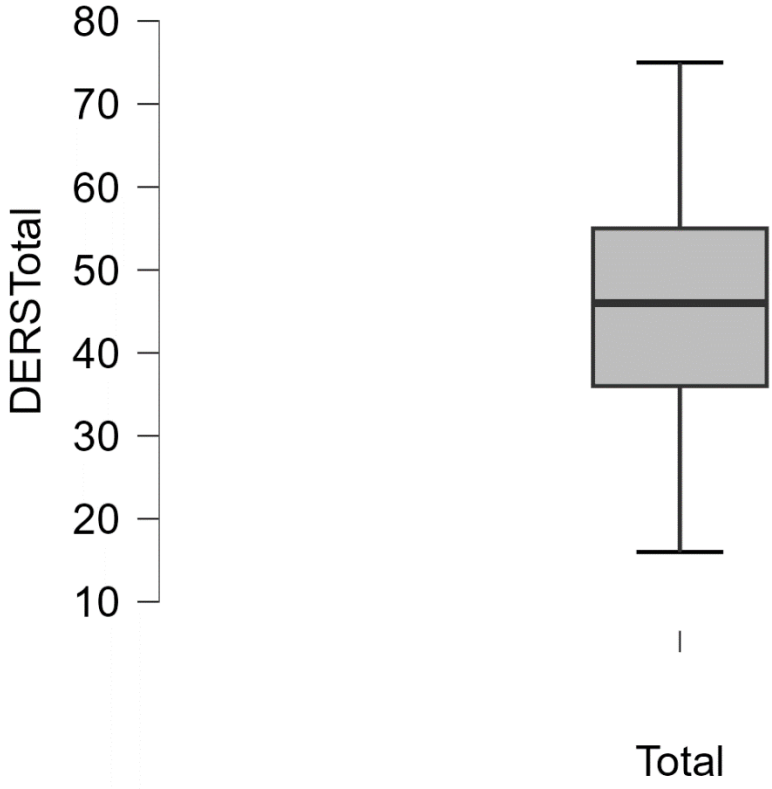
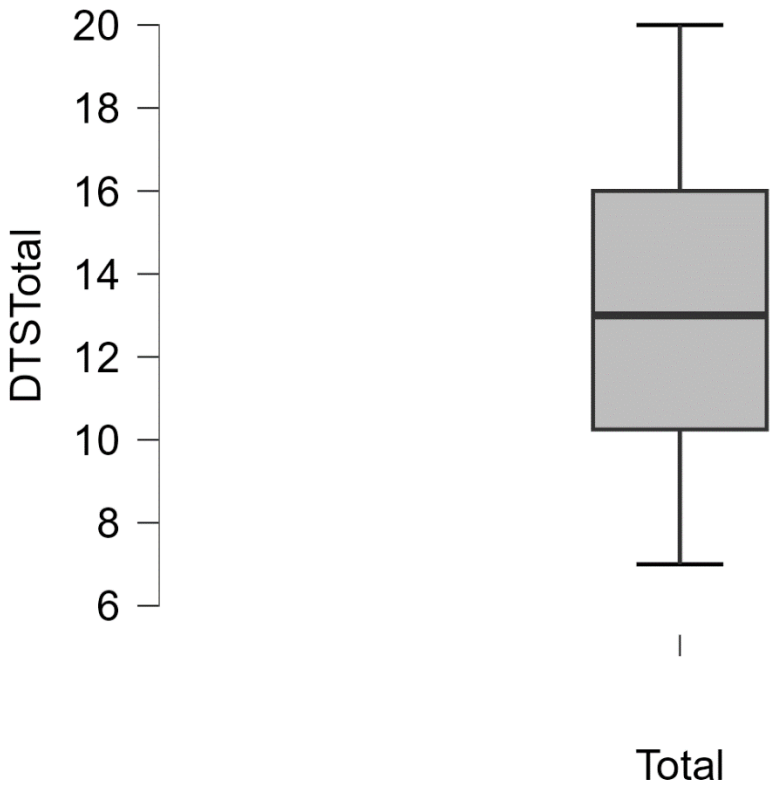
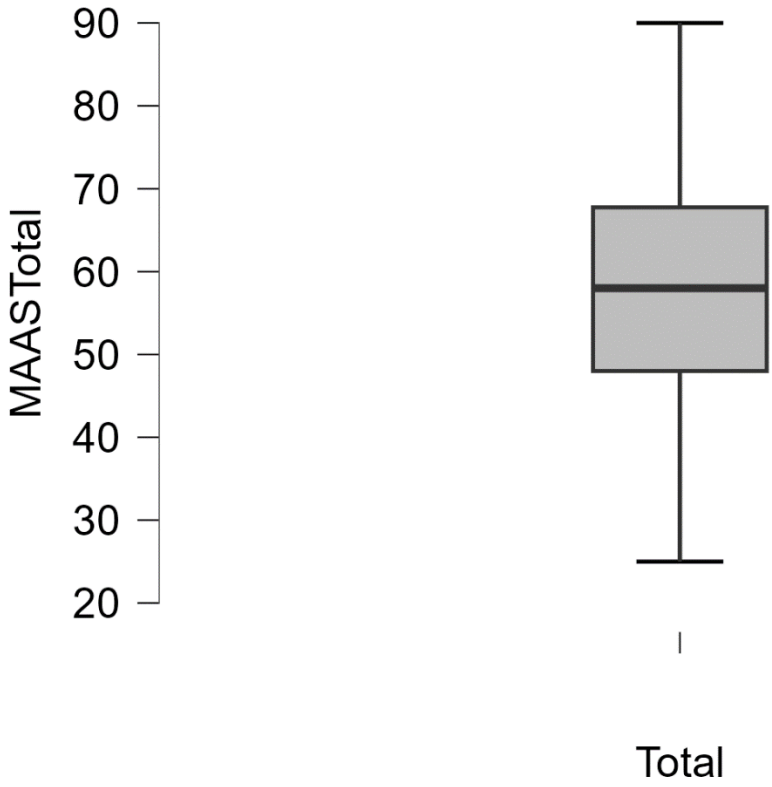
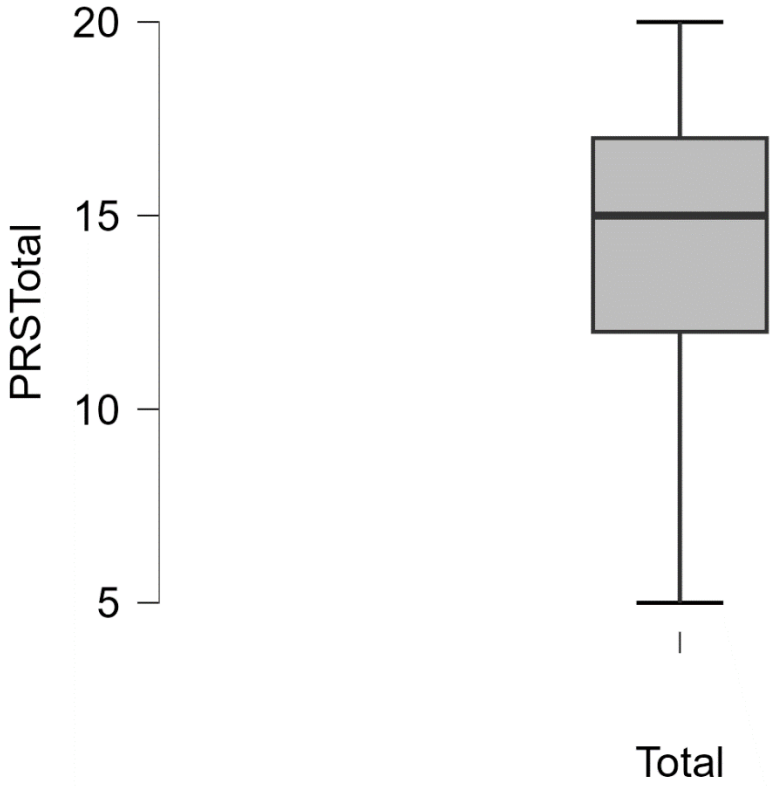
β
α/2
0
5
10
15
20
25
Test family
t tests
Statistical test
Linear multiple regression: Fixed model, single regression coefficient
Type of power analysis
Post hoc: Compute achieved power – given α, sample size, and effect size
Input Parameters
Tail(s) Two
Determine =>
Effect size f²
1.985
α err prob
0.05
Total sample size
218
Number of predictors
3
Output Parameters
Noncentrality parameter δ
20.8021633
Critical t
1.9711113
Df
214
Power (1–β err prob)
1.0000000
X–Y plot for a range of values
Calculate

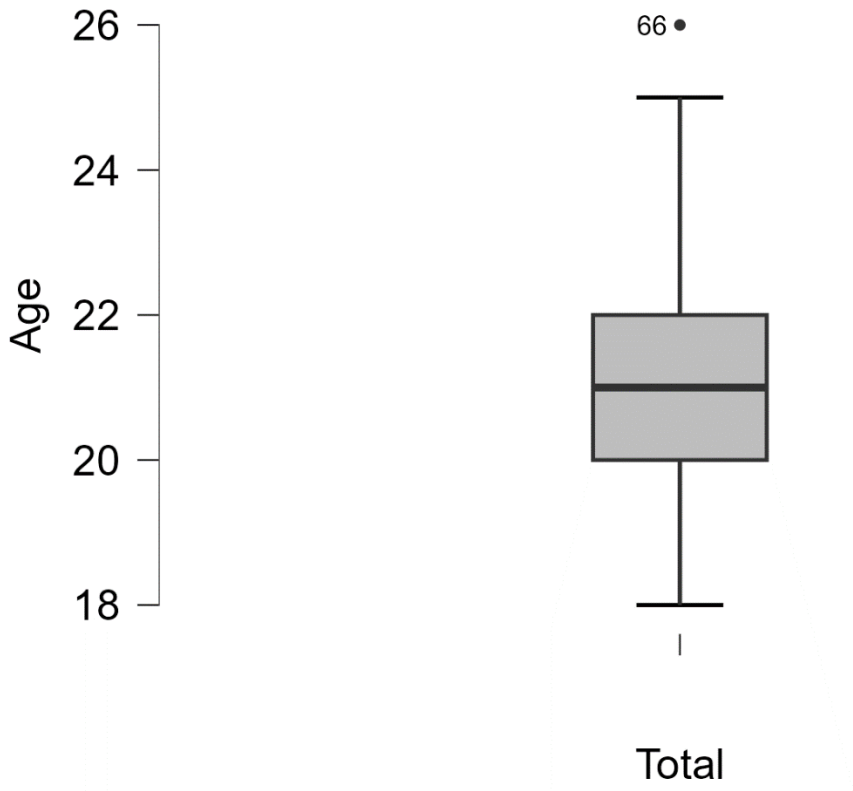
Appendix C: Boxplots






90
80
70
60
50
40
30
20
MAASTotal
Total


20
15
10
5
PRSTotal
Total


26
24
22
20
18
Age
66
Total

Appendix D: JASP Output for Reliability in Pilot Study

Emotion Regulation

Frequentist Scale Reliability Statistics

Estimate	Cronbach's α
Point estimate	0.910
95% CI lower bound	0.849
95% CI upper bound	0.950

Distress Tolerance

Frequentist Scale Reliability Statistics

Estimate	Cronbach's α
Point estimate	0.713
95% CI lower bound	0.494
95% CI upper bound	0.848

Mindfulness

Frequentist Scale Reliability Statistics

Estimate	Cronbach's α
Point estimate	0.860
95% CI lower bound	0.766
95% CI upper bound	0.922

Positive Reappraisal

Frequentist Scale Reliability Statistics

Estimate	Cronbach's α
Point estimate	0.835
95% CI lower bound	0.694
95% CI upper bound	0.916

Appendix E: JASP Output for Reliability in Actual Study

Emotion Regulation

Frequentist Scale Reliability Statistics

Estimate	Cronbach's α
Point estimate	0.925
95% CI lower bound	0.909
95% CI upper bound	0.938

Distress Tolerance

Frequentist Scale Reliability Statistics

Estimate	Cronbach's α
Point estimate	0.743
95% CI lower bound	0.681
95% CI upper bound	0.795

Mindfulness

Frequentist Scale Reliability Statistics

Estimate	Cronbach's α
Point estimate	0.897
95% CI lower bound	0.875
95% CI upper bound	0.916

Positive Reappraisal

Frequentist Scale Reliability Statistics

Estimate	Cronbach's α
Point estimate	0.844
95% CI lower bound	0.807
95% CI upper bound	0.876

Appendix F: JASP Output for Pearson's Product-Moment Correlation

Pearson's Correlations

Variable		DERSTotal	DTSTotal	MAASMean	PRSTotal
1. DERSTotal	Pearson's r	—			
	p-value	—			
2. DTSTotal	Pearson's r	0.759***	—		
	p-value	< .001	—		
3. MAASMean	Pearson's r	0.656***	0.723***	—	
	p-value	< .001	< .001	—	
4. PRSTotal	Pearson's r	0.353***	0.454***	0.379***	—
	p-value	< .001	< .001	< .001	—

Note. All tests one-tailed, for positive correlation.
* p < .05, ** p < .01, *** p < .001, one-tailed

Shapiro-Wilk Test for Bivariate Normality

		Shapiro-Wilk	p
DERSTotal	- DTSTotal	0.995	0.685
DERSTotal	- MAASMean	0.968	< .001
DERSTotal	- PRSTotal	0.985	0.024
DTSTotal	- MAASMean	0.979	0.002
DTSTotal	- PRSTotal	0.980	0.004
MAASMean	- PRSTotal	0.973	< .001

Appendix G: JASP Output for Spearman Rank Correlation Coefficient

Spearman's Correlations

Variable		DERSTotal	MAASMean	PRSTotal
1. DERSTotal	Spearman's rho	—		
	p-value	—		
2. MAASMean	Spearman's rho	0.670***	—	
	p-value	< .001	—	
3. PRSTotal	Spearman's rho	0.384***	0.387***	—
	p-value	< .001	< .001	—

Note. All tests were one-tailed and for positive correlation.

* p < .05, ** p < .01, *** p < .001, one-tailed

Appendix H: JASP Output for Multiple Linear Regression

Model Summary - DERSTotal

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p	Durbin-Watson		
										Autocorrelation	Statistic	p
H_0	0.000	0.000	0.000	12.635	0.000		0	217		0.075	1.845	0.250
H_1	0.775	0.600	0.594	8.047	0.600	106.992	3	214	< .001	0.017	1.958	0.754

ANOVA

Model		Sum of Squares	df	Mean Square	F	p
H_1	Regression	20784.676	3	6928.225	106.992	< .001
	Residual	13857.531	214	64.755		
	Total	34642.206	217			

Note. The intercept model is omitted, as no meaningful information can be shown.

Coefficients

Model		Unstandardized	Standard Error	Standardized	t	p	Collinearity Statistics	
							Tolerance	VIF
H_0	(Intercept)	50.537	0.856		59.056	< .001		
H_1	(Intercept)	9.503	2.876		3.304	0.001		
	DTSTotal	2.205	0.241	0.597	9.162	< .001	0.440	2.274
	MAASMean	3.203	0.890	0.226	3.600	< .001	0.474	2.108
	PRSTotal	-0.016	0.182	-0.004	-0.087	0.931	0.788	1.268

Casewise Diagnostics

Case Number	Std. Residual	DERSTotal	Predicted Value	Residual	Cook's Distance
1	1.354	50.000	39.291	10.709	0.016
2	0.183	62.000	60.535	1.465	0.000
3	0.162	63.000	61.705	1.295	0.000
4	0.051	68.000	67.592	0.408	0.000
5	1.481	72.000	60.156	11.844	0.007
6	0.543	41.000	36.681	4.319	0.002
7	-0.447	34.000	37.552	-3.552	0.001
8	1.473	78.000	66.367	11.633	0.021
9	-0.224	61.000	62.787	-1.787	0.000
10	0.118	33.000	32.059	0.941	0.000
11	0.060	38.000	37.521	0.479	0.000
12	-0.324	50.000	52.579	-2.579	0.001
13	0.584	40.000	35.379	4.621	0.003
14	-1.281	55.000	65.207	-10.207	0.008
15	0.679	41.000	35.609	5.391	0.003
16	0.751	55.000	48.984	6.016	0.001
17	-1.232	44.000	53.861	-9.861	0.004
18	-0.067	54.000	54.533	-0.533	0.000
19	-0.227	45.000	46.810	-1.810	0.000
20	-0.321	43.000	45.569	-2.569	0.000
21	1.538	46.000	33.751	12.249	0.013
22	-1.566	50.000	62.525	-12.525	0.008
23	0.181	67.000	65.554	1.446	0.000
24	0.318	64.000	61.459	2.541	0.000
25	1.206	58.000	48.327	9.673	0.002
26	-1.064	44.000	52.542	-8.542	0.002
27	0.185	51.000	49.529	1.471	0.000
28	1.063	70.000	61.554	8.446	0.007
29	1.694	52.000	38.492	13.508	0.013
30	-0.390	49.000	52.108	-3.108	0.001
31	1.106	55.000	46.138	8.862	0.003
32	-0.852	40.000	46.835	-6.835	0.001
33	0.447	58.000	54.438	3.562	0.001
34	0.060	49.000	48.521	0.479	0.000
35	-1.033	39.000	47.292	-8.292	0.001
36	-0.694	35.000	40.525	-5.525	0.003
37	-0.838	36.000	42.691	-6.691	0.003
38	-0.557	35.000	39.448	-4.448	0.001
39	0.453	57.000	53.363	3.637	0.000
40	0.600	58.000	53.183	4.817	0.000
41	-0.362	40.000	42.898	-2.898	0.000
42	-0.423	39.000	42.334	-3.334	0.002
43	0.596	69.000	64.252	4.748	0.002

Casewise Diagnostics

Case Number	Std. Residual	DERSTotal	Predicted Value	Residual	Cook's Distance
44	0.045	41.000	40.645	0.355	0.000
45	-0.266	65.000	67.119	-2.119	0.000
46	1.574	80.000	67.508	12.492	0.017
47	0.887	69.000	61.901	7.099	0.002
48	1.667	62.000	48.746	13.254	0.017
49	-0.016	37.000	37.126	-0.126	0.000
50	0.129	47.000	45.963	1.037	0.000
51	0.317	50.000	47.459	2.541	0.000
52	0.165	41.000	39.678	1.322	0.000
53	-1.105	43.000	51.854	-8.854	0.003
54	2.120	78.000	61.033	16.967	0.013
55	0.907	68.000	60.770	7.230	0.004
56	0.190	62.000	60.487	1.513	0.000
57	0.943	60.000	52.455	7.545	0.002
58	-1.222	32.000	41.783	-9.783	0.004
59	1.271	63.000	52.852	10.148	0.007
60	-0.918	46.000	53.326	-7.326	0.004
61	-2.255	32.000	50.091	-18.091	0.008
62	-0.445	41.000	44.542	-3.542	0.001
63	3.104	76.000	51.944	24.056	0.188
64	0.056	41.000	40.549	0.451	0.000
65	2.045	68.000	51.735	16.265	0.024
66	2.155	79.000	61.832	17.168	0.024
67	0.220	48.000	46.257	1.743	0.000
68	-0.378	43.000	46.027	-3.027	0.000
69	0.207	41.000	39.348	1.652	0.000
70	-0.588	56.000	60.683	-4.683	0.002
71	-0.740	37.000	42.919	-5.919	0.002
72	-0.184	36.000	37.468	-1.468	0.000
73	0.337	38.000	35.315	2.685	0.001
74	-0.547	63.000	67.365	-4.365	0.001
75	-0.466	59.000	62.724	-3.724	0.001
76	0.134	46.000	44.928	1.072	0.000
77	0.514	70.000	65.954	4.046	0.003
78	-0.128	69.000	70.007	-1.007	0.000
79	-0.447	34.000	37.552	-3.552	0.001
80	0.183	62.000	60.535	1.465	0.000
81	0.931	59.000	51.592	7.408	0.005
82	0.624	53.000	48.037	4.963	0.002
83	0.489	51.000	47.078	3.922	0.000
84	0.450	71.000	67.434	3.566	0.002
85	0.356	72.000	69.173	2.827	0.001
86	-2.147	39.000	56.224	-17.224	0.007

Casewise Diagnostics

Case Number	Std. Residual	DERSTotal	Predicted Value	Residual	Cook's Distance
87	1.257	68.000	57.951	10.049	0.005
88	-1.038	32.000	40.303	-8.303	0.003
89	-0.369	52.000	54.959	-2.959	0.000
90	-2.854	50.000	72.575	-22.575	0.072
91	1.291	72.000	61.726	10.274	0.010
92	-0.373	41.000	43.989	-2.989	0.000
93	-0.476	31.000	34.786	-3.786	0.001
94	0.196	52.000	50.437	1.563	0.000
95	2.582	67.000	46.337	20.663	0.018
96	-0.169	54.000	55.327	-1.327	0.000
97	0.047	40.000	39.636	0.364	0.000
98	-2.514	30.000	50.154	-20.154	0.012
99	0.515	51.000	46.866	4.134	0.000
100	-1.408	21.000	32.207	-11.207	0.011
101	-0.537	51.000	55.301	-4.301	0.001
102	0.051	37.000	36.597	0.403	0.000
103	0.596	41.000	36.319	4.681	0.004
104	-0.060	44.000	44.478	-0.478	0.000
105	0.056	56.000	55.552	0.448	0.000
106	-0.536	34.000	38.246	-4.246	0.002
107	-1.330	39.000	49.665	-10.665	0.003
108	0.476	70.000	66.211	3.789	0.001
109	-0.102	46.000	46.819	-0.819	0.000
110	1.180	64.000	54.565	9.435	0.005
111	-0.933	49.000	56.471	-7.471	0.002
112	-3.747	28.000	57.588	-29.588	0.136
113	-1.138	46.000	55.094	-9.094	0.005
114	1.224	65.000	55.205	9.795	0.004
115	-0.122	50.000	50.978	-0.978	0.000
116	0.043	49.000	48.658	0.342	0.000
117	-0.553	44.000	48.431	-4.431	0.001
118	-1.291	43.000	53.363	-10.363	0.002
119	-0.370	41.000	43.957	-2.957	0.000
120	-0.635	42.000	47.093	-5.093	0.001
121	0.513	59.000	54.896	4.104	0.001
122	0.199	70.000	68.416	1.584	0.000
123	-0.209	46.000	47.665	-1.665	0.000
124	0.490	63.000	59.070	3.930	0.001
125	0.787	51.000	44.714	6.286	0.002
126	-0.241	50.000	51.933	-1.933	0.000
127	-1.232	44.000	53.861	-9.861	0.004
128	0.703	52.000	46.368	5.632	0.001
129	0.863	59.000	52.081	6.919	0.001

Casewise Diagnostics

Case Number	Std. Residual	DERSTotal	Predicted Value	Residual	Cook's Distance
130	-0.841	32.000	38.707	-6.707	0.003
131	1.819	70.000	55.724	14.276	0.043
132	0.972	69.000	61.228	7.772	0.003
133	-0.715	52.000	57.720	-5.720	0.001
134	2.200	66.000	48.383	17.617	0.012
135	0.162	63.000	61.705	1.295	0.000
136	-0.536	34.000	38.246	-4.246	0.002
137	-1.330	39.000	49.665	-10.665	0.003
138	0.476	70.000	66.211	3.789	0.001
139	0.051	68.000	67.592	0.408	0.000
140	-0.324	50.000	52.579	-2.579	0.001
141	-0.602	45.000	49.797	-4.797	0.002
142	-1.333	39.000	49.696	-10.696	0.002
143	1.122	63.000	54.003	8.997	0.002
144	0.359	72.000	69.263	2.737	0.004
145	-1.454	35.000	46.615	-11.615	0.008
146	-0.024	52.000	52.196	-0.196	0.000
147	0.375	43.000	40.004	2.996	0.001
148	-1.246	30.000	39.941	-9.941	0.007
149	-0.372	46.000	48.961	-2.961	0.001
150	-1.037	52.000	60.257	-8.257	0.006
151	-0.920	34.000	41.333	-7.333	0.004
152	-1.951	41.000	56.590	-15.590	0.013
153	-1.212	43.000	52.722	-9.722	0.002
154	0.370	51.000	48.052	2.948	0.001
155	-0.366	50.000	52.937	-2.937	0.000
156	-1.022	42.000	50.159	-8.159	0.004
157	-1.764	39.000	53.151	-14.151	0.004
158	0.441	64.000	60.487	3.513	0.001
159	-0.386	46.000	49.061	-3.061	0.001
160	-0.522	51.000	55.110	-4.110	0.003
161	-0.896	46.000	53.143	-7.143	0.004
162	0.756	50.000	43.964	6.036	0.002
163	-0.137	60.000	61.085	-1.085	0.000
164	-0.948	48.000	55.600	-7.600	0.002
165	-0.793	56.000	62.346	-6.346	0.002
166	-1.064	44.000	52.542	-8.542	0.002
167	0.711	44.000	38.313	5.687	0.002
168	-0.655	60.000	65.213	-5.213	0.002
169	0.407	52.000	48.741	3.259	0.000
170	-0.469	41.000	44.709	-3.709	0.002
171	2.354	61.000	42.336	18.664	0.042
172	1.421	71.000	59.648	11.352	0.007

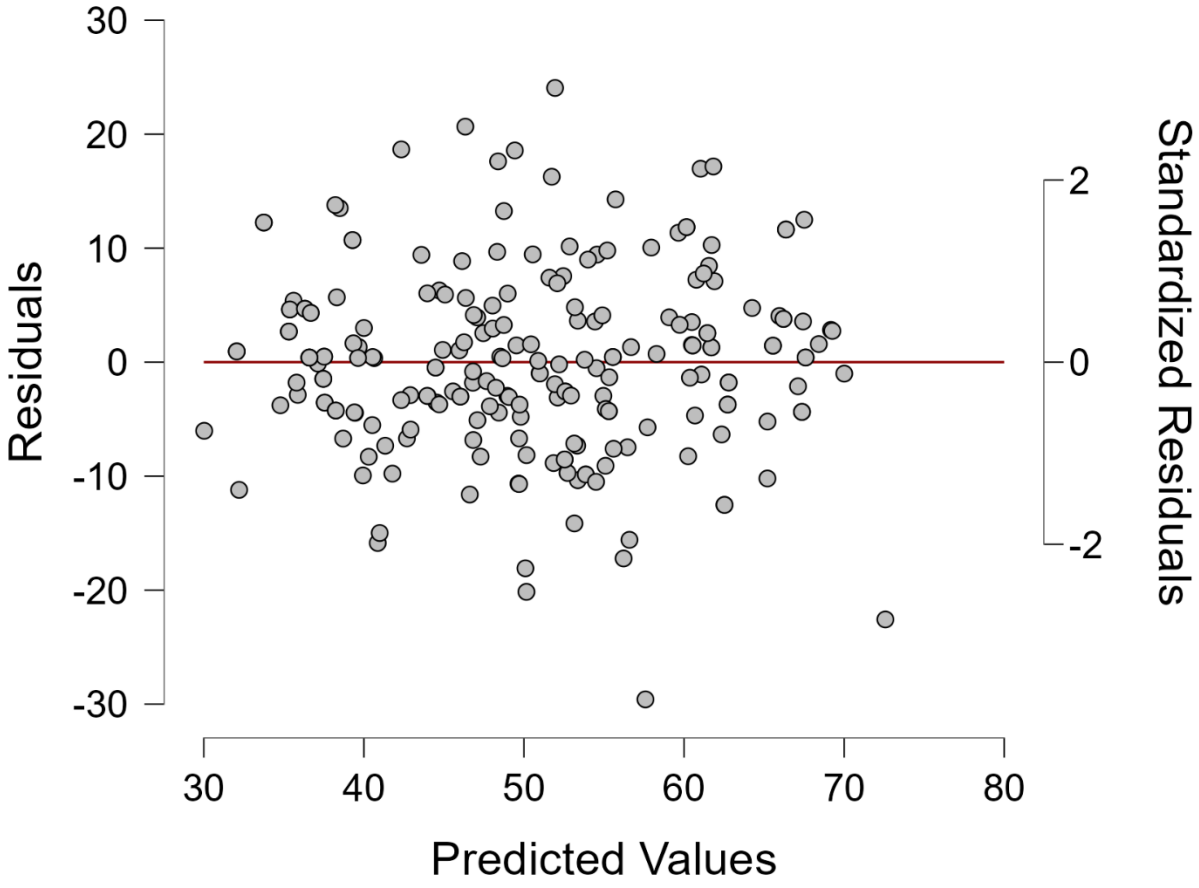
Casewise Diagnostics

Case Number	Std. Residual	DERSTotal	Predicted Value	Residual	Cook's Distance
173	1.174	53.000	43.591	9.409	0.003
174	1.177	60.000	50.548	9.452	0.002
175	-0.766	24.000	30.026	-6.026	0.007
176	-0.124	50.000	50.993	-0.993	0.000
177	-0.171	59.000	60.368	-1.368	0.000
178	-2.000	25.000	40.865	-15.865	0.029
179	-0.834	43.000	49.696	-6.696	0.001
180	1.473	78.000	66.367	11.633	0.021
181	-0.224	61.000	62.787	-1.787	0.000
182	0.118	33.000	32.059	0.941	0.000
183	0.060	38.000	37.521	0.479	0.000
184	0.584	40.000	35.379	4.621	0.003
185	0.014	51.000	50.890	0.110	0.000
186	-0.281	46.000	48.248	-2.248	0.000
187	-0.362	33.000	35.872	-2.872	0.001
188	-1.938	26.000	40.989	-14.989	0.077
189	0.409	63.000	59.727	3.273	0.000
190	0.026	54.000	53.792	0.208	0.000
191	0.090	59.000	58.282	0.718	0.000
192	0.164	58.000	56.685	1.315	0.000
193	-0.229	34.000	35.798	-1.798	0.001
194	-1.310	44.000	54.501	-10.501	0.004
195	2.320	68.000	49.429	18.571	0.014
196	0.739	51.000	45.071	5.929	0.001
197	-0.483	44.000	47.870	-3.870	0.001
198	-0.551	35.000	39.411	-4.411	0.001
199	-0.465	46.000	49.728	-3.728	0.000
200	1.749	52.000	38.217	13.783	0.032
201	-0.378	43.000	46.027	-3.027	0.000
202	1.538	46.000	33.751	12.249	0.013
203	-1.566	50.000	62.525	-12.525	0.008
204	-0.537	51.000	55.301	-4.301	0.001
205	0.051	37.000	36.597	0.403	0.000
206	0.596	41.000	36.319	4.681	0.004
207	-0.060	44.000	44.478	-0.478	0.000
208	0.056	56.000	55.552	0.448	0.000
209	1.354	50.000	39.291	10.709	0.016
210	0.181	67.000	65.554	1.446	0.000
211	0.318	64.000	61.459	2.541	0.000
212	0.543	41.000	36.681	4.319	0.002
213	1.481	72.000	60.156	11.844	0.007
214	-0.184	36.000	37.468	-1.468	0.000
215	0.337	38.000	35.315	2.685	0.001

Casewise Diagnostics

Case Number	Std. Residual	DERSTotal	Predicted Value	Residual	Cook's Distance
216	-0.547	63.000	67.365	-4.365	0.001
217	-0.466	59.000	62.724	-3.724	0.001
218	0.051	37.000	36.597	0.403	0.000

Residuals vs. Predicted



Appendix I: Difficulties in Emotion Regulation Scale (DERS-16)

Please read each statement carefully before answering. Select how often you behave in the stated manner on the scale from 1 (almost never) to 5 (almost always).

1. I have difficulty making sense out of my feelings.

2. I am confused about how I feel.

3. When I am upset, I have difficulty getting work done.

4. When I am upset, I become out of control.

5. When I am upset, I believe that I will remain that way for a long time.

6. When I am upset, I believe that I will end up feeling very depressed.

7. When I am upset, I have difficulty focusing on other things.

8. When I am upset, I feel out of control.

9. When I am upset, I feel ashamed with myself for feeling that way.

10. When I am upset, I feel like I am weak.

11. When I am upset, I have difficulty controlling my behaviours.

12. When I am upset, I believe that there is nothing I can do to make myself feel better.

13. When I am upset, I become irritated with myself for feeling that way.

14. When I am upset, I start to feel very bad about myself.

15. When I am upset, I have difficulty thinking about anything else.

16. When I am upset, my emotions feel overwhelming.

Appendix J: Distress Tolerance Scale-Short Form (DTS-SF)

Please read each statement carefully before answering. Select how often you behave in the stated manner on the scale from 1 (strongly agree) to 5 (strongly disagree).

1. My feelings of distress are so intense that they completely take over.

2. Being distressed or upset is always a major deal for me.

3. I cannot handle feeling distressed or upset.

4. I will do anything to stop feeling distressed or upset.

Appendix K: Mindful Attention Awareness Scale (MAAS)

Please read each statement carefully before answering. Select how often you behave in the stated manner on the scale from 1 (almost always) to 6 (almost never).

1. I could be experiencing some emotion and not be conscious of it until sometime later.

2. I break or spill things because of carelessness, not paying attention, or thinking of something else.

3. I find it difficult to stay focused on what's happening in the present.

4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.

5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.

6. I forget a person's name almost as soon as I've been told it for the first time.

7. It seems I am "running on automatic" without much awareness of what I'm doing.

8. I rush through activities without being really attentive to them.

9. I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there.

10. I do jobs or tasks automatically, without being aware of what I'm doing.

11. I find myself listening to someone with one ear, doing something else at the same time.

12. I drive places on "automatic pilot" and then wonder why I went there.

13. I find myself preoccupied with the future or the past.

14. I find myself doing things without paying attention.

15. I snack without being aware that I’m eating.

Appendix L: Positive Reappraisal Subscale of Cognitive Emotion Regulation Questionnaire (CERQ)

Please read each statement carefully before answering. Select how often you behave in the stated manner during stressful events on the scale from 1 (almost never) to 5 (almost always).

1. I think I can learn something from the situation.

2. I think that I can become a stronger person as a result of what has happened.

3. I think that the situation also has its positive sides.

4. I look for the positive sides to the matter.

Appendix M: Ethical Clearance Approval

UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)
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Re: U/SERC/18/2023

10 January 2023

Dr Pung Pit Wan
Head, Department of Psychology and Counselling
Faculty of Arts and Social Science
Universiti Tunku Abdul Rahman
Jalan Universiti, Bandar Baru Barat
31900 Kampar, Perak.

Dear Dr Pung,

Ethical Approval For Research Project/Protocol

We refer to the application for ethical approval for your students' research project from Bachelor of Social Science (Hons) Guidance and Counselling programme enrolled in course UAPC3083/UAPC3093. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

	Research Title	Student's Name	Supervisor's Name	Approval Validity
1.	Emotion Regulation Among Undergraduates in Malaysia: Distress Tolerance, Mindfulness, and Positive Reappraisal	Ching Kai Xuan	Mr Ho Khee Hoong	10 January 2023 – 9 January 2024
2.	A Study of Smartphone Addiction, Fear of Rejection, and Interpersonal Communication Skills as Predictors of Social Connectedness Among Malaysian Undergraduate Students	Dewayne Kuek Hui En		
3.	Help-seeking Behaviour Among Male University Students: Mental Health Literacy, Self-stigma and Conformity Towards Masculine Norms	Mah Jin Sheng		
4.	A study of depression, stress, and pornography consumption among undergraduate students in Malaysia	Chua Jing Yi	Mr Lee Wei Rong	
5.	The Relationship between Spiritual Intelligence, Cognitive Flexibility and Perceived Stress among Undergraduates in Malaysia	Tanita Sadiq		
6.	The Effects of Different Cooperative Communication Mechanics on the Problem-Solving Skills and Creativity Levels of University Students	Jeremy Lam Yew Kong	Ms Kavitha a/p Nalla Muthu	
7.	The Effectiveness of CBT on Big Five Personality Traits and Internet Aggression in Undergraduate Students: A Single Subject Study	Teoh Wen Qi		
8.	The Effectiveness of Acceptance and Commitment Therapy (ACT) on Social Appearance Anxiety and Self-Compassion Among Malaysian Undergraduate Students: A Single Case Study	Wong Yik Theng		
9.	Understanding the Psychological Well Being of Covid-19 Survivors	Legasree a/p Ravi Chandran	Ms Komathi a/p Lokithasan	
10.	A Phenomenological Exploration of Counselling Students' Experiences with Group Counselling Sessions	Ng Jia Wei		

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Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288 Fax: (603) 9019 8868
Website: www.utar.edu.my

	Research Title	Student's Name	Supervisor's Name	Approval Validity
11.	A Study of the Relationship Between Perceived Social Support, Self-Efficacy, And Academic Stress Among Undergraduate Students in Malaysia	Amanda Lim Xin Yi	Pn Anisah Zainab Binti Musa	10 January 2023 – 9 January 2024
12.	Post Covid-19 Pandemic: Motivation, Autonomy, Relatedness, Self-competence Among Malaysian Undergraduate Students	Chai Jow Yee		

The conduct of this research is subject to the following:

(1) The participants' informed consent be obtained prior to the commencement of the research;

(2) Confidentiality of participants' personal data must be maintained; and

(3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.

(4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

Should the students collect personal data of participants in their studies, please have the participants sign the attached Personal Data Protection Statement for records.

Thank you.

Yours sincerely,

Professor Ts Dr Faidz bin Abd Rahman
Chairman
UTAR Scientific and Ethical Review Committee

c.c Dean, Faculty of Arts and Social Science
Director, Institute of Postgraduate Studies and Research

Appendix N: Supervisor's Comments on Originality Report

Universiti Tunku Abdul Rahman			
Form Title : Supervisor's Comments on Originality Report Generated by Turnitin for Submission of Final Year Project Report (for Undergraduate Programmes)			
Form Number: FM-IAD-005	Rev No.: 0	Effective Date: 01/10/2013	Page No.: 1of 1

FACULTY OF ARTS AND SOCIAL SCIENCE

Full Name(s) of Candidate(s)	Ching Kai Xuan
ID Number(s)	19AAB03906
Programme / Course	Bachelor of Social Science (Honours) Guidance and Counselling
Title of Final Year Project	Emotion Regulation Among Undergraduates in Malaysia: Distress Tolerance, Mindfulness, and Positive Reappraisal

Similarity	**Supervisor's Comments (Compulsory if parameters of originality exceeds the limits approved by UTAR)**
Overall similarity index:8 % **Similarity by source** Internet Sources:6 % Publications:3 % Student Papers:2 %	
Number of individual sources listed of more than 3% similarity:	Nil
Parameters of originality required and limits approved by UTAR are as follows: **(i) Overall similarity index is 20% and below, and** **(ii) Matching of individual sources listed must be less than 3% each, and** **(iii) Matching texts in continuous block must not exceed 8 words** ***Note: Parameters (i) – (ii) shall exclude quotes, bibliography and text matches which are less than 8 words.***	

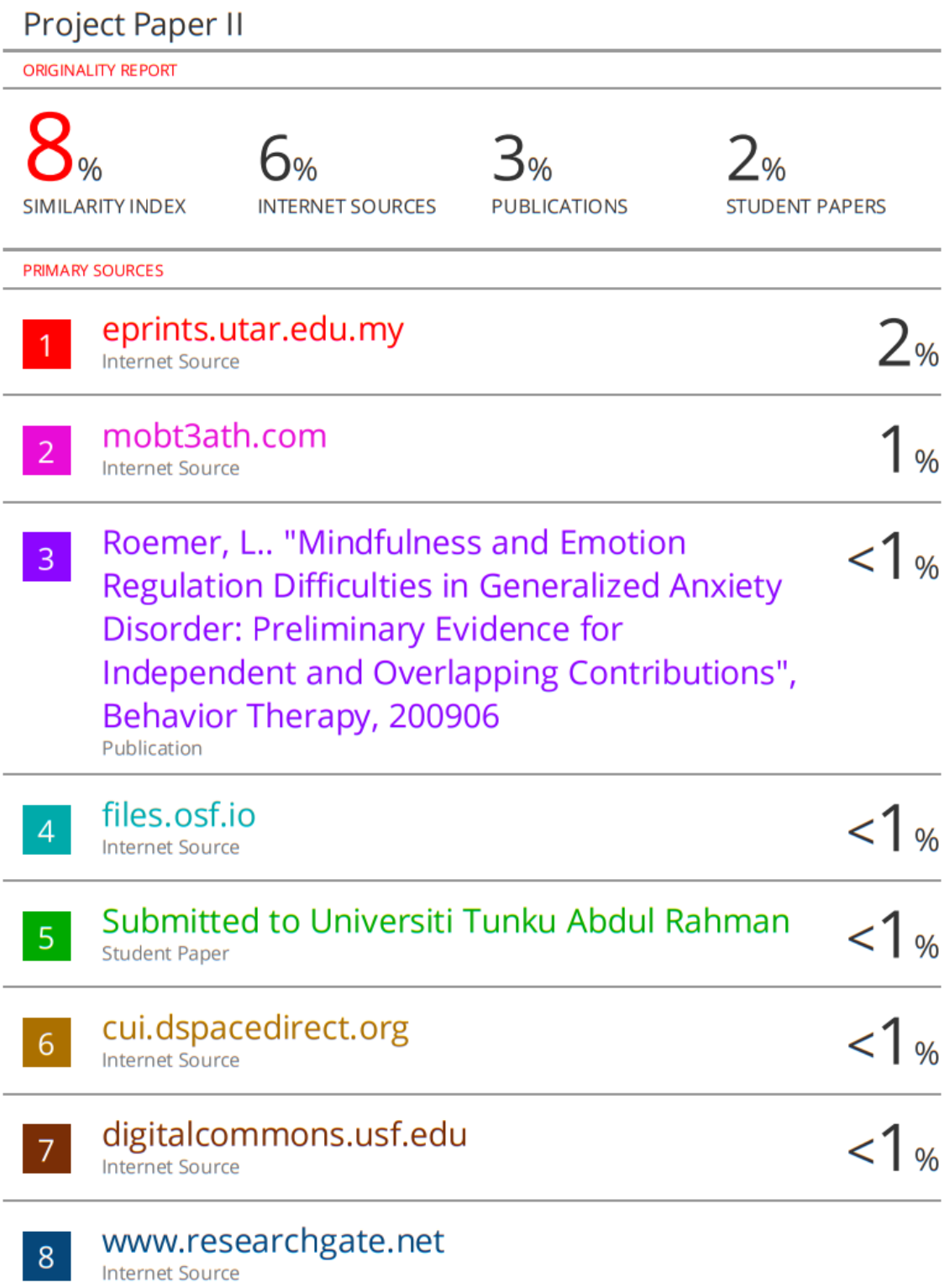
Note Supervisor/Candidate(s) is/are required to provide softcopy of full set of the originality report toFaculty/Institute

Based on the above results, I hereby declare that I am satisfied with the originality of the FinalYear Project Report submitted by my student(s) as named above.

Daniel Ho

Signature of Supervisor	Signature of Co-Supervisor
Name:Ho Khee Hoong	Name:
Date:18 Apr 2023	Date:

Appendix O: Turnitin Report



Project Paper II

ORIGINALITY REPORT

8%	6%	3%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	eprints.utar.edu.my Internet Source	2%
2	mobt3ath.com Internet Source	1%
3	Roemer, L.. "Mindfulness and Emotion Regulation Difficulties in Generalized Anxiety Disorder: Preliminary Evidence for Independent and Overlapping Contributions", Behavior Therapy, 200906 Publication	<1%
4	files.osf.io Internet Source	<1%
5	Submitted to Universiti Tunku Abdul Rahman Student Paper	<1%
6	cui.dspacedirect.org Internet Source	<1%
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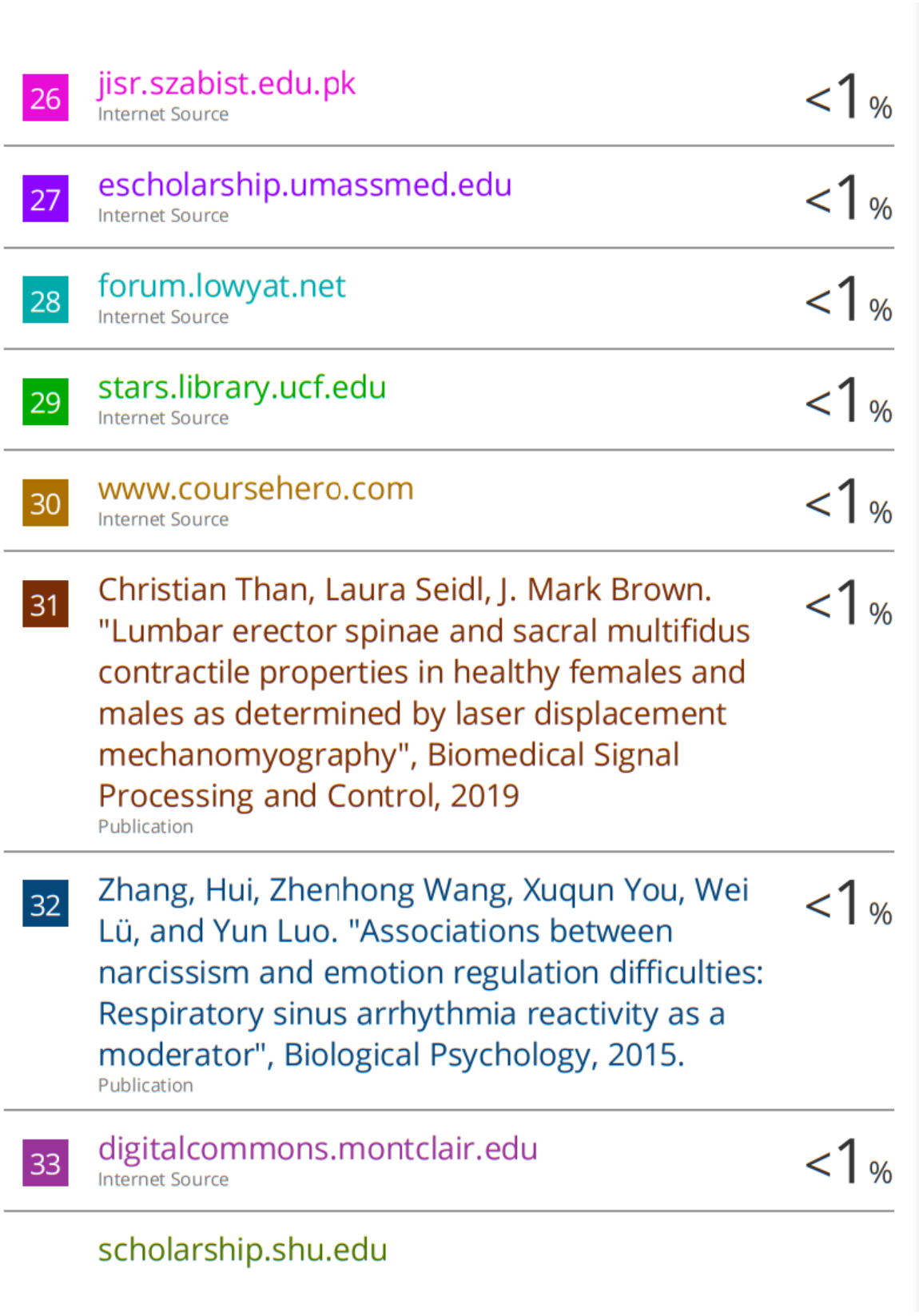
13	Submitted to Monash University Student Paper	<1 %
14	Submitted to Middle East Technical University Student Paper	<1 %
15	files.eqcf.org Internet Source	<1 %
16	Lauryn E. Garner, Nathaniel Van Kirk, Eric D. Tifft, Jason W. Krompinger et al. "Validation of the distress tolerance scale-short form in obsessive compulsive disorder", Journal of Clinical Psychology, 2017 Publication	<1 %
17	coek.info Internet Source	<1 %
	link.springer.com	

18	Internet Source	<1 %
19	Submitted to Mae Fah Luang University Student Paper	<1 %
20	escholarship.org Internet Source	<1 %
21	Eva Costa Martins, Oana Mărcuș, Juliana Leal, Laura Visu-Petra. "Assessing hot and cool executive functions in preschoolers: affective flexibility predicts emotion regulation", Early Child Development and Care, 2018 Publication	<1 %
22	derby.openrepository.com Internet Source	<1 %
23	Submitted to University of Winchester Student Paper	<1 %
24	Gabriele Melli, Carlo Chiorri, Antonella Lebruto, Marta Joanna Drabik, Camilla Puccetti, Laura Caccico. "Psychometric Properties of the Italian Version of the Distress Tolerance Scale (DTS)", Journal of Psychopathology and Behavioral Assessment, 2021 Publication	<1 %
25	Submitted to ISN Psychology Pty Ltd Student Paper	<1 %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31 Christian Than, Laura Seidl, J. Mark Brown. "Lumbar erector spinae and sacral multifidus contractile properties in healthy females and males as determined by laser displacement mechanomyography", Biomedical Signal Processing and Control, 2019
Publication
<1%
32 Zhang, Hui, Zhenhong Wang, Xuqun You, Wei Lü, and Yun Luo. "Associations between narcissism and emotion regulation difficulties: Respiratory sinus arrhythmia reactivity as a moderator", Biological Psychology, 2015.
Publication
<1%
33 digitalcommons.montclair.edu
Internet Source
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34	Internet Source	<1 %
35	Felicitas Forrer, Marius Rubo, Andrea H. Meyer, Simone Munsch. "Binge-eating adolescent treatment (BEAT): Preliminary findings on efficacy and acceptance of a blended treatment program for youth with Loss of Control Eating: A within-subject waitlist control design.", Research Square Platform LLC, 2022 Publication	<1 %
36	Kristof Hoorelbeke, Ernst H. W. Koster, Ineke Demeyer, Tom Loeys, Marie-Anne Vanderhasselt. "Effects of cognitive control training on the dynamics of (mal)adaptive emotion regulation in daily life.", Emotion, 2016 Publication	<1 %
37	Marco Giancola, Massimiliano Palmiero, Simonetta D'Amico. "Divergent but not Convergent Thinking Mediates the Trait Emotional Intelligence-Real-World Creativity Link: An Empirical Study", Creativity Research Journal, 2022 Publication	<1 %
38	Submitted to University of Hong Kong Student Paper	<1 %

39	commons.erau.edu Internet Source	<1 %
40	core.ac.uk Internet Source	<1 %
41	digital.library.unt.edu Internet Source	<1 %
42	orca.cardiff.ac.uk Internet Source	<1 %
43	www.tandfonline.com Internet Source	<1 %
44	Lorra Garey, Jafar Bakhshaie, Carla Sharp, Clayton Neighbors, Michael J. Zvolensky, Adam Gonzalez. "Anxiety, depression, and HIV symptoms among persons living with HIV/AIDS: the role of hazardous drinking", AIDS Care, 2014 Publication	<1 %
45	Min - Pei Lin. "Avoidance/emotion - focused coping mediates the relationship between distress tolerance and problematic Internet use in a representative sample of adolescents in Taiwan: One - year follow - up", Journal of Adolescence, 2022 Publication	<1 %
46	theses.gla.ac.uk Internet Source	<1 %

Appendix P: IAD Consent Form

Universiti Tunku Abdul Rahman			
Form Title : **Sample of Submission Sheet for FYP/Dissertation/Thesis**			
Form Number : **FM-IAD-004**	Rev No: **0**	Effective Date: **21 June 2011**	Page No: **1 of 1**

FACULTY OF ARTS AND SOCIAL SCIENCE
UNIVERSITI TUNKU ABDUL RAHMAN

Date: 21st April 2023

SUBMISSION OF FINAL YEAR PROJECT

It is hereby certified that Ching Kai Xuan (ID No.: 19AAB03906) has completed this final year project titled " Emotion Regulation Among Undergraduates in Malaysia: Distress Tolerance, Mindfulness, and Positive Reappraisal " under the supervision of Mr. Ho Khee Hoong (Supervisor) from the Department of Psychology and counselling, Faculty of Arts and Social Science.

I understand that University will upload softcopy of my final year project in pdf format into UTAR Institutional Repository, which may be made accessible to UTAR community and public.

Yours truly,

_____
Name: Ching Kai Xuan

Appendix Q: Action Plan

Action Plan of UAPC3093 Project Paper II

Supervisee Ching Kai Xuan

Supervisor Mr. Ho Khee Hoong

Task Description	Date	Supervisee's Signature	Supervisor's Signature	Supervisor's Remarks	Next Appointment Date/Time
Methodology Submit Chapter 3: Methodology Amend Chapter 3: Methodology	3/4/2023		Daniel Ho	Make amendments according to the comments.	12/4/2023
Results & Findings Submit Chapter 4: Results Amend Chapter 4: Results	3/4/2023		Daniel Ho	Make amendments according to the comments.	12/4/2023
Discussion & Conclusion Submit Chapter 5: Discussion Amend Chapter 5: Discussion	12/4/2023		Daniel Ho	Make amendments according to the comments.	17/4/2023
Abstract	12/4/2023		Daniel Ho	Make amendments according to the comments.	17/4/2023

Turnitin Submission	17/4/2023		Daniel Ho	Generate similarity rate from Turnitin.com	21/4/2023
Amendment	3/4/2023		Daniel Ho	Make amendments according to the comments.	-
Submission of final draft	21/4/2023		Daniel Ho	Submission of hardcopy and documents	-
Oral Presentation	-				

Notes: **1. Deadline for submission cannot be changed, mark deduction is as per faculty standard.**

2. Supervisees are to take the active role to make appointments with their supervisors.

3. Both supervisors and supervisees should keep a copy of this action plan.

4. This Action Plan should be attached as an appendix in Project Paper 2.