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RELATIONSHIP BETWEEN DISPOSITIONAL MINDFULNESS AND LIFE SATISFACTION AMONG UNDERGRADUATE STUDENTS IN MALAYSIA: COGNITIVE REAPPRAISAL AS THE MEDIATOR

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Abstract

Undergraduate students are facing different challenges and stressors in their life, which may lower their life satisfaction. Dispositional mindfulness has been found to increase life satisfaction, and this relationship might include cognitive process namely cognitive reappraisal. Hence, grounded in Mindfulness-to-Meaning Theory, this study examined cognitive reappraisal as the mediator in the relationship between dispositional mindfulness and life satisfaction among 147 undergraduate students (aged 18-25 years old) who were studying in Malaysia. A non-experimental correlational design was used, where the students were required to fill in three questionnaires through Google Form survey, the results were analysed through hierarchical multiple regression. The results supported all four hypotheses, with significant positive relationships found among dispositional mindfulness, cognitive reappraisal and life satisfaction. Cognitive reappraisal partially mediated the relationship between dispositional mindfulness and life satisfaction. The findings provide valuable information for the experts to devise mindfulness interventions by incorporating cognitive reappraisal strategies, allowing students to use cognitive reappraisal to cope with challenges, improving life satisfaction.

Keywords: dispositional mindfulness, cognitive reappraisal, life satisfaction, undergraduate students

■1.0 INTRODUCTION

Every individual experiences transitions throughout different life stages, some of them can be hard to deal with emotionally. For young adults, transitions from high school to university has never been easy, as university admissions are competitive and stressful. It is challenging for them to adapt to life as an undergraduate while entering a new environment. For many students, transition to university means going into a larger impersonal school structure, facing more academic and achievement challenges, and interacting with peers from different ethnic groups and geographical backgrounds (Santrock, 2019). In addition, they have to face several adjustments, such as social, emotional, academic and personal adjustments (Cousins et al., 2016), which can sometimes become a problem for them. Empirical evidence showed that more college students have been experiencing different psychological problems, including crisis management and suicides, leading to low life satisfaction (Gallagher, 2012).

The study by Khramtsova and colleagues (2007) showed that life satisfaction predicts college students' positive attitude and behaviour in facing depression, whereby increased life satisfaction is related to decreased tendencies of developing depression. Specifically, life satisfaction is a global and subjective evaluation by an individual on their life as a whole (Diener & Diener, 1995; Pavot & Diener, 2008). Life satisfaction also plays a crucial role in different aspects of college students' life, where it is found to be positively related to students' meaningfulness in the experiences of learning (Fakunmoju et al., 2016), intrinsic motivation, self-discipline, happiness and respect for professors (Khramtsova et al., 2007). Life satisfaction also serves as a predictor in positive functions of university students in academic, health and social aspects (Renshaw & Cohen, 2013), increased engagement behaviour in schools, decreased withdrawal behaviour and aggression in schools (Elmore & Huebner, 2010). Antaramian (2017) suggested that undergraduates with very high life satisfaction showed better academic performance in terms of more significant approach-oriented achievement goals, higher self-efficacy, greater student engagement and lower academic stress than students with average and low life satisfaction. Thus, it is important to focus on improving the life satisfaction of undergraduates as it brings positive outcomes to their behaviour and different aspects of life.

To improve students' life satisfaction and well-being, dispositional mindfulness plays a role in this, as dispositional mindfulness has become a fundamental part of positive psychology and individual differences (Giluk, 2009). Dispositional mindfulness has gradually increased its popularity as this construct brings many benefits in health and well-being (Cheung & Ng, 2018; Christie et al., 2016). Besides, dispositional mindfulness can be cultivated, in which the improved dispositional mindfulness can lead to desirable changes in different life outcomes (Shapiro et al., 2006). Carmody and Baer (2008) showed that mindfulness meditation exercises significantly increase dispositional mindfulness, which in turn improve psychological well-being and reduce psychological symptoms and stress. In this way, dispositional mindfulness is well-known for its well-confirmed benefits for well-being, including life satisfaction.

■2.0 LITERATURE REVIEW

Dispositional Mindfulness and Life Satisfaction

Dispositional mindfulness has been conceptualised as an individual's tendency to pay attention and be aware of the present moment with purpose, accepting situations without judgement in everyday life (Brown & Ryan, 2003). Past studies have suggested dispositional mindfulness as the predictor of life satisfaction among adolescents (Tan et al., 2016; Wang & Kong, 2019), undergraduate students (Bajaj & Pande, 2015; Yuan et al., 2021) and adults (Kong et al., 2014; Wang & Kong, 2013). Empirical evidence has shown that dispositional mindfulness is correlated with increased life satisfaction in undergraduates (Brown et al., 2009; Howell et al., 2008). Dispositional mindfulness positively predicts university adjustment include academic, social, personal or emotional, and institutional attachment, even after controlling for self-efficacy and perceived social support (Mettler et al., 2017). Dispositional mindfulness is positively related to adaptive functioning and well-being, with better subjective well-being and ability to cope with changing life circumstances (Bergomi et al., 2013; Hanley et al., 2015), reduced emotional reactivity, stress and rumination (Feldman et al., 2016; Keng et al., 2016).

Study by Giannandrea (2018) suggested that mindfulness-based stress reduction (MBSR) training may increase self-reported dispositional mindfulness. Amundsen and colleagues (2020) found out that students showed increased life satisfaction after mindfulness training. Mindfulness interventions help to improve life satisfaction (Gupta & Verma, 2019; Harnett et al., 2010; Verma et al., 2018).

Dispositional Mindfulness and Cognitive Reappraisal

Cognitive reappraisal is an antecedent-focused emotion regulation strategy that includes reinterpreting the emotion-eliciting situation, which alters the meaning of emotional experiences (Gross & John, 2003; Ochsner & Gross, 2008). A positive relationship was found between dispositional mindfulness and adaptive emotion regulation approaches, including cognitive reappraisal (Iani et al., 2018; Lyvers et al., 2013). In the study by McDonald and associates (2016), undergraduate psychology students and community-based individuals were recruited in Australia, with most of them aged between 17 and 24 years old. This study showed that dispositional mindfulness negatively predicted difficulties in emotion regulation, suggesting that dispositional mindfulness is related to effective emotion regulation which includes cognitive reappraisal. Dispositional mindfulness facilitates the process of effective emotion regulation by enabling one to recognise negative internal experiences, and reappraise the experiences to be more meaningful.

Hanley and Garland (2014) suggested a positive relationship between dispositional mindfulness and self-reported positive reappraisal in five different samples, including college students, American adults, contemplative practitioners, chronic pain outpatients and alcohol-dependent inpatients. In these five samples which included a wide range of socio-demographic and clinical characteristics, the results consistently showed that those with higher dispositional mindfulness were more likely to use positive reappraisal as their cognitive coping style. This is because dispositional mindfulness allows one to enhance their working memory and develop cognitive flexibility, increasing the cognitive resources available for one to carry out the act of cognitive reappraisal (Garland et al., 2013).

Cognitive Reappraisal and Life Satisfaction

Studies have supported cognitive reappraisal as a predictor of life satisfaction (Haga et al., 2009; Ng et al., 2018; Toh & Yang, 2020). For example, in the study by Ng and colleagues (2018), 1216 young adolescents of different races from suburban schools in the southeastern United States were recruited, with results showing that those who adopt more cognitive reappraisal indicate a higher level of life satisfaction. Another study by Toh and Yang (2020) recruited 175 university students from Singapore, in which the cognitive reappraisal and life satisfaction of the students were examined using the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) and Satisfaction With Life Scale (SWLS; Diener et al., 1985). The results are consistent with each other, indicating that greater use of cognitive reappraisal predicts higher life satisfaction.

Cognitive reappraisal, which aimed to re-evaluate and develop a more objective, less reactive emotional reaction to one's experiences, was found to be positively related to more positive emotions, less negative emotions, better subjective well-being, contributing to increased life satisfaction (Balzarotti et al., 2014; Haga et al., 2009; Katana et al., 2019). An experimental study by McRae and associates (2012) measured cognitive reappraisal by having the participants re-evaluate the meaning of negative stimuli using different reappraisal tactics. Those who used cognitive reappraisal tactic to increase their positive emotions showed higher life satisfaction. From the past research mentioned by Bajaj and Pande (2015), Stolarksi and colleagues (2015), Ng and colleagues (2018), it is reasonable to suggest that dispositional mindfulness and cognitive reappraisal can predict life satisfaction.

Dispositional Mindfulness, Cognitive Reappraisal and Life Satisfaction

Emotion regulation has been suggested as the mechanism in explaining the relationship between dispositional mindfulness and well-being and subjective well-being (Cheung et al., 2020). Cognitive reappraisal is a component of emotion regulation, while

life satisfaction is a component of subjective well-being. Hence this study by Cheung and colleagues (2020) supports the present study, which examines dispositional mindfulness, cognitive reappraisal and life satisfaction.

Cheung and Ng (2020) conducted a one-year longitudinal study over Chinese university students aged 18 to 27. Results showed that dispositional mindful awareness positively predicted savouring life experiences, and cognitive reappraisal mediated this relationship. Another study by Cheung and Lau (2021) examined Chinese mindfulness practitioners in Hong Kong aged 20 to 72. Results showed that savouring positive experiences and gratitude mediated the relationship between dispositional mindfulness and life satisfaction in mindfulness practitioners after controlling for factors such as sex and age. Dispositional mindfulness positively predicts savouring positive experiences and gratitude feelings, meaning attending to positive life experiences and emotions and being thankful to them, positively predicts life satisfaction. This study supports the positive relationship between dispositional mindfulness and life satisfaction. Combining the results of the studies by Cheung and Ng (2020) and Cheung and Lau (2021), it is reasonable to suggest that dispositional mindfulness positively predicts cognitive reappraisal, later predicts increased life satisfaction. This relationship supports the assumptions that cognitive reappraisal mediates the relationship between dispositional mindfulness and life satisfaction. Besides, studies on clinical samples (Curtiss et al., 2017; Desrosiers et al., 2014) and non-clinical samples (Parmentier et al., 2019) suggested that cognitive reappraisal mediates dispositional mindfulness and depressive and anxiety symptoms, further supports the relationship.

Mindfulness-to-Meaning Theory

The relationship between dispositional mindfulness and life satisfaction through cognitive reappraisal can be explained by the Mindfulness-to-Meaning Theory (Garland et al., 2015). According to the Mindfulness-to-Meaning Theory by Garland and associates (2015), dispositional mindfulness allows one to decenter from stress reactivity and automatic appraisals that will perpetuate emotional distress to a metacognitive state of awareness and broadened attention (Burzler et al., 2019; Corcoran et al., 2009; Roemer et al., 2015). Decentering is the act of disengaging from the contents of emotions, cognitions, and sensations, taking a non-judgmental and present-focused stance regarding internal experiences and accepting them (Fresco et al., 2007). According to the theory, decentering can undo one's maladaptive cognitive schemas, disrupt one's working memory on stress appraisals, undo attentional biases on the contingent stimulus, and disrupt habitual behavioural repertoires (Garland et al., 2017). Through decentering, one disengages their attention from automatic appraisals and broaden to a metacognitive state of awareness by having separate awareness of two areas: the cognition of the attended object and the way the dynamic models of the attended object is perceived (Nelson et al., 1999). Throughout the process, the person will develop some degree of psychological distance from the elements of consciousness, which are emotions, thoughts and sensations (Bernstein et al., 2015; Grecucci et al. 2015; Roemer et al., 2015). As a result, their attention will be shifted toward self-reflection and metacognitive (Bernstein et al., 2015), experiencing the emotions nonjudgmentally to a certain extent (Roemer et al., 2015). This means that one is aware of the quality of their own awareness.

Therefore, one will broaden their awareness on their interoceptive and exteroceptive information when they decenter to a metacognitive state, as theorised in the Mindfulness-to-Meaning Theory. Interoception refers to one's perceptions of their internal state, while exteroception refers to the perceptions of the external environment (Salvato et al., 2019). Hence, when one decenters into the state of metacognition, they will increase access to the perceptions of their internal and external state, accessing contextual information that was unable to be noticed previously due to a narrow attentional view induced by emotional distress (Garland et al., 2017). This is when cognitive reappraisal comes in, as the broadened awareness allows the appraisals to be reconfigured by integrating positive contextual information that was previously restrained into the emotional experiences that were initially perceived as negative (Garland et al., 2015). As a result of reappraising the neutral and negative experiences, the interoceptive and exteroceptive information have now become more balanced, in which the broadened awareness of both interoception and exteroception are instrumental in positive reappraisal (Garland et al., 2015; Lazarus & Folkman, 1984). The apperception of negative emotional experiences are then reconstrued to be meaningful. Past studies support this explanation by suggesting emotional awareness is related to interoceptive awareness (awareness of bodily signals) and increased interoceptive awareness can enhance the use of reappraisal (Kever et al., 2015), including downregulation of negative emotions (Füstös et al., 2013). The explanation is also in line with the findings of several studies, including mindfulness training, where mindfulness training could improve dispositional mindfulness, subsequently enhancing working memory and reduce distraction of thoughts and attention, increasing cognitive resources' capacity while using cognitive reappraisal (Giannandrea, 2018; Jha et al., 2010; Mrazek et al., 2013).

Through decentering, one will develop cognitive flexibility, adopting cognitive reappraisal through better-informed decisions (Garland et al., 2013). After the emotion is experienced fully, cognitive reappraisal allows one to reinterpret, thereby encouraging a more holistic evaluation of the situation, altering one's emotion response tendencies (Gross & John, 2003). One will recognise thoughts that bring negative emotions, reframing the thoughts to be more positive (McRae et al., 2012; Troy et al., 2018). Hence, one will be more likely to notice positive aspects of emotional experiences by cognitively reframing life circumstances as meaningful through cognitive reappraisals, perceiving the emotional experiences as goal progress and more positive (Farb et al., 2014; MacDonald & Baxter, 2016). When one pays more attention to positive information, they tend to reconstrue the life obstacles as a source to learn and grow into a well-rounded person (Chan et al., 2011). For example, one will view obstacles as positive learning opportunities instead of threats, hence evaluating their life to be more meaningful, increasing life satisfaction.

Evidence has shown that cognitive reappraisal can bring beneficial short term and long term effects. For example, in laboratory settings, cognitive reappraisal enhances positive emotions and decrease negative emotions, suggesting its important short-term effects on positive and negative emotional experiences (Shiota & Levenson, 2012; Troy et al., 2018; Webb et al., 2012). Furthermore, cognitive reappraisal is positively related to psychological health under longitudinal (Kraaij et al., 2002) and cross-sectional studies (Garnefski & Kraaij, 2006), suggesting it is beneficial for psychological health in the long run. Accordingly, cognitive reappraisal has been identified as a cognitive self-regulatory mechanism that can reduce negative emotions and increase positive emotions, both short-term and long-term, introducing greater cognitive flexibility in constructing meaning from experiences (Dorjee, 2016; McRae et al., 2012).

Past studies suggested some mediators involving cognitive aspects which explain the relationship between dispositional mindfulness and life satisfaction, such as core self-evaluations (Kong et al., 2014) and emotional intelligence (Wang & Kong, 2013). However, there might be other mechanisms involving cognitive processes responsible for the relationship between dispositional mindfulness and life satisfaction, whereby emotion regulation was suggested to be studied in the future (Christie et al., 2016), this can help to understand the process to improve students' life satisfaction. Cognitive reappraisal has been shown to bring many positive outcomes, including more positive emotions experienced, less negative emotions experienced, better interpersonal functioning, better well-being such as greater life satisfaction and optimism (Butler et al., 2003; Haga et al., 2009; Ng et al., 2018). Therefore, the current study attempts to fill the gap by introducing cognitive reappraisal as the possible mediator between dispositional mindfulness and life satisfaction. It is crucial to study and understand the process explaining the relationship between dispositional mindfulness and life satisfaction, which can later contribute to the field.

There were past studies examining the relationship between dispositional mindfulness and life satisfaction by using different mediators, and different populations were studied, such as adolescents (Tan et al., 2016; Wang & Kong, 2019), adults (Kong et al., 2014; Wang & Kong, 2013) and college students (Bajaj & Pande, 2015; Yuan et al., 2021). From the researcher's knowledge, no study examines cognitive reappraisal as the mediator in the relationship between dispositional mindfulness and life satisfaction on the undergraduate students, thus creating a gap in the literature. Undergraduate students are targeted because at this life stage, they have to face different challenges and adjustments upon entering a university (Cousins et al., 2016). Furthermore, major depressive episodes were most prevalent from 18 to 25 years old (Bose et al., 2018), overlapping with the age of undergraduate students. Hence, this study could help them to better understanding themselves with their emotions and learn to regulate them by adopting different practices. Besides, undergraduates are recruited in this study as their prefrontal cortex are still developing, as the maturation of the prefrontal cortex mainly starts to occur during adolescence stage, and only fully developed at the age of 25 years old (Casey et al., 2008). The prefrontal cortex plays a role in cognitive reappraisal as a complex cognitive behavioral performance, allowing the individuals to make good decisions and judgements when facing difficult life situations (Arain et al., 2013; Funahashi, 2017). Compared to adults, when undergraduates engage in dispositional mindfulness, their prefrontal cortex are not mature enough to fully re-interpret the negative events, affecting them to perform well. Thus, it is important to study how the dispositional mindfulness allows undergraduate students with premature prefrontal cortex to use cognitive reappraisal in overcoming their life challenges and find meaning in life.

The current study aims to study the role of cognitive reappraisal in mediating the relationship between dispositional mindfulness and life satisfaction. The research question is "Does cognitive reappraisal mediate the relationship between dispositional mindfulness and life satisfaction?". There are four hypotheses in this study: (a) dispositional mindfulness will significantly predict life satisfaction, (b) dispositional mindfulness will significantly predict cognitive reappraisal, (c) cognitive reappraisal will significantly predict life satisfaction, and (d) cognitive reappraisal will mediate the relationship between dispositional mindfulness and life satisfaction. The hypotheses are constructed as cognitive reappraisal is proposed to explain the relationship between dispositional mindfulness and life satisfaction.

For theoretical implications, the current study may contribute to the mindfulness literature in understanding the relationship between dispositional mindfulness and life satisfaction by taking cognitive reappraisal as the possible explanatory mechanism. The current study may add knowledge to the relationship between dispositional mindfulness and life satisfaction, taking the core idea from the Mindfulness-to-Meaning Theory.

The present study proposes cognitive reappraisal as a possible mechanism explaining the relationship between dispositional mindfulness and life satisfaction. Hence for practical implications, this study can contribute to improving life satisfaction in college students by providing valuable information for the trainers in incorporating cognitive reappraisal strategies in the mindfulness training. As there are individual differences in dispositional mindfulness, so it can be cultivated via mindfulness interventions and training. More mindfulness interventions can be devised and developed based on the study results to specifically fit undergraduate students. Throughout the interventions, the students will learn how to reframe life circumstances to be more meaningful by re-evaluating their emotional experiences to be more positive.

Psychoeducation can be carried out to educate undergraduates to cope with their problems, such as adjustment issues, depressive episodes and less satisfying life, by learning skills on how to decenter from stress reactivity to a metacognitive state of awareness, re-interpreting their current situation to be more positive, improving their life satisfaction.

3.0 METHODOLOGY

Design

The present study used a non-experimental correlational design with one predictor, one mediator and one outcome by employing an online survey. The predictor was dispositional mindfulness, the mediator was cognitive reappraisal, and the outcome was life satisfaction.

Participants

A sample size of 68 was suggested using the G*Power 3.1 software with .15 effect size, .05 probability of alpha error, and .95 power value (Faul et al., 2009) (see Appendix B). This sample size was used as a moderate anticipated effect size, in reference to the study by Weintraub (2018) who examined the mindfulness topic. However, 171 participants were recruited, and a final of 147 participants (108 female, 38 male, 1 preferred not to say) were included as the other 24 participants did not meet the participation criteria in terms of age and occupation. They were aged from 18 to 25 years old (M = 21.37, SD = 1.59). 137 participants (93.2%) were Chinese, 8 (5.4%) were Indians, and 2 (1.4%) were Malays (see Appendix C). Following were the criteria to be a participant: an undergraduate student studying in Malaysia, aged from 18 to 25.

The participants participated in the study on a volunteering basis. They were recruited online via snowball sampling through word of mouth. This sampling method was used as it could be hard for the researcher to reach out to so many potential

participants, so those participants who participated in the study could help to share the participation criteria and Google Forms link online to refer the researcher to other potential participants. This sampling method was also cost-saving and effective. Responses were collected via the creation of Google Forms (see Appendix A) using the researcher's account. A Google Forms survey link was provided to the participants, and consent was given to the participants prior to the study via the researcher's WhatsApp and Instagram account.

Materials

Three scales were used to measure the studied variables, and the scales were compiled together in one Google Forms survey (see Appendix A).

Mindful Attention Awareness Scale (MAAS)

Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) (see Appendix A) was used to measure the core characteristic of dispositional mindfulness, consisting of 15 items about one's everyday experience, phrased as brief statements. Some examples of the items were, "I could be experiencing some emotion and not be conscious of it until some time later", and "I forget a person's name almost as soon as I've been told it for the first time". The participants were required to rate on a 6-point Likert scale on how frequently or infrequently they had the experience shown in each statement, with 1 being "Almost Always" and 6 being "Almost Never". The score was calculated by taking the average score across the 15 items, whereas a higher average score indicated higher dispositional mindfulness (Brown & Ryan, 2003). This scale has demonstrated good internal reliability, with Cronbach's alpha value of .82 (Brown & Ryan, 2003).

Cognitive Reappraisal Subscale From the Emotion Regulation Questionnaire (ERQ)

Cognitive reappraisal subscale from the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) (see Appendix A) was used to measure cognitive reappraisal. The subscale consisted of six items, which were items 1, 3, 5, 7, 8 and 10 in the ERQ, measuring participants' tendency to use cognitive reappraisal to regulate their emotions. Examples of the items included, "When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about", and "When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm". It was rated on a 7-point Likert scale, with 1 being "Strongly Disagree" and 7 being "Strongly Agree". The score was calculated by taking the average score across the six items, with a higher average score indicating higher use of cognitive reappraisal (Gross & John, 2003). The cognitive reappraisal subscale has shown high internal consistency reliability, with Cronbach's alpha coefficient of .89 to .90 (Preece et al., 2019).

Satisfaction with Life Scale (SWLS)

Satisfaction with Life Scale (SWLS; Diener et al., 1985) (see Appendix A) was used to measure the global and subjective judgements of the participants' life satisfaction as a whole, consisting of five items, phrased as brief statements. Some examples were, "In most ways my life is close to my ideal", and "I am satisfied with my life". Participants rated on a 7-point Likert scale, with 1 being "Strongly Disagree", and 7 being "Strongly Agree". The score was calculated by summing up all the scores across five items from the SWLS, meaning the total score, whereas a higher total score indicated higher life satisfaction (Diener et al., 1985). This scale has shown high internal consistency with Cronbach's alpha value of .87 value and high test-retest reliability with Cronbach's alpha value of .82 (Diener et al., 1985).

Procedures

Data was collected via the creation of Google Forms survey (see Appendix A), by using the researcher's account after the ethics application was approved. A Google Forms link was provided to the participants who met the participation criteria. After accessing the link, the participants were directed to the survey page. There were written instructions guiding them on how to complete the questionnaires. The participants were required to complete all three questionnaires: the Mindful Attention Awareness Scale (MAAS), the Cognitive Reappraisal Subscale From the Emotion Regulation Questionnaire (ERQ) and the Satisfaction with Life Scale (SWLS). The study took no longer than 10 minutes to complete. The participants' scores were then calculated, and data were analysed through hierarchical multiple regression using the PROCESS SPSS macro (Hayes, 2013).

■4.0 RESULTS

This study aimed to examine the mediator role of cognitive reappraisal in the relationship between dispositional mindfulness and life satisfaction among undergraduate students in Malaysia. As all three variables are continuous variables, hierarchical multiple regression was used to analyse the data to test the mediator role of cognitive reappraisal in the relationship between dispositional mindfulness and life satisfaction.

Assumption Tests

Some assumptions were reviewed before the mediation analysis. The assumption of linearity was met because the normal probability plot of standardised residuals (see Appendix D) did not show a curvilinear pattern, but instead, a linear trend. SPSS output table on the test of normality on standardised residuals (see Appendix E) showed that the assumption of normally distributed residuals was met ($W(147)=1.00$, $p=.910$), and the histogram (see Appendix F) showed normal distribution as well. The assumption of independence of errors was met with value 1.99 using the Durbin-Watson test, where this value was in the acceptable range of 1 to 3 (see Appendix G).

The assumption of no multicollinearity was met for both dispositional mindfulness (tolerance = .94, VIF = 1.07) and cognitive reappraisal (tolerance = .94, VIF = 1.07)(see Appendix H), as the tolerance values were more than .2 and the variance inflation factors (VIF) values were less than 10. The assumption of homoscedasticity was met as the scatterplot's data points (see Appendix I) showed a uniform spread, with no funnelling in the scatterplot of standardised residuals for the entire model.

Descriptive Analysis

Table 1: *Mean Scores and Pearson Correlations for Dispositional Mindfulness, Cognitive Reappraisal, and Life Satisfaction*

Variables	DM	CR	LS	*M*	*SD*
Dispositional Mindfulness	1.00			3.82	0.82
Cognitive Reappraisal	.25**	1.00		5.23	1.20
Life Satisfaction	.26**	.41***	1.00	21.37	6.28

Note. DM = dispositional mindfulness. CR = cognitive reappraisal. LS = life satisfaction.
** $p < .01$, *** $p < .001$

Table 1 showed the mean scores, standard deviation scores (see Appendix J) and correlational scores for dispositional mindfulness, cognitive reappraisal and life satisfaction (see Appendix K). Dispositional mindfulness was significantly positively correlated with life satisfaction ($r(145) = .26$, $p = .001$), indicating that participants who scored higher in dispositional mindfulness were more likely to have higher life satisfaction. Dispositional mindfulness was significantly positively correlated with cognitive reappraisal ($r(145) = .25$, $p = .001$), suggesting that those who demonstrated higher dispositional mindfulness used more cognitive reappraisal strategies in their life . Furthermore, cognitive reappraisal was significantly positively correlated with life satisfaction ($r(145) = .41$, $p < .001$), which means those who had higher usage of cognitive reappraisal were more likely to live a satisfying life.

Mediation Analysis

For mediation analysis, the data was analysed through hierarchical multiple regression using PROCESS SPSS macro (Hayes, 2013) to examine the mediator role of cognitive reappraisal in the relationship between dispositional mindfulness and life satisfaction. Table 2, 3 ,4 and 5 showed the results of mediation analysis (see Appendix L), while Figure 1 showed the conceptual diagram for the indirect effect of dispositional mindfulness on life satisfaction via cognitive reappraisal.

Table 2 *Direct Effect of Dispositional Mindfulness (X) on Life Satisfaction (Y), Controlling for Cognitive Reappraisal (M) Direct Effect of for Cognitive Reappraisal (M) on Life Satisfaction (Y), Controlling for Dispositional Mindfulness (X)*

Model Summary		*R*	R^2	*F*	*df1*	*df2*	*p*
Outcome (Y): Life Satisfaction		.44	.19	17.19	2	144	< .001
Model	***Path***	***B***	***SE***	***t***	***p***	***95%CI***	
Mediator (M): Cognitive Reappraisal	b	1.90	0.41	4.68	.000***	[1.10, 2.69]	
Predictor (X): Dispositional Mindfulness	c'	1.33	0.59	2.25	.026**	[0.16, 2.50]	

Note. N = 147. *CI* = confidence interval.
** $p < .01$, *** $p < .001$

Table 3 *Direct Effect of Dispositional Mindfulness (X) on Cognitive Reappraisal (M)*

Model Summary		*R*	R^2	*F*	*df1*	*df2*	*p*
Mediator (M): Cognitive Reappraisal		.25	.06	9.60	1	145	.002
Model	***Path***	***B***	***SE***	***t***	***p***	***95%CI***	
Predictor (X): Dispositional Mindfulness	a	0.36	0.12	3.10	.002**	[0.13, 0.60]	

Note. N = 147. *CI* = confidence interval.
** $p < .01$, *** $p < .001$

Based on Table 2 and Figure 1, in path c', dispositional mindfulness significantly predicted life satisfaction when controlling for cognitive reappraisal, $b_{c'} = 1.33$, 95% CI [0.16, 2.50], $t(144) = 2.25$, $p = .026$, supporting hypothesis (a) that dispositional mindfulness would significantly predict life satisfaction.

As shown in Table 3, the model of dispositional mindfulness significantly predicted cognitive reappraisal, $F(1,145) = 9.60$, $p = .002$, $R^2 = .06$, explaining 6.2% of the variance in cognitive reappraisal. Referring to Table 2 and Figure 1, in path a, dispositional mindfulness significantly predicted cognitive reappraisal, $b_a = 0.36$, 95% CI [0.13, 0.60], $t(145) = 3.10$, $p = .002$. Therefore, hypothesis (b) that dispositional mindfulness would significantly predict cognitive reappraisal was supported.

Referring to Table 2, the overall model of dispositional mindfulness and cognitive reappraisal significantly predicted life satisfaction, $F(2, 144) = 17.19$, $p < .001$, $R^2 = .19$, explaining 19.3% of the variance in life satisfaction. In path b, cognitive reappraisal significantly predicted life satisfaction when controlling for dispositional mindfulness, $b_b = 1.90$, 95% CI [1.10, 2.69], $t(144) = 4.68$, $p < .001$. This supported hypothesis (c) that cognitive reappraisal would significantly predict life satisfaction.

Table 4 *Total Effect Model of Dispositional Mindfulness (X) on Life Satisfaction (Y)*

Model Summary	*R*	R^2	*F*	*df1*	*df2*	*p*
Outcome (Y): Life Satisfaction	.26	.07	10.89	1	145	.001
Model	***Path***	***B***	***SE***	***t***	***p***	***95%CI***
Predictor (X): Dispositional Mindfulness	c	2.02	0.61	3.30	.001**	[0.81, 3.23]

Note. N = 147. *CI* = confidence interval.
** $p < .01$, *** $p < .001$

For the total effect model, based on Table 4, dispositional mindfulness as a model significantly predicted life satisfaction, $F(1, 145) = 10.89$, $p = .001$, R^2=.07, explaining 7.0% of the variance in life satisfaction. In path c, dispositional mindfulness significantly predicted life satisfaction, b_c= 2.02, 95% CI [0.81, 3.23], $t(145) = 3.30$, $p = .001$.

Table 5 *Indirect Effect of Dispositional Mindfulness (X) on Life Satisfaction (Y) via Cognitive Reappraisal (M)*

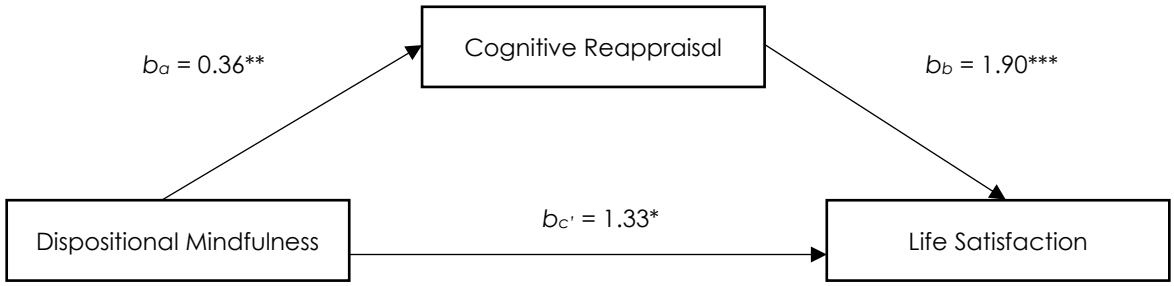
Indirect Effect of X on Y	*Path*	*B*	*BCa CI*
Mediator (M): Cognitive Reappraisal	ab	0.69	[0.25, 1.22]

Note. N = 147. *BCa CI* = bias corrected and accelerated confidence interval.

The indirect effect of dispositional mindfulness on life satisfaction through cognitive reappraisal was significant (b_{ab}= 0.69), as the bias-corrected bootstrapped confidence interval on 5000 bootstrap samples did not contain zero, BCa CI [0.25, 1.22], as shown in Table 5.

In summary, a higher level of dispositional mindfulness predicted more use of cognitive reappraisal (b_a=0.36), which subsequently predicted higher life satisfaction (b_b= 1.90). A bias-corrected bootstrap confidence interval for the indirect effect (b_{ab}= 0.69) based on 5000 bootstrap samples did not contain zero, BCa CI [0.25, 1.22], hence the indirect effect of dispositional mindfulness on life satisfaction through cognitive reappraisal was significant, indicating that mediation likely occurred. As dispositional mindfulness was still a significant predictor of life satisfaction while controlling for cognitive reappraisal ($b_{c'}$ = 1.33, p = .026), indicating that cognitive reappraisal partially mediated the relationship between dispositional mindfulness and life satisfaction. As a measure of the effect size for the mediation model, the completely standardised indirect effect was reported, whereby ab_{cs}=0.09. Therefore, hypothesis (d) that cognitive reappraisal mediated the relationship between dispositional mindfulness and life satisfaction was supported. The indirect effect of dispositional mindfulness on life satisfaction via cognitive reappraisal was summarised in the conceptual diagram below.

Figure 1 *Conceptual Diagram for the Indirect Effect of Dispositional Mindfulness on Life Satisfaction via Cognitive Reappraisal*



* $p < .05$, ** $p < .01$, *** $p < .001$

■5.0 DISCUSSION AND RECOMMENDATION

The present study examined cognitive reappraisal as the mediator in the relationship between dispositional mindfulness and life satisfaction among undergraduates. Results showed that a higher level of dispositional mindfulness predicted more cognitive reappraisal use, then predicted higher life satisfaction. Cognitive reappraisal partially mediated the relationship between dispositional mindfulness and life satisfaction. Dispositional mindfulness significantly predicted life satisfaction when controlling for cognitive reappraisal, supporting hypothesis (a) that dispositional mindfulness would significantly predict life satisfaction. It is consistent with past studies that reported a predictive relationship between dispositional mindfulness and life satisfaction among adolescents (Tan et al., 2016; Wang & Kong, 2019), undergraduate students (Bajaj & Pande, 2015; Yuan et al., 2021) and adults (Kong et al., 2014; Wang & Kong, 2013). The current findings are also consistent with past studies which suggested a positive relationship between dispositional mindfulness and life satisfaction in undergraduates (Brown et al., 2009; Howell et al., 2008). One possible interpretation is that dispositional mindfulness allows undergraduate students to be aware of the present moment without judgement, noticing more positive aspects in their life, hence evaluating life as more satisfying.

Next, the results showed that dispositional mindfulness significantly predicted cognitive reappraisal, supporting hypothesis (b) that dispositional mindfulness would significantly predict cognitive reappraisal. These findings are align with previous literature, which suggested a positive relationship between dispositional mindfulness and adaptive emotion regulation approaches, including cognitive reappraisal (Iani et al., 2018; Lyvers et al., 2013). Furthermore, the present findings are consistent with past research studied in different cultural contexts, such as Australia (McDonald et al., 2016) and America (Hanley & Garland, 2014). In the study by McDonald and associates (2016), some characteristics of the participants are almost similar to the present study, which are undergraduates and aged between 17 and 24, suggesting a positive relationship between dispositional mindfulness and effective emotion regulation. While in the study of Hanley and Garland (2014), dispositional mindfulness is positively associated with self-reported positive reappraisal in five different samples, including college students (Hanley and Garland, 2014). Although the present study examined in Malaysia context, the results are consistent with these two studies under different contexts, suggesting that the relationship between dispositional mindfulness and cognitive reappraisal is consistent across undergraduates from different cultures, in which cultural differences may not be the factor in affecting the results.

As dispositional mindfulness was found to be a significant predictor of cognitive reappraisal, this supports the Mindfulness-to-Meaning Theory, in line with the explanation of this link by using decentering, the mechanism of dispositional mindfulness (Bernstein et al., 2015). Through decentering, the undergraduates can master their thoughts, feelings and emotions, and see them as temporary mental events instead of identifying with them (Gecht et al., 2014; Safran & Segal, 1996). This process allows them to respond to the dynamic models of a stimulus and the meta-level of awareness of the cognition of the stimulus with a wider range and higher adaptability, understanding and reacting to the surrounded cues and responses more consciously (Brown et al., 2007; Chambers et al., 2009). With the presence of cognitive flexibility in processing a larger array of information, the students will then reconstruct the negative events to become meaningful and growth-promoting through cognitive reappraisal (Lazarus & Folkman, 1984; Troy et al., 2018). In support of the explanation, empirical evidence showed that decentering allows one to disengage from personally construed reality, hence decreasing negative emotions immersion, increasing cognitive flexibility and problem-solving (Lebois et al., 2015; Tapper & Ahmed, 2018).

The current study showed that cognitive reappraisal significantly predicted life satisfaction when controlling for dispositional mindfulness, supporting hypothesis (c) that cognitive reappraisal would significantly predict life satisfaction. These findings echo with previous studies that reported cognitive reappraisal as the predictor of life satisfaction under different life stages (Haga et al., 2009; Ng et al., 2018; Toh & Yang, 2020). Furthermore, the present findings are consistent with an experimental study that showed the use of cognitive reappraisal in increasing positive emotions while evaluating negative stimuli leads to higher life satisfaction (McRae et al., 2012). Based on the findings, when one fully experiences their emotion, cognitive reappraisal allows one to recognise thoughts that bring negative emotions and reinterpret their emotional experiences more holistically. They will cognitively reframe the experiences to be more meaningful by recognising more positive emotions and perceiving them as goal progress, hence helping to increase satisfaction in their life.

The mediation analysis results showed a significant indirect effect of dispositional mindfulness on life satisfaction through cognitive reappraisal, whereby cognitive reappraisal partially mediated the relationship between dispositional mindfulness and life satisfaction. This supports hypothesis (d) that cognitive reappraisal would mediate the relationship between dispositional mindfulness and life satisfaction. Past literature supports the findings by suggesting emotion regulation

mediated the relationship between dispositional mindfulness and well-being, including subjective well-being (Cheung et al., 2020) and psychological well-being (MacDonald & Baxter, 2016).

In two studies of core self-evaluations as the mediator in the relationship between dispositional mindfulness and life satisfaction, Tan and colleagues (2016) recruited adolescents aged from 15 to 17 years, while Kong and colleagues (2014) recruited adults aged from 18 to 50 years. Results showed that core self-evaluations partially mediated the relationship between dispositional mindfulness and life satisfaction in adolescents (Tan et al., 2016), but fully mediated the relationship in adults (Kong et al., 2014). This suggests that while being aware of the present moment, adolescents may not be able to fully participate in core self-evaluations as compared to adults, this may due to premature prefrontal cortex which is responsible in executive functions (Funahashi, 2017). These findings and interpretations support the current study which showed partial mediation, as undergraduates may not be mature enough in reinterpreting the negative emotional experiences while paying attention and being non-judgmental towards the present moment. The findings support that undergraduates population should be studied as they have their unique developmental stage, especially their cognitive development is at different stage compared to other age group. They are also facing different challenges as an undergraduate, hence the study results showed that being aware of the present moment somehow allows the undergraduate to reinterpreting the current emotional experiences and achieve higher life satisfaction.

Based on the current findings, cognitive reappraisal only partially mediated the relationship between dispositional mindfulness and life satisfaction, as path c' was still significant with the inclusion of the mediator, meaning cognitive reappraisal only accounts for some, not fully explaining the relationship between dispositional mindfulness and life satisfaction. In other words, dispositional mindfulness has both direct and indirect effect on life satisfaction. However, the model including cognitive reappraisal increased the variance in explaining life satisfaction, showing cognitive reappraisal does play a role in the relationship. Furthermore, the partial mediation suggests that there might be other variables in explaining this link. In this case, emotion suppression is suggested to affect the relationships among dispositional mindfulness, cognitive reappraisal and life satisfaction. This is because the current study examines the Malaysian context which adopts collectivistic culture, in which individuals from this culture tend to suppress emotions in their daily life, as compared to those from individualistic cultures (Huwaë & Schaafsma, 2016; Markus & Kitayama, 1991). Those from collectivistic culture emphasise harmonious interpersonal relationships and take care of others' thoughts and emotions (Triandis et al., 1988), so in this study, when the undergraduates pay attention to the current moment, they may tend to suppress positive or/and negative emotions to avoid hurting anyone, preserving the harmonious relationships (Chiang, 2012), which may then leading to lower life satisfaction. This is because being open and expressive to one's emotions can affirm one's self-worth in searching for life meaning (Markus & Kitayama, 1991), so when one keeps suppress their emotions, their self-worth will be decreased, hence decreasing life satisfaction in both collectivistic and individualistic cultures (Kwon & Kim, 2018). Thus, when being aware of the present emotional experiences, emotion suppression may be the variable in affecting cognitive reappraisal by suppressing the true emotions, affecting the integration of the positive contextual information into the negative emotional experiences, later influencing the meaning searching process and one's evaluation towards life. Therefore, the partial mediation found in current study may be due to emotion suppression from a cultural point of view.

The current study expands the understanding of the explanatory mechanism between dispositional mindfulness and life satisfaction by focusing on the cognitive part, suggesting some cognitive processes can explain the relationship. Specifically, grounded in Mindfulness-to-Meaning Theory, the present study has proposed cognitive reappraisal, an emotion regulation strategy, as the explanatory mechanism involving cognitive processes. The present findings provide insights into the mediator role of cognitive reappraisal in explaining the relationship between dispositional mindfulness and life satisfaction among undergraduate students in the Malaysia context. The current study also adds knowledge to the relationship between dispositional mindfulness and life satisfaction by taking the core idea from the Mindfulness-to-Meaning Theory, suggesting that dispositional mindfulness allows one to decenter and broaden metacognitive awareness, adopting cognitive flexibility in reframing thoughts to be positive using cognitive reappraisal, then find meaning in life. Future research can extend the current study's findings by examining how cognitive reappraisal and emotion suppression interplay in explaining relationship between dispositional mindfulness and life satisfaction. At the same time, the level of emotion suppression among different cultures can also be compared to get a clearer idea on how emotion suppression plays a role in this relationship.

For practical implications, the present study can contribute to the positive life outcomes of the undergraduate students by providing valuable information for the trainers in incorporating cognitive reappraisal strategies in the mindfulness training to improve students' life satisfaction. Furthermore, psychologists, practitioners, experts and trainers in the mindfulness field can devise and develop mindfulness interventions that specifically fit with undergraduate students in Malaysia.

Cognitive reappraisal strategies should be emphasised in the mindfulness interventions as well. This is because dispositional mindfulness can be cultivated through mindfulness interventions (Giannandrea, 2018). New mindfulness interventions can be devised or improvised to fit students by taking the existing mindfulness interventions and therapies, such as Mindfulness-Based Cognitive Therapy (MBCT) and Mindfulness-Based Stress Reduction Techniques (MBSR). For example, MBCT allows one to recognise their negative automatic thoughts and later replace those thoughts, which brings stress to positive thoughts through self-enhance thinking (Segal et al., 2002). The concept is very similar to the current findings, so the experts in this field can examine and make adjustments and improvements from existing therapies, training and interventions. Through mindfulness-based training, the students will learn to be mindful, increase their metacognitive awareness of their emotional experiences, attend and accept their emotions nonjudgmentally.

Psychoeducation can be carried out to educate students in recognising and dealing with their problems through interventions and exercises. Mindfulness therapies, exercises and cognitive reappraisal strategies can be taught so that students can learn to be mindful in dealing with their emotions appropriately using cognitive reappraisal. Students can share their problems and express their thoughts freely throughout the process. Mindfulness therapy such as Mindfulness-Based Cognitive Therapy (MBCT; Segal et al., 2002; Shapiro et al., 2006) and other therapies can be used to improve students' dispositional mindfulness and the use of cognitive reappraisal, allowing them to deal things in a positive way. Psychoeducation which encompasses mindfulness-based interventions and cognitive reappraisal strategies can help to educate the students on ways to

deal with adversities, reduce psychological problems and negative thoughts, and find meanings in life, which later improves their well-being in life. Besides, psychologists, counsellors or experts in the field can organise some seminars or workshops in the university to raise students' awareness on the importance of dispositional mindfulness, cognitive reappraisal and life satisfaction, and also demonstrate and teach them some mindfulness exercises that can be practised on their own to cultivate their dispositional mindfulness, allowing them to use cognitive reappraisal more frequently in their daily life.

This study has some limitations. First, the data was obtained through self-report, which may be subjected to social desirability. The participants may provide socially acceptable responses rather than being truthful in answering the questionnaires. To improve, mix method can be used by combining the self-report method with multi-source data, such as data from questionnaire and Ecological Momentary Assessment, to look into the consistency of results obtained from both methods. Qualitative method such as interviews can be carried out on the participants, such as asking about how they use dispositional mindfulness in life, how they perceive their emotional experiences, description on the use of cognitive reappraisal and overall evaluation on their life. Through interviews, more rich and in-depth data can be gained to understand the relationship between the variables, and address the biases due to self-report.

Another limitation of this study is that a cross-sectional design was used, in which the students are studied at only one specific point, and this design does not provide inference and evidence on the causal relationship between the variables. It limits the researcher to analyse and interpret the cause and effect of the model. To improve, experimental research design can be carried out to identify the cause and effect among the variables, in which confounding variables are controlled and the procedure is standardised. Longitudinal research design can be utilised to obtain more thorough information on the relationships among the variables, and understand better on the explanation and possible changes on the variables' relationships through observing over a long period of time.

Future studies can examine the mediator role of cognitive reappraisal in the relationship between dispositional mindfulness and life satisfaction on clinical populations. For example, chronic pain outpatients can be studied, which are supported by the study of Hanley and Garland (2014) which suggested a positive relationship between dispositional mindfulness and self-reported positive reappraisal in chronic pain outpatients.

Considering the partial mediation effect found in current study, a possible variable in affecting cognitive reappraisal in explaining the relationship between dispositional mindfulness and life satisfaction can be emotion suppression. Thus, future research can extend the current study by looking into how cognitive reappraisal and emotion suppression interact within the context of dispositional mindfulness and life satisfaction relationship.

■6.0 CONCLUSION

This study examined the mediator role of cognitive reappraisal in the relationship between dispositional mindfulness and life satisfaction. Findings showed that a higher level of dispositional mindfulness predicted more use of cognitive reappraisal, which subsequently predicted higher life satisfaction. Besides, cognitive reappraisal partially mediated the relationship between dispositional mindfulness and life satisfaction. The findings expand the understanding of the explanatory mechanism in the relationship between dispositional mindfulness and life satisfaction, providing theoretical insights into the relationship. In addition, the findings provide valuable information for the psychologists in the field to devise mindfulness interventions that specifically fit in with undergraduate students by incorporating cognitive reappraisal strategies.

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Appendix A
Screenshot of Google Forms Content

Relationship Between Dispositional Mindfulness and Life Satisfaction Among Undergraduate Students in Malaysia: Cognitive Reappraisal as the Mediator

Description of this study:
This study aims to examine the mediator role of cognitive reappraisal in the relationship between dispositional mindfulness and life satisfaction. To be able to participate in this study, you must be an undergraduate student who is studying in Malaysia, aged from 18 to 25.

What will be done:
Should you agree to participate in this study, you will be required to fill in the demographic form, the Mindfulness Attention Awareness Scale (MAAS) with 15 items, the Cognitive Reappraisal subscale from Emotion Regulation Questionnaire (ERQ) with six items, and the Satisfaction with Life Scale (SWLS) with five items. The study will not take more than 10 minutes to complete.

Risks or discomfort:
No risk or discomfort will be anticipated in this study. You may decide to withdraw from the study with no consequences. You are allowed to terminate your participation if you experience any discomfort throughout the study. You can also contact the Centre for Psychological and Counselling Services (CPCS) at 03-7849 3200, Befrienders at 04-281 5161(Penang) or 03-7956 8144 (Kuala Lumpur).

Benefits of this study:
Participants will not be compensated in participating the study. However, your participation will help the researcher to gain more insights into how cognitive reappraisal plays a role in mediating the relationship between dispositional mindfulness and life satisfaction among undergraduate students.

Confidentiality:
The information collected during your participation in this study will remain anonymous and confidential. You will not be identified, with no identifying information collected. The data will only be accessed by the researchers and the supervisor of the researcher, with the purpose for this study only.

Decision to terminate participation:
Participation in this study is completely voluntary. You may withdraw from the study at any time, with no adverse action taken against you. Please inform the researcher if you wish to terminate participation, so that your responses can be separated and deleted.

Rights and complains:
I understand that this research study has been reviewed and approved by the Ethics Review Board, Department of Psychology, Faculty of Behavioral Sciences, Education and Languages, HELP University (ERB Approval Code:xxx). For research related problems or questions regarding participants' rights, I can contact:

Chairperson
Ethics Review Board
Department of Psychology
Faculty of Behavioral Science, Education and Languages
HELP University Subang 2 Campus
Persiaran Cakerawala,
Seksyen U4,
40160 Shah Alam,
Selangor, Malaysia.
Phone: 603-7849 3000

For any enquiries of this particular study, please feel free to contact the researcher via the email address as stated below:

Researcher:
Lee Zhing Tian
B1800711@helplive.edu.my

Primary Supervisor:	Ms. Khor Khai Ling	klkhor@disted.edu.my
Secondary Supervisor:	Dr. Eugene Tee	teeyj@help.edu.my

Thank you.

*Required

I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study. *

◯ I Agree

Relationship Between Dispositional Mindfulness and Life Satisfaction Among Undergraduate Students in Malaysia: Cognitive Reappraisal as the Mediator

*Required

Demographic Form

Please provide your information for the use of the study.

Are you an undergraduate student? *

- ◯ Yes
- ◯ No

Gender *

- ◯ Female
- ◯ Male
- ◯ Prefer not to say
- ◯ Other: _____

Age *

Your answer

Ethnicity *

- ◯ Chinese
- ◯ Malay
- ◯ Indian
- ◯ Other: _____

Religion *

- ◯ Buddism
- ◯ Christianity
- ◯ Islam
- ◯ Hinduism
- ◯ Taoism
- ◯ Other: _____

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Relationship Between Dispositional Mindfulness and Life Satisfaction Among Undergraduate Students in Malaysia: Cognitive Reappraisal as the Mediator

*Required

Mindfulness Attention Awareness Scale (MAAS)

This scale consists of 15 items. You will be required to read every statement and determine how well each statement fits you by rating on a 6-point scale.
1 - Almost Always
2 - Very Frequently
3 - Somewhat Frequently
4 - Somewhat Infrequently
5 - Very Infrequently
6 - Almost Never

I could be experiencing some emotion and not be conscious of it until some time later. *

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

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

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

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

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

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

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

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

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

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

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

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

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

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

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

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. *

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

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

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

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

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

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

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

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

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

I find myself doing things without paying attention. *

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

I snack without being aware that I'm eating. *

	1	2	3	4	5	6	
Almost Always	○	○	○	○	○	○	Almost Never

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Relationship Between Dispositional Mindfulness and Life Satisfaction Among Undergraduate Students in Malaysia: Cognitive Reappraisal as the Mediator

Emotion Regulation Questionnaire (ERQ)

This scale consists of 6 items. You will be required to read every statement and determine how well each statement fits you by rating on a 7-point scale. Although some of the questions may seem similar to one another, however, they are actually different in important ways.
1 - Strongly Disagree
4 - Neutral
7 - Strongly Agree

When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about.

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

When I'm faced with a stressful emotion, I make myself think about it in a way that helps me stay calm.

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

When I want to feel more positive emotion, I change the way I'm thinking about the situation.

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

I control my emotions by changing the way I think about the situation I'm in.

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

When I want to feel less negative emotion, I change the way I'm thinking about the situation.

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

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Relationship Between Dispositional Mindfulness and Life Satisfaction Among Undergraduate Students in Malaysia: Cognitive Reappraisal as the Mediator

*Required

Satisfaction With Life Scale (SWLS)

This scale consists of 5 items. You will be required to read every statement and indicate your agreement on each statement by rating on a 7-point scale.
1 - Strongly Disagree
2 - Disagree
3 - Slightly Disagree
4 - Neither Agree nor Disagree
5 - Slightly Agree
6 - Agree
7 - Strongly Agree

In most ways my life is close to my ideal. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

The conditions of my life are excellent. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

I am satisfied with my life. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

So far I have gotten the important things I want in life. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

If I could live my life over, I would change almost nothing. *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

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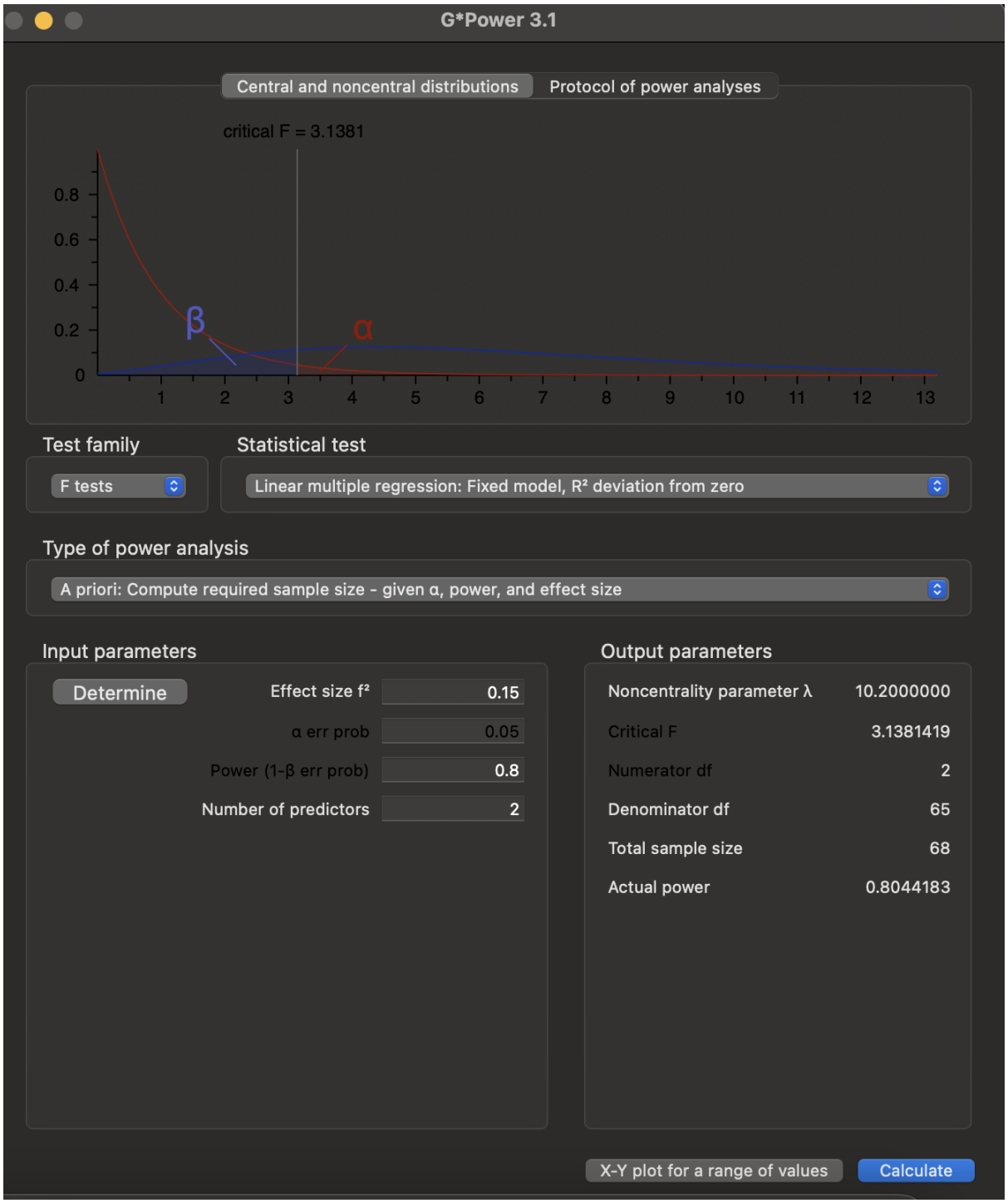
Relationship Between Dispositional Mindfulness and Life Satisfaction Among Undergraduate Students in Malaysia: Cognitive Reappraisal as the Mediator
Relationship Between Mindfulness and Life Satisfaction: Emotion Regulation as the Mediator
Thank you!
Thank you for taking the time in completing the questionnaires. Please help to share this survey link to people who meet the following criteria: (i) A undergraduate student who is studying in Malaysia, (ii) age from 18 to 25. Your contribution to this study is deeply appreciated.
Back
Submit

Appendix B
Screenshot of Sample Size Calculation using G*Power 3.1 Software

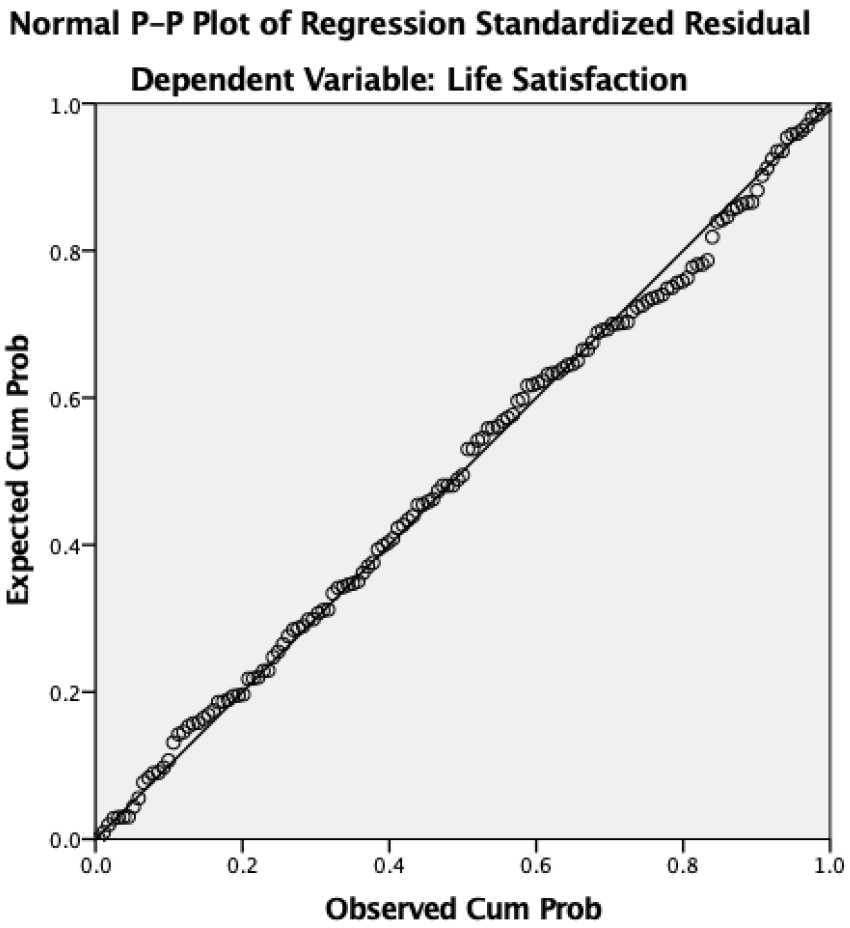


Appendix C
SPSS Output Table for Frequency Table of Ethnicity

Ethnicity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Chinese	137	93.2	93.2	93.2
	Malay	2	1.4	1.4	94.6
	Indian	8	5.4	5.4	100.0
	Total	147	100.0	100.0	

Appendix D
SPSS Output for Normal Probability Plot of Standardised Residuals



Appendix E
SPSS Output Table for Tests of Normality on Standardised Residuals

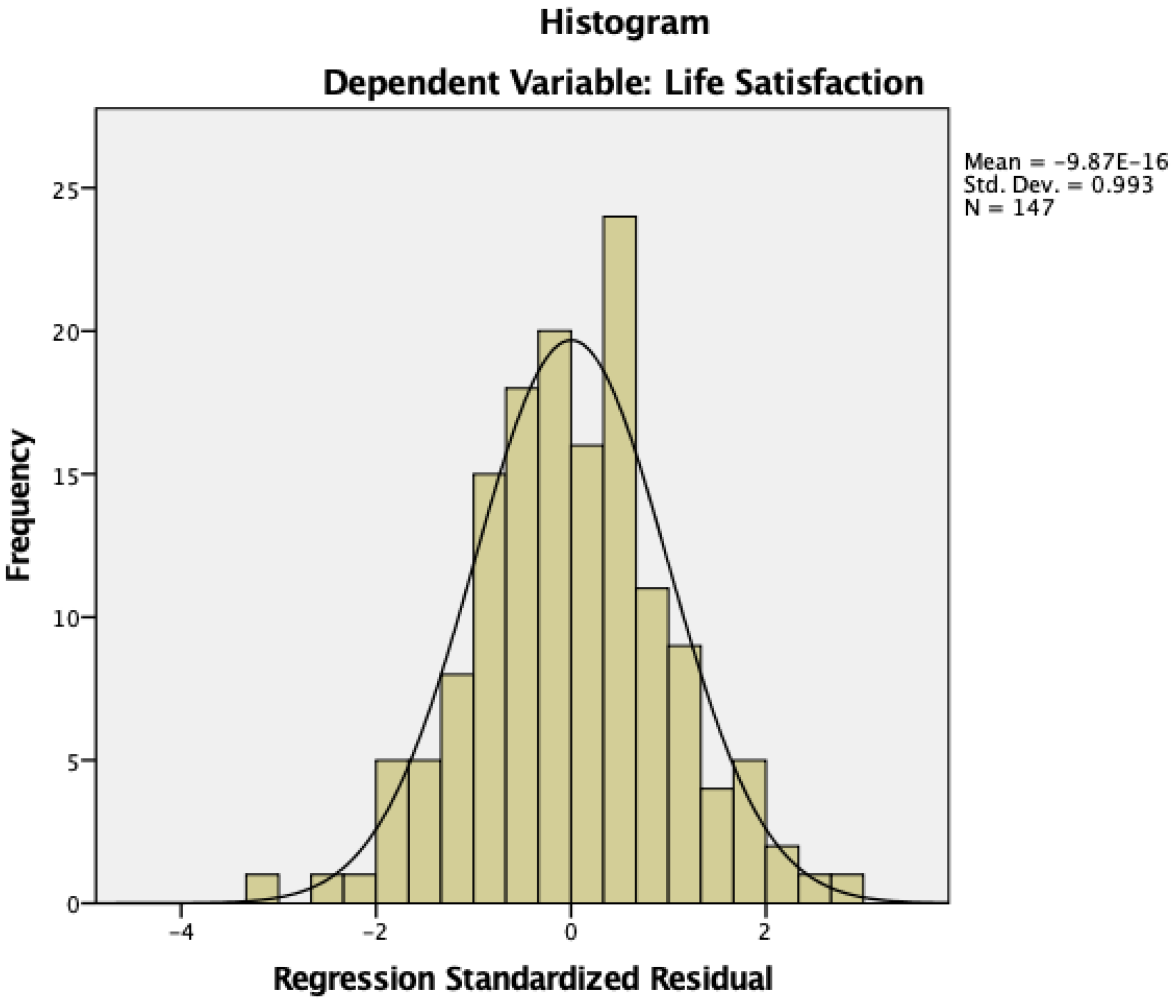
Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	.049	147	.200*	.995	147	.910

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Appendix F
SPSS Output for Histogram of Standardised Residuals



Appendix G
SPSS Output Table for Durbin-Watson Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin–Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.439[a]	.193	.181	5.67983	.193	17.187	2	144	.000	1.994

a. Predictors: (Constant), Cognitive Reappraisal, Dispositional Mindufiness

b. Dependent Variable: Life Satisfaction

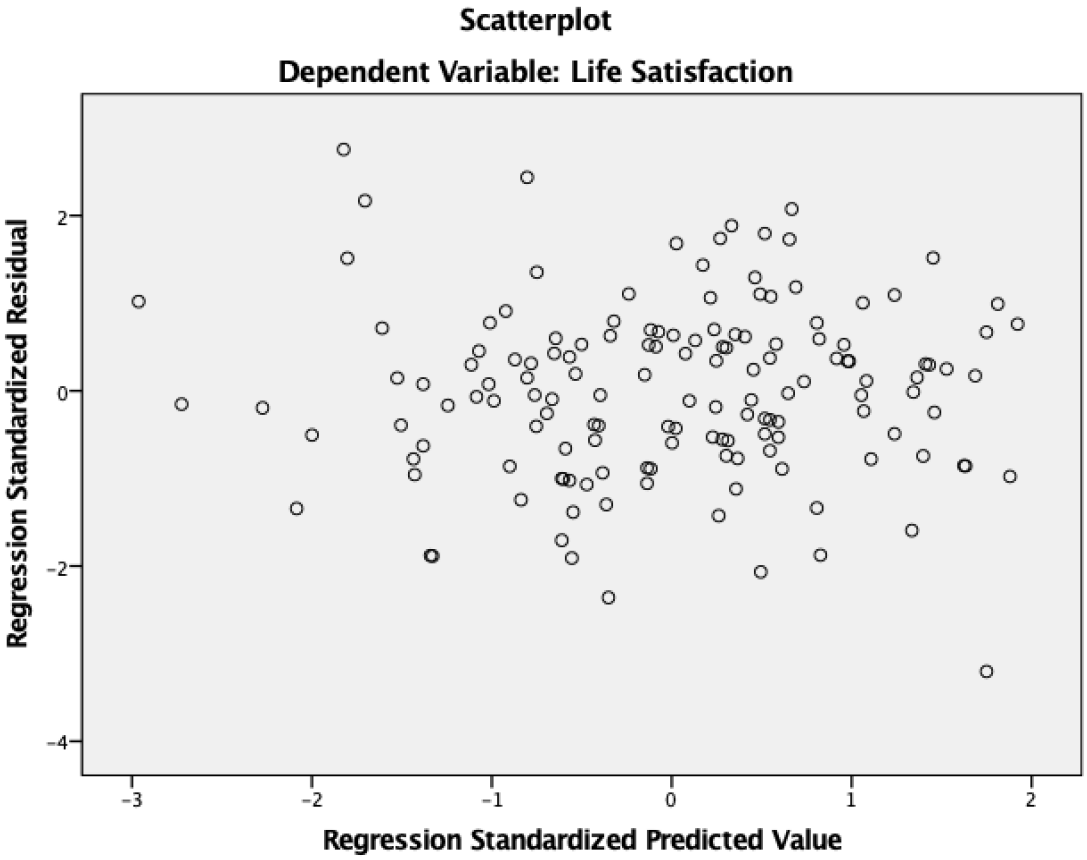
Appendix H
SPSS Output Table for Collinearity Statistics (Tolerance & VIF)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	6.378	2.724		2.341	.021	.994	11.762					
	Dispositional Mindufilness	1.330	.590	.174	2.252	.026	.162	2.497	.264	.184	.169	.938	1.066
	Cognitive Reappraisal	1.895	.405	.362	4.682	.000	1.095	2.694	.405	.363	.351	.938	1.066

a. Dependent Variable: Life Satisfaction

Appendix I
SPSS Output for Scatterplot of Standardised Residuals



Appendix J

SPSS Output Table for Mean Scores for Dispositional Mindfulness, Cognitive Reappraisal, and Life Satisfaction

Descriptive Statistics

	Mean	Std. Deviation	N
Life Satisfaction	21.3741	6.27804	147
Dispositional Minduflness	3.8248	.82199	147
Cognitive Reappraisal	5.2314	1.19941	147

Appendix K

SPSS Output Table for Pearson Correlations Among Dispositional Mindfulness, Cognitive Reappraisal, and Life Satisfaction

Correlations

		Life Satisfaction	Dispositional Minduflness	Cognitive Reappraisal
Pearson Correlation	Life Satisfaction	1.000	.264	.405
	Dispositional Minduflness	.264	1.000	.249
	Cognitive Reappraisal	.405	.249	1.000
Sig. (1-tailed)	Life Satisfaction	.	.001	.000
	Dispositional Minduflness	.001	.	.001
	Cognitive Reappraisal	.000	.001	.
N	Life Satisfaction	147	147	147
	Dispositional Minduflness	147	147	147
	Cognitive Reappraisal	147	147	147

Appendix L
SPSS Output for Mediation Analysis

```
**************************************************************************
Model  : 4
    Y  : Life_Sat
    X  : Disposit
    M  : Cognitiv

Sample
Size:  147

**************************************************************************
OUTCOME VARIABLE:
 Cognitiv

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .249       .062      1.359      9.595      1.000    145.000       .002

Model
              coeff         se          t          p       LLCI       ULCI
constant      3.841       .459      8.368       .000      2.934      4.748
Disposit       .364       .117      3.098       .002       .132       .595

Standardized coefficients
              coeff
Disposit       .249

**************************************************************************
OUTCOME VARIABLE:
 Life_Sat

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .439       .193     32.261     17.187      2.000    144.000       .000

Model
              coeff         se          t          p       LLCI       ULCI
constant      6.378      2.724      2.341       .021       .994     11.762
Disposit      1.330       .590      2.252       .026       .162      2.497
Cognitiv      1.895       .405      4.682       .000      1.095      2.694

Standardized coefficients
              coeff
Disposit       .174
Cognitiv       .362
```

```
************************** TOTAL EFFECT MODEL ****************************
OUTCOME VARIABLE:
 Life_Sat

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .264       .070     36.914     10.886      1.000    145.000       .001

Model
             coeff         se          t          p       LLCI       ULCI
constant    13.655      2.393      5.707       .000      8.925     18.384
Disposit     2.018       .612      3.299       .001       .809      3.227

Standardized coefficients
             coeff
Disposit      .264

************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_ps       c_cs
      2.018       .612      3.299       .001       .809      3.227       .321       .264

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_ps      c'_cs
      1.330       .590      2.252       .026       .162      2.497       .212       .174

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
Cognitiv      .689       .247       .248      1.223

Partially standardized indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
Cognitiv      .110       .040       .040       .196

Completely standardized indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
Cognitiv      .090       .032       .032       .156
```

```
************************ ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

NOTE: Variables names longer than eight characters can produce incorrect output.
      Shorter variable names are recommended.

------ END MATRIX -----
```