

**THE RELATIONSHIP BETWEEN BELIEFS ABOUT EMOTION AND
MENTAL HEALTH AMONG MALAYSIAN YOUNG ADULTS:
THE MEDIATIONAL ROLE OF EMOTION REGULATION**

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THE RELATIONSHIP BETWEEN BELIEFS ABOUT EMOTION AND
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THE MEDIATIONAL ROLE OF EMOTION REGULATION

ABSTRACT

Emotional disorders are becoming more prevalent among Malaysian young adults, indicating difficulties to healthily regulate emotions. This study investigated the association between beliefs about controllability of emotions (entity or incremental) and mental health, with usage of emotion regulation (ER) strategies proposed to mediate this relationship. Mental health is investigated in terms of anxiety, depressive symptoms and well-being whereas, ER strategies included reappraisal, suppression, enhancing positive affect, perspective taking, soothing and social modelling. Participants were 216 young adults aged 18-30 recruited via convenience sampling. They completed the 4-item Implicit Theories of Emotion Scale, 10-item Emotion Regulation Questionnaire, 20-item Interpersonal Emotion Regulation Questionnaire, 14-item Warwick-Edinburgh Mental Well-being Scale, Patient Health Questionnaire-9 and the Generalized Anxiety Disorder-7. Results showed that reappraisal mediated the relationship between entity beliefs and well-being, $b=-1.324$, 95% BCI [-2.527, -0.282] and incremental beliefs and well-being, $b=1.324$, 95% BCI [0.275, 2.540] whereas, social modelling mediated the relationship between entity beliefs and anxiety symptoms, $b=-0.421$, 95% BCI [-0.882, -0.079] and incremental beliefs and anxiety symptoms, $b=0.421$, 95% BCI [0.087, 0.890]. Higher suppression predicted more anxiety ($b=0.757$, $p=0.025$) and depressive symptoms ($b=1.446$, $p=0.0001$) whereas higher perspective taking predicted less anxiety ($b=-0.286$, $p=0.009$) and depressive symptoms ($b=-0.264$, $p=0.030$). Higher perspective taking ($b=0.705$, $p<.001$) and soothing ($b=0.621$, $p<.001$) also predicted higher well-being. Supporting the rationale behind implicit theories, the findings suggest that entity or incremental beliefs predicted the capability of regulating emotions, indicating worse or

better mental health. Practising more reappraisal is suggested to be beneficial while social modelling usage is rather disadvantageous.

Keywords: cognitive restructuring, implicit beliefs, well-being, anxiety, emotion malleability

(249 words)

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LIST OF SYMBOLS AND ABBREVIATIONS

Symbols

Symbols	Definition	Page number
%	Percentage	1
R^2	Multiple correlation squared	34
f^2	Effect size	34
α	Alpha	34
α err prob	Alpha error probability	34
n	Sample size	35
N	Total sample size	35
M	Sample mean	35
SD	Standard deviation	35
p	Significance value	42
$<$	Less than	42
$>$	More than	45
b	Beta value	46
$+$	Positive	48
$-$	Negative	48
BCI	Bootstrap confidence interval	52
t	The t distribution	53

Abbreviations

Cognitive Behavioural Therapy (CBT).....	15	Interpersonal Emotion Regulation (IER).....	3
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CHAPTER 1: INTRODUCTION

1.1 Description of the Problem

The regulation of emotion is important for healthy functioning in our daily lives. It is widely known that many mental disorders such as disorders of depression and anxiety involve emotional dysregulation (De Castella et al., 2013). It was reported in the National Health and Morbidity Survey (NHMS) both in 2011 and 2015 that there seemed to be higher depression and anxiety rates among Malaysians aged between 16-24 years old (Institute for Public Health [IPH], 2011; IPH, 2015). It was also concluded that younger adults appear to be at risk of mental health issues (IPH, 2015). The NHMS 2015 had established that among adults, the occurrence of mental disorders was 29.2% which indicated a threefold build up in comparison to the 10.7% occurrence rate in 1996 (IPH 2015; Chua et al., 2020). Moreover, the NHMS 2019 showed that among adults aged 18 and above, the national occurrence of depression is at 2.3%, which is equivalent to half a million people in the country. This percentage falls in the range of depression prevalence comparable to other countries (IPH, 2020). The report also pointed out that the prevalence was found to be significantly higher in single people and the non-working subpopulation (IPH, 2020), which appear to be more representative of the demographic of young adults between 18-30 years old today.

Despite some efforts put in by public and private sector initiatives to address mental health issues in Malaysia, it still clearly remains a rampant and increasing problem. Aside from the existing lack of affordable mental healthcare in the country, this rampant problem is very likely due to the burdened reality that the poor understanding of mental health in Malaysia is still a major barrier that needs to be addressed (Chua, 2020; Raaj et al., 2021). This echoes the recommendation by the NHMS 2019 that promotion and awareness about mental health issues to specific target groups (i.e single people and non-working subpopulation) should be increased (IPH, 2020). While the threefold rise in

the occurrence of mental disorders throughout the years is met with already struggling local mental health services and lack of mental health understanding, the sudden impact of the COVID-19 pandemic further escalated mental health issues in the country, exposing higher incidence of depressive and anxiety symptoms (Mud Shukri et al., 2023; Wong et al., 2023).

In the first systematic review of studies on the prevalence and factors involving anxiety, depression and stress during the COVID-19 pandemic by Mud Shukri et al. (2023), their analyses found an increased prevalence of depression ranging from 14.3%-81.7% and increased prevalence of anxiety ranging from 8.0%-81.7% compared to pre-COVID estimates. More than that, university students had the highest prevalence of anxiety. Upon uncovering consistent findings between age and mental health, younger adult populations that include university students were at a higher risk for anxiety and depression (Mud Shukri et al., 2023). This echoes the study by Wong et al. (2023) which found a higher prevalence of moderate to extremely severe anxiety and depression among university students during the pandemic.

During this period when people were in dire need of mental health services to support their increased anxiety and depressive issues, the pandemic further disrupted the delivery of mental health services globally (Kola, 2020) because of forced national lockdown restrictions (Mud Shukri et al., 2023). Due to the lack of mental health understanding, higher susceptibility of mental health issues among young adults and increasing symptoms of emotional related disorders, it is meaningful that this present study investigates further understanding on emotion regulation among young adults to contribute to local literature in strengthening mental health literacy.

1.2 Background of the Study

Several cross-sectional studies of youths and adults have determined that those with poor mental health such as higher depressive and anxiety problems are those who

are less expected to engage in emotion regulation (Tamir et al., 2007; De Castella et al., 2013; Ford et al., 2018; Ford & Gross, 2018b). The ability in controlling emotions is important so that humans can adjust to daily circumstances, such as effectively changing emotional behaviour to be adaptable to situational demands (Côté et al., 2010). Adapting to situational demands is essential for daily functioning to cope with the daily stressors in adult life. As a result, healthy emotion regulation contributes to good mental functioning and predicts long term mental health (Tamir et al., 2007; Ford et al., 2018).

Emotion regulation (ER) depends on strategies that people use daily, such as ‘cognitive reappraisal’ which means altering the thinking about a situation to change the emotional effect (Gross & John, 2003; Moore et al., 2008; Minihan et al., 2023; Beaumont et al., 2023), ‘expressive suppression’ which is masking emotional expression (Tamir et al., 2007; Ford et al., 2018; Minihan et al., 2023), and ‘interpersonal emotion regulation’ (also known as IER) which involves regulating one’s own emotion through social processes (Hofmann et al., 2016). According to the framework by Hofmann and colleagues’ (2016), there are four types of IER strategies, namely, social modeling, perspective taking, enhancing positive affect and soothing.¹ Thus, emotion regulation is defined as the processes where people form and influence their own emotions and how they experience and express them (Gross, 1998b) intrapersonally, that is within the self (De Castella et al., 2013; Ford et al., 2018) or interpersonally, that is through social processes (Hofmann et al., 2016; Williams et al., 2018).

Research shows that those who engage in thought reappraisal display better well-being (Gross & John, 2003; Beaumont et al., 2023) and lower psychological distress (Tamir et al., 2007). Those who have more interpersonal support experience lower anxiety and depression (Metts et al., 2022) and those who have a higher tendency to seek out IER predicted better well-being (Williams et al., 2018). However, studies also suggest that

¹ The American spelling of ‘social modeling’ is used here to maintain consistency with the study by Hofmann et al. (2016).

one's own belief in controlling emotions influences their likeliness in regulating emotions. De Castella et al. (2013) concur with Tamir et al. (2007) in that the controllability beliefs about of emotions strongly influences their engagement in regulating emotions. In fact, merely believing that emotions are uncontrollable comes at longer term costs in mental health (Tamir et al., 2007; Ford et al., 2018).

Longitudinal investigations have illustrated that believing that emotions are uncontrollable anticipates future depressive symptoms (Tamir et al., 2007), even while symptom levels are controlled from the onset (Ford et al., 2017). Believing that emotions are uncontrollable is also associated with poorer mental health which includes lower well-being, greater anxiety and depressive symptoms (De Castella et al., 2013; Ford & Gross, 2018b). In a study of individuals with social anxiety disorder (SAD), De Castella et al. (2014) found that these individuals deemed their own emotions as more fixed, demonstrating that their personal emotional beliefs indicate a stronger part in pathological levels of distress.

As beliefs about the controllability of domains such as emotion suggests that it is implied rather than expressed, they are known as implicit theories (Tamir, et al., 2007). Those who personally believe that emotions experienced cannot be controlled engage in a fixed mindset, also known as *entity beliefs* whereas, those who believe that emotions can be controlled immerse themselves in a growth mindset, also known as *incremental beliefs* (De Castella et al., 2013; Ford et al., 2018; Tamir et al., 2007). These two implicit theories come from the 'Implicit Theories of Emotion Scale (ITES)' developed by Tamir et al. (2007) which is an adaptation from the Implicit Theories of Intelligence Scale by Dweck (1999) that measured the fixed nature of intelligence.

1.3 Purpose of the Study

Since individual beliefs about emotion controllability has an influence over the usage of ER strategies in daily life, studying the relationship between them will add

understanding on the increase in mental health issues among Malaysian young adults. A few gaps in the existing literature are found. Firstly, personal beliefs about controllability of emotions in relation to IER has not yet been studied and there are only a handful of studies exploring IER involving the Asian context (Zaki & Williams, 2013; Liddell & Williams, 2019; Chan & Rawana, 2021). This makes data on young adults about implicit beliefs and IER scarce. Other than that, the relationship between reappraisal, suppression and IER to well-being, anxiety and depressive symptoms in the young adult population has not been clarified (Hofmann, et al., 2016). Moreover, the role of these emotion regulation strategies as possible mediators is scarce in published literature. Therefore, the purpose of this present study was to investigate the relationship between individual's beliefs about emotion, reappraisal, suppression and IER in relation to mental health in Malaysian young adults. And specifically, to investigate if reappraisal, suppression and IER strategies mediate the relationship between beliefs about emotion and mental health. For purposes of this present study, mental health was specifically measured in terms of depressive symptoms, anxiety symptoms and well-being as the handful of research on beliefs about emotion have explored these factors (Tamir et al., De Castella et al., 2013; Ford et al., 2018).

1.4 Research Objectives and Research Questions

The present study outlines the following research objectives:

Research objective #1: To investigate the beliefs about emotion among Malaysian young adults.

Research objective #2: To study the likeliness of using emotion regulation strategies namely reappraisal, suppression and interpersonal emotion regulation strategies with the beliefs about emotion in Malaysian young adults.

Research objective #3: To investigate the relationship between reappraisal, suppression and interpersonal emotion regulation strategies usage with mental health, namely in terms of depressive symptoms, anxiety symptoms and well-being.

Research objective #4: To investigate the mediational role of strategies of emotion regulation between beliefs about emotion and mental health.

Additionally, the present study is guided by the following research questions:

Research question #1: Do beliefs about emotion predict the usage of reappraisal, suppression and IER strategies among young adults between the age group of 18-30 years old?

Research question #2: Do the usage of reappraisal, suppression and IER strategies predict depressive symptoms, anxiety symptoms and well-being among young adults between the age group of 18-30 years old?

Research question #3: Do the usage of reappraisal, suppression and IER strategies mediate the relationship between implicit beliefs and mental health of young adults between the age group of 18-30 years old?

1.5 Hypotheses of the Study

Firstly, the present study outlines the following hypotheses for the relationships between entity beliefs about emotion with reappraisal, suppression and the four IER strategies:

H1a: There is a negative relationship between entity beliefs and reappraisal.

H1b: There is a positive relationship between entity beliefs and suppression.

H1c: There is a positive relationship between entity beliefs and social modeling.

H1d: There is a positive relationship between entity beliefs and perspective taking.

H1e: There is a positive relationship between entity beliefs and enhancing positive affect.

H1f: There is a positive relationship between entity beliefs and soothing.

The following outlines the hypotheses of the relationships between incremental beliefs about emotion with reappraisal, suppression and the four IER strategies:

H2a: There is a positive relationship between incremental beliefs and reappraisal.

H2b: There is a negative relationship between incremental beliefs and suppression.

H2c: There is a positive relationship between incremental beliefs and social modeling.

H2d: There is a positive relationship between incremental beliefs and perspective taking.

H2e: There is a positive relationship between incremental beliefs and enhancing positive affect.

H2f: There is a positive relationship between incremental beliefs and soothing.

Thirdly, the following outlines the hypotheses of the relationships between all the emotion regulation strategies with depressive symptoms and anxiety symptoms:

H3a: There is a negative relationship between reappraisal and depressive symptoms along with anxiety symptoms.

H3b: There is a positive relationship between suppression and depressive symptoms along with anxiety symptoms.

H3c: There is a negative relationship between social modeling and depressive symptoms along with anxiety symptoms.

H3d: There is a negative relationship between perspective taking and depressive symptoms along with anxiety symptoms.

H3e: There is a negative relationship between enhancing positive affect and depressive symptoms along with anxiety symptoms.

H3f: There is a negative relationship between soothing and depressive symptoms along with anxiety symptoms.

Next, the following outlines the hypotheses of the relationships between all the emotion regulation strategies with well-being:

H4a: There is a positive relationship between reappraisal and well-being.

H4b: There is a negative relationship between suppression and well-being.

H4c: There is a positive relationship between social modeling and well-being.

H4d: There is a positive relationship between perspective taking and well-being.

H4e: There is a positive relationship between enhancing positive affect and well-being.

H4f: There is a positive relationship between soothing and well-being.

This study outlines the following mediation hypotheses between entity beliefs and depressive symptoms with all emotion regulation strategies:

H5a: Reappraisal will mediate the relationship between entity beliefs and depressive symptoms.

H5b: Suppression will mediate the relationship between entity beliefs and depressive symptoms.

H5c: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between entity beliefs and depressive symptoms.

This study outlines the following mediation hypotheses between entity beliefs and anxiety symptoms with all emotion regulation strategies:

H5d: Reappraisal will mediate the relationship between entity beliefs and anxiety symptoms.

H5e: Suppression will mediate the relationship between entity beliefs and anxiety symptoms.

H5f: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between entity beliefs and anxiety symptoms.

This study outlines the following mediation hypotheses between entity beliefs and well-being with all emotion regulation strategies:

H5g: Reappraisal will mediate the relationship between entity beliefs and well-being.

H5h: Suppression will mediate the relationship between entity beliefs and well-being.

H5i: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between entity beliefs and well-being.

This study outlines the following mediation hypotheses between incremental beliefs and depressive symptoms with all emotion regulation strategies:

H6a: Reappraisal will mediate the relationship between incremental beliefs and depressive symptoms.

H6b: Suppression will mediate the relationship between incremental beliefs and depressive symptoms.

H6c: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between incremental beliefs and depressive symptoms.

This study outlines the following mediation hypotheses between incremental beliefs and anxiety symptoms with all emotion regulation strategies:

H6d: Reappraisal will mediate the relationship between incremental beliefs and anxiety symptoms.

H6e: Suppression will mediate the relationship between incremental beliefs and anxiety symptoms.

H6f: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between incremental beliefs and anxiety symptoms.

Finally, this study outlines the following mediation hypotheses between incremental beliefs and well-being with all emotion regulation strategies:

H6g: Reappraisal will mediate the relationship between incremental beliefs and well-being.

H6h: Suppression will mediate the relationship between incremental beliefs and well-being.

H6i: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between incremental beliefs and well-being.

1.6 Theories used in the Study

There are a few theories that lay the foundation of the different variables investigated in this present study. Firstly, the two implicit theories on beliefs about emotion came from the Implicit Theories of Emotion Scale (ITES)' developed by Tamir et al. (2007). It was inspired by the Implicit Theories of Intelligence Scale by Dweck (1999) that measured the fixed nature of intelligence. The explanation on the ITES by Tamir et al. (2007) stipulates that emotional beliefs are tied to efficacy of regulating emotions. Specifically that those with fixed beliefs would be less likely to believe in their capability of regulating emotions and those with a growth mindset would believe more that they are capable of altering their emotions. Tamir et al. (2007) also suggests that emotions behind implicit theories better apply to emotion experience (such as using reappraisal) rather than expression (such as suppression).

Secondly, the first two emotion regulation strategies of interest in this present study, reappraisal and suppression are taken from the theoretical framework of Gross' process model of emotion regulation. Based on this widely used process model (Webb et al., 2012), it stipulates that emotions are regulated by manipulating the input (antecedent-focused) or the output (response-focused) (Gross, 1998a, 1998b). Both approaches, antecedent and response-focused, further divide into sub-approaches. Firstly, one of four sub-approaches of the antecedent-focused approach is 'cognitive change' which refers to re-interpreting a situation to alter its emotional impact, also known as reappraisal (Gross, 1998a; Webb et al., 2012). This sub-approach was directly explored in the experimental

study by Gross (1998a) and most studies of antecedent-focused approaches have commonly studied reappraisal, evidencing its long-term benefits to emotional health.

The response-focused approach, also known as ‘response modulation’ which is modifying the emotional response (Gross, 1998b) has one known sub-approach called suppression, which simply means to mask the emotional expression (Gross, 1998a; Gross, 1998b; Webb et al., 2012) where it involves impeding the outer cues to one’s inner emotional condition (Gross & John, 2003; Moore et al., 2008). It is important to denote that suppression is not to be confused with repression which refers to the unconscious hampering of thoughts, memories or impulses pushed out of awareness (Vaillant, 1992).

1.7 Significance of the Study

As it was suggested that young adults are the main group at risk of mental health issues in Malaysia (IPH, 2015), young adults between 18-30 years will be the focus of the study. It is valuable to investigate their ways of regulating emotion-related issues and to also illustrate the difference between adaptive and maladaptive emotional beliefs that influences their likeliness in employing strategies in altering their emotions. This study investigated the mediational role of emotion regulation strategies between implicit beliefs about emotion and mental health, enriching the emotion regulation literature with data from a Southeast Asian study. Additionally, it combines the two realms of emotion regulation, intrapersonal and interpersonal as a step forward in combining personal and social ways of regulating one’s emotions. This study will benefit the Malaysian public on more awareness regarding emotional health and provide deeper insight for practitioners, the private and public sector to potentially enrich their mental health treatment programs.

CHAPTER 2: LITERATURE REVIEW

2.1 Implicit Beliefs about Emotion

As beliefs are a fundamental notion of the nature of human emotion, studying beliefs about emotion is contributory to understanding the increased problems of emotional dysregulation faced today by Malaysian young adults. According to Ford and colleagues (2018), everyone has the capability to theorize and develop malleability beliefs about emotion. Beliefs are important as it builds how people interact with the world (Ford & Gross, 2018b). Ford and Gross (2018a) and Ford et al. (2018) agree that different beliefs about emotion are deeply consequential and guide how people feel as a result. In fact, the systematic review by Somerville et al. (2023) gathered that malleability beliefs about emotion are associated with depression and anxiety across a wide age range. Implicit beliefs about emotion is defined as the belief that emotions can be altered, termed *incremental beliefs* or cannot be altered, termed *entity beliefs* (Ford & Gross, 2018b; Tamir et al., 2007; De Castella et al., 2013). Ford and Gross (2018b) affirm that the belief about the controllability of emotions has a long-standing history in the discussion of emotions and it is fundamental to how people view emotions.

Beliefs suggest that they are implied rather than expressed outwardly, hence they are known as implicit theories (Tamir et al., 2007; De Castella et al., 2013; Dweck & Leggett, 1988). Several studies on implicit beliefs about of emotion have elaborated the differences between entity and incremental beliefs in which both have an impact on the likeliness of using ER strategies (Tamir et al., 2007; De Castella et al., 2013; Ford et al., 2018; Ford & Gross, 2018b). It is suggested that beliefs about controllability of emotion should lead to the incidence of ER (Ford & Gross, 2018b). Past studies demonstrate that not everyone views emotions as controllable (Tamir et al., 2007; De Castella et al., 2013; Ford et al., 2018). More than that, believing that emotions are uncontrollable should undoubtedly compromise the process of emotion regulation (Kneeland et al., 2016). In

studies involving young adults, it was found that those holding entity beliefs are more anticipated to be maladaptive emotion regulators than those with incremental beliefs (Tamir et al., 2007; De Castella et al., 2013; Ford et al., 2018; Ford & Gross 2018b). Due to their core belief that emotions cannot be controlled, the young adult entity believers also display lower usage of effective ER strategies such as reappraisal (De Castella et al., 2013; Ford et al., 2018; Tamir et al., 2007). On the other hand, incremental believers are more likely to practise reappraisal (De Castella et al., 2013; Ford et al., 2018; Kneeland et al., 2016) and seek social support (Tamir et al., 2007). While these two types of implicit beliefs carry opposing meanings, they are not to be confused as being unbending polar opposites and neither are they completely at odds with each other. Rather, they can be seen as two sides of a continuum in which either belief represents different sides of a domain, which in this case is on emotions, existing in two different degrees. Tamir et al. (2007) argue that since emotions are transient states, emotions are expected to be more changeable than the domain of intelligence, which is more trait-like.

2.2 Implicit Beliefs about Emotion and Young Adults

While understanding that those who hold fixed beliefs about emotion tend to perform poorer in mental health, it was needed to review through current literature to discover why particularly the Malaysian young adult population are suffering with higher emotional disorders today as this age population is the focus of this present study. There are a handful of studies on implicit beliefs about emotion in relation to ER that have focused on young adults above 18 years old, typically undergraduate students (Tamir et al., 2007; De Castella et al., 2013; Ford et al., 2018). These studies have reported similarities in their findings about implicit beliefs about emotion.

Firstly, the four-part study by Tamir et al. (2007) explored emotional and social adaptation in young adult's transition to college. Their longitudinal study was carried out on freshmen, aged 18 on average and evidenced that those with entity beliefs have lower

well-being, more symptoms of depression and lower social adjustment. Higher incremental beliefs were linked with greater usage of reappraisal but was not linked to suppression (Tamir et al., 2007). Their study found that almost 40% of their student sample believed that emotions are uncontrollable. The findings for suppression as an ER strategy in relation to beliefs about emotion are unclear, Tamir et al. (2007) state that implicit theories better apply to emotion experience, rather than influencing overt behaviours such as suppression. However, suppression is more practised in Asian cultures (Hu et al., 2014). And to date, only one study by Deplancke et al. (2022) has found a negative relationship between beliefs about emotion controllability and suppression, due to their large and diverse sample size (1227 participants). As suppression is deemed a maladaptive strategy (Kraiss et al., 2020) and entity believers are deemed as maladaptive emotion regulators, it is valuable to investigate this relationship in this present study.

The cross-sectional study by De Castella et al. (2013) that focused on undergraduates aged between 17 and 29 found the same pattern that the more entity beliefs about emotion were held, they were less prone to engaging in reappraisal daily. Consistent with Tamir and colleagues' (2007) study, they also found that fixed beliefs related with diminished well-being and increased depression (De Castella et al., 2013). Thirdly, another cross-sectional study by Ford et al. (2018) found that entity beliefs, lesser use of reappraisal and the impact on depressive symptoms is particularly relevant during youth (aged 14 to 18 years) as emotion affiliated beliefs first expand in this age and maladaptive beliefs add to the risk of depression. One consistent pattern that was found in their pilot study (conducted on adults aged 21 to 60 years) is that those holding entity beliefs also demonstrated lesser daily usage of reappraisal (Ford et al., 2018). Therefore, the following hypotheses are:

H1a: There is a negative relationship between entity beliefs and reappraisal.

H1b: There is a positive relationship between entity beliefs and suppression.

H2a: There is a positive relationship between incremental beliefs and reappraisal.

H2b: There is a negative relationship between incremental beliefs and suppression.

2.3 Emotion Regulation (ER)

Emotions guide us on how to lead our lives and how we feel tells whether the environment benefits or works against us (Chesney, 2018). Because of this, people act and react to the emotions they feel. Gaining the skills needed for successful ER represents a profound developmental achievement (Christopher & Facal, 2023) and by adulthood, it becomes entirely necessary for daily functioning (Christopher & Facal, 2023). For example, the continued practice on regulations via cognitive and behavioural means such as a combination of challenging thoughts (as part of cognitive restructuring) and behavioural activation used in cognitive behavioural therapy (CBT) may improve outcomes long-term (Oud et al., 2019).

With that said, the approach to regulating emotions can either be adaptive or maladaptive (Chesney, 2018) which affects mental health positively or negatively. For instance, Gross and Muñoz (1995) state that efforts made for adaptive ER counters the temporary increases in depressive mood, permitting a return to normal mood states. Because of this, it is very much the concern in emotion studies that the key to leading an emotionally healthy life depends upon how people regulate their emotions for better mental health (Gross & John, 2003; Ford & Gross, 2018b). Hence, much of the literature on ER zooms into the strategies that people use for themselves that show whether they are adaptive or maladaptive emotion regulators (De Castella et al., 2013; Ford et al., 2018).

The meta-analytic study on the relationship between ER with well-being in patients with psychological disorders by Kraiss et al. (2020) found that when strategies were clustered as adaptive (acceptance and reappraisal) and maladaptive (suppression, avoidance and rumination), adaptive strategies positively associated with well-being and

maladaptive strategies negatively associated with well-being (Kraiss et al., 2020). Furthermore, some studies in fact found ER to mediate the link between the predictor variable and well-being, as the dependent variable (Chin & Rickard, 2014; Sakakibara & Ishii, 2020). Well-being was found to be higher through mediation of adaptive ER and lower through mediation of maladaptive ER (Sakakibara & Ishii, 2020).

More than that, enhancement of mental health can also be achieved by intentionally regulating positive and negative emotions (Hu et al., 2014), depending on the type of ER strategy used. The meta-analytic study by Hu et al. (2014) found that reappraisal linked positively with positive factors of mental health and linked negatively with negative factors of mental health. However, suppression linked negatively with positive factors of mental health and positively with negative factors of mental health (Hu et al., 2014). Here, positive factors comprised of positive affect and life satisfaction which are both aspects of well-being whereas, negative factors included negative affect, depression and anxiety (Hu et al., 2014; Kraiss et al., 2020).

2.4 Difference between Reappraisal and Suppression

According to Gross and John (2003), the two types of intrapersonal ER strategies that people commonly use in everyday life are reappraisal and suppression. There is some evidence that suggests there are differences between the efficacy of reappraisal and suppression depending on its context (Zhou et al., 2023). The meta-analytic study by Webb et al. (2012) evaluated the effectiveness of each ER strategy upon identifying over 300 experimental comparisons that derived strategies from Gross' process model of emotion regulation. From this, Webb et al. (2012) further identified 4 sub-types of reappraisal (representing cognitive change) and 4 sub-types of suppression (representing response modulation) where each sub-type yielded differences in effectiveness. The main findings under reappraisal were that the sub-type, 'reappraise emotional response' had lower effectiveness than the sub-type, 'reappraise emotional stimulus' (Webb et al.,

2012). This means that being told that the emotion is normal and to accept it or not judge it (reappraise the emotional response) was not as effective as being asked to imagine that an emotional event (i.e negative event) had a different emotional outcome (i.e positive outcome), known as ‘reappraise emotional stimulus’, or cognitive reappraisal.

Secondly, under suppression, the sub-type to ‘suppress the expression of emotion,’ or expressive suppression, proved effective (Webb et al., 2012). However, both the sub-types to ‘suppress thoughts of the emotion-eliciting event’, that is to control or prohibit oneself from pondering about the emotion-inducing incident, and to ‘suppress the experience of emotion’, that is to control or prohibit oneself from experiencing the focal emotion did not prove effective. Consistent with previous research, people have more difficulty suppressing the experiential elements of emotional experience but they seem more able to mask their emotional expressions possibly due to its importance for social functioning (Webb et al., 2012). It was debated that suppression’s effect on emotional outcomes is only understood upon differentiating the effect of suppressing the emotional expression rather than the experience. As Gross’ process model defines suppression as ‘expressive suppression’, Webb et al. (2012) found that this form of suppression empirically and conceptually differs from experiential suppression.

2.5 Reappraisal, Suppression and Culture

Reappraisal usage is affiliated with less depression (Gross & John, 2003; Tamir et al., 2007; De Castella et al., 2013), increased life satisfaction (Moore et al., 2008) and better well-being (Gross & John, 2003; Beaumont et al., 2023). It also has adaptive consequences for affect and relationships (Gross & John, 2003; Jazaieri et al., 2016). Moore et al. (2008) found that reappraisal was affiliated with lesser levels of depression in the undergraduate sample and lesser levels of trait and state anxiety in the sample of trauma-exposed community. Their findings were consistent with other studies (Gross & John, 2003; Tamir et al., 2007) showing reappraisal’s potentially adaptive nature.

McRae et al. (2012) found that in response to a laboratory task, people with higher well-being displayed more effective reappraisal usage and reappraisal effectiveness was associated with higher frequency of reappraisal use. Habitual reappraisal engagement is also associated with decreasing negative and increasing positive affect (Gross & John., 2003; De Castella et al., 2013). Also, reappraisal is less cognitively demanding than suppression (Egloff et al. 2006) and is related to better recovery of physiological stress (Jamieson et al. 2012). It is unlike suppression which is more detrimental, has lower effectivity in modifying negative emotions and increases anxiety and depression (Moore et al., 2008).

If people are less likely to use reappraisal, they would experience worse mental health as a result (Ford et al., 2018). Studies show that decreased reappraisal engagement was reported by participants that have Social Anxiety Disorder (SAD) (D'Avanzato et al., 2013; Jazaieri et al., 2016) and participants with Major Depressive Disorder (MDD) (D'Avanzato et al., 2013). It shows that struggling to engage in reappraisal is regarded as central mechanism in the preservation of psychopathology in mood and anxiety disorders (Hofmann et al. 2012). However, Aldao and Mennin (2012) found that reappraisal was equally effective in decreasing negative affect in clinical and healthy controls even while acknowledging that participants with Generalized Anxiety Disorder (GAD) have higher negative affect to begin with when compared to healthy controls.

The impact of reappraisal and suppression on mental health are consistent with research evidence (Tamir et al., 2007, De Castella et al., 2013; Hu et al., 2014; Ford et al., 2018; Cameron & Overall, 2018) in which reappraisal is beneficial towards long term mental health and suppression is widely known to be less beneficial and even detrimental to mental health. Because of this, reappraisal is typically considered a better ER strategy than suppression (Gross & John, 2003; Hu et al., 2014; Ford et al., 2018; Zhou et al., 2023). However, suppression is more widely used in Asian cultures and may even be

beneficial to interdependent cultures. It was noted that the correlation on positive and negative factors of mental health with expressive suppression differs by culture (Hu et al., 2014).

Studies have demonstrated that those with Asian backgrounds are more likely to report using suppression as it is socially rewarded, associated with interpersonal harmony and congruous with cultural values (Hu et al., 2014; Ford & Mauss, 2015) which suggest that suppression is more normative (Soto et al., 2011). This is as those who belong to a culture of interdependence, like East Asians (such as Japan or China) define themselves more based on relationships and prioritize harmony with others (Hu et al., 2014; Ford & Mauss, 2015). This is consistent with cross-cultural research that has widely focused on ER strategies that aim on emotional behaviour (such as suppression). Ford and Mauss (2015) reason that it is possibly because emotional behaviour is more directly and visibly promoting, than clashing with cultural values.

To add on, the findings on the moderation analysis by Soto et al. (2011) showed that their Hong Kong Chinese participants reported higher usage of suppression than European American participants. Their tendency to engage in suppression was however, not significantly linked to depressed mood and life satisfaction. Schunk et al. (2022) found that among Japanese participants, suppressing negative emotions from a place of emphatic concern was linked with enhanced mental health (lesser depressive symptoms and higher subjective well-being). Schunk et al. (2022) suggest that ‘masking negative emotion out of concern for others’ might be an adaptive strategy for the Japanese. However, similar to Soto et al. (2011), suppression without emphatic concern was not related to depressive symptoms or subjective well-being (Schunk et al., 2022). The outcomes of these studies generally support the suggestion that lesser negative outcomes have been linked with suppression among those belonging to cultures that value emotional restraint over expression (Soto et al., 2011).

The prevalence of reappraisal usage mostly does not differ across cultures, unlike suppression (Gross & John, 2003; Soto et al., 2011; Ford & Mauss, 2015; Schunk et al., 2022) possibly because reappraisal targets the less visible internal experience of emotion. Some evidence pinpoints that people from interdependent cultures (like Malaysia) benefit from reappraisal (Kwon et al., 2013) and that literature clearly shows that reappraisal carries many mental health benefits. Evidence also pinpoints that those from Asian cultures may gain more from suppression as it is congruent with the social value system (Hu et al., 2014) although it is associated with detrimental effects to mental health. Therefore, this study presents the following hypotheses:

H3a: There is a negative relationship between reappraisal and depressive symptoms along with anxiety symptoms.

H3b: There is a positive relationship between suppression and depressive symptoms along with anxiety symptoms.

H4a: There is a positive relationship between reappraisal and well-being.

H4b: There is a negative relationship between suppression and well-being.

2.6 Implicit Beliefs, Reappraisal and Mental Health

In relation to beliefs about emotion, young adult entity believers demonstrate lower usage of effective ER strategies such as reappraisal (Tamir et al., 2007; De Castella et al., 2013; Schroder et al., 2015; Ford et al., 2018). On the other hand, incremental believers are more likely to engage in reappraisal (De Castella et al., 2013; Kneeland et al., 2016; Deplancke et al., 2022). Upon replicating and extending their cross-sectional study, Ford et al. (2018) found that their longitudinal data evidenced that youths who hold entity beliefs have lower likeliness to practise reappraisal a year and a half later. Less frequent usage of reappraisal predicted worse mental health for youths and adults (Ford et al., 2018). Similarly, Tamir et al. (2007) found that undergraduate students holding entity beliefs certainly reported less reappraisal usage as opposed to their incremental

counterparts. De Castella et al. (2013) found that when more people adopt entity beliefs about emotions, they are less likely to practise reappraisal daily. This is as people believe that emotions cannot readily be altered, they might be less willing to practise cognitive strategies (like reappraisal) in daily life (De Castella et al., 2013).

Entity beliefs about emotions was also related with increased depression and stress and diminished well-being (reduced self-esteem and satisfaction with life) (De Castella et al., 2013; Ford et al., 2018). In fact, this link was mediated by lower reappraisal (De Castella., 2013; Ford et al., 2018) whereby those with stronger entity beliefs go on in future to experience more depressive symptoms partially because they are less inclined to engage in reappraisal. These mediations were significant for self-reported symptoms and remained significant whether earlier assessments of symptoms were controlled for or not (Ford et al., 2018). Mediation was also discovered among incremental believers who reported more usage of reappraisal overall (De Castella et al., 2013; Deplancke et al., 2022) and their higher usage of reappraisal mediates the relationship between their emotion controllability beliefs and well-being (De Castella et al., 2013). It is suggested that reduced well-being and increased depression when more people endorsed entity beliefs is partly explained by differences in their use of reappraisal (De Castella et al., 2013). Similarly, Ford et al. (2018) conclude that youths with higher entity beliefs experience more depressive symptoms partly because they are less likely to use reappraisal.

The findings from the cross-sectional studies by De Castella et al. (2013) and Ford et al. (2018) indicate a similar pattern which point towards the importance of understanding beliefs about emotion and its predictive role towards mental health. Although causal conclusions could not be drawn from the study by Tamir et al. (2007), they found that the beliefs held by participants measured from the beginning of their longitudinal study was predictive of the social and emotional experiences that participants

faced over time. This suggests that beliefs about emotion possibly influences the social and emotional trajectory of young adults. These reasons motivate the focus of the current study to investigate and extend the literature on emotion malleability beliefs and its influence on well-being and mental health in the Malaysian young adult population. Therefore, this study presents the following mediation hypotheses between entity beliefs and the dependent variables (DVs) with reappraisal and suppression:

H5a: Reappraisal will mediate the relationship between entity beliefs and depressive symptoms.

H5b: Suppression will mediate the relationship between entity beliefs and depressive symptoms.

H5d: Reappraisal will mediate the relationship between entity beliefs and anxiety symptoms.

H5e: Suppression will mediate the relationship between entity beliefs and anxiety symptoms.

H5g: Reappraisal will mediate the relationship between entity beliefs and well-being.

H5h: Suppression will mediate the relationship between entity beliefs and well-being.

This study also proposes the following mediation hypotheses between incremental beliefs and the DVs with reappraisal and suppression:

H6a: Reappraisal will mediate the relationship between incremental beliefs and depressive symptoms.

H6b: Suppression will mediate the relationship between incremental beliefs and depressive symptoms.

H6d: Reappraisal will mediate the relationship between incremental beliefs and anxiety symptoms.

H6e: Suppression will mediate the relationship between incremental beliefs and anxiety symptoms.

H6g: Reappraisal will mediate the relationship between incremental beliefs and well-being.

H6h: Suppression will mediate the relationship between incremental beliefs and well-being.

2.7 Interpersonal Emotion Regulation (IER) and its Benefits

Emotion regulation research predominantly covers strategies on the intrapersonal level (Hofmann et al., 2016; Niven et al., 2011) as it was first studied in this context (Loskot, 2019). As it is self-directed, this is why they are often referred to as self-regulation strategies (Hofmann et al., 2016; Niven et al., 2011). Yet, interpersonal emotion regulation is as important because people also seek emotional goals through social processes, such as by turning to others for help (Williams et al., 2018). Zaki and Williams (2013) express that there have been surprisingly little attempts to combine data of factors such as social sharing into one conceptual framework on interpersonal regulation. Hence, this makes research on IER much lesser known than intrapersonal emotion regulation strategies as there is no clear framework on what encompasses IER (Zaki & Williams, 2013).

As the main concept in IER involves social processes, clear distinctions about social support versus IER have been made by a few studies that have defined IER in their own frameworks (Hofmann et al., 2016; Niven et al., 2011; Williams et al., 2018). Social support is a larger social concept related to exchanging resources between at least two people to enhance well-being (Zaki & Williams, 2013). On the other hand, IER is a narrower construct that is defined as the regulation of one's own emotion through other people (Hofmann, 2014; Hofmann et al., 2016). This means that the definition of IER by Hofmann and colleagues (2016) focuses on personal emotion regulation through other people. Thus, this distinction determines that instruments that assess social support fail to correctly represent IER (Hofmann et al., 2016; Williams et al., 2018). In the framework

proposed by Hofmann et al. (2016), there are four strategies that make IER as a whole. They are: *social modeling*, which includes looking to others to see how they might cope with a certain situation; *perspective taking*, that measures using others to be reminded not to fret and that other people face it worst off; *enhancing positive affect*, which measures the inclination to seek others to boost joy and happiness; and *soothing*, which entails seeking others for sympathy and comfort (Hofmann et al., 2016). To date, these IER strategies under Hofmann and colleagues' (2016) framework is the only measure that specifically assesses IER for the self, as Zaki and Williams (2013) had established theoretically (Chesney, 2018).

It is crucial to state that the four strategies employed in the framework by Hofmann et al. (2016) focuses on intrinsic IER. This means it pinpoints to the process of when one regulates their own emotions by employing others' help (Hofmann et al., 2016). The process can occur in the context of social interactions but does not need another's response (response-independent) and also relies on particular qualities of another's feedback (response-dependent) (Zaki & Williams, 2013). By relying on another's (the observer's) feedback to regulate one's own (the target's) emotion, this suggests that some aspect of empathy is employed. Zaki (2020) discusses aspects of empathy and IER while providing an integrated perspective between them. Empathy is described as a combination of different but interlinked processes in which observers respond to the target's emotion through mentalizing, empathic concern or experience sharing (Zaki, 2020). It is suggested that experience sharing, that is an observer taking on the target's internal experience, is more likely to influence intrinsic IER (Zaki, 2020). Empathic concern, defined as the motivation to improving another's well-being (Zaki, 2020) would be employed by the observer in the case of intrinsic IER as they are recruited by the target to shift the target's emotional trajectory.

To add on, in relation to implicit beliefs, IER has not been explored together with beliefs about controllability of emotions possibly because research on IER is fairly new (Loskot, 2019) and not all studies of IER have a consensus on what encompasses the IER framework. Reaping the benefits of engaging in IER strategies is however, dependent on the severity of anxiety or depressive symptoms (Hofmann et al., 2016; Chesney 2018). The study on non-clinical participants by Hofmann et al. (2016) found that the usage of three IER strategies namely soothing, social modeling and perspective taking are directly linked to trait symptoms of depression and the usage of soothing and social modeling are directly linked to trait symptoms of anxiety (Hofmann et al., 2016). Due to this, it was concluded that IER gives rise to elevated symptom levels as people consider being helped as a sign of weakness and that they are ineffective at coping on their own (Hofmann et al. 2016). Hence, it can be deduced that these individuals with greater anxiety and depressive symptom levels who regard themselves to be ineffective at self-coping (Hofmann et al., 2016), likely hold entity beliefs about emotion as they are not controlling emotions on their own and are more inclined to practise IER strategies. On the other hand, it was suggested by Kneeland et al. (2016) that incremental believers about emotion could also be more inclined to engage in IER. Therefore, the following hypotheses are proposed:

H1c: There is a positive relationship between entity beliefs and social modeling.

H1d: There is a positive relationship between entity beliefs and perspective taking.

H1e: There is a positive relationship between entity beliefs and enhancing positive affect.

H1f: There is a positive relationship between entity beliefs and soothing.

H2c: There is a positive relationship between incremental beliefs and social modeling.

H2d: There is a positive relationship between incremental beliefs and perspective taking.

H2e: There is a positive relationship between incremental beliefs and enhancing positive affect.

H2f: There is a positive relationship between incremental beliefs and soothing.

In relation to mental health, people who sought out IER also had higher likelihood of improved emotional and social well-being (Williams et al., 2018). This was in tune with previous findings in which participants report better well-being when managing their emotions via a varied group of relationships (Cheung et al., 2015). Additionally, even when people gravitate towards seeking others after feeling intense emotions, their well-being increases (Rimé, 2009). Metts et al. (2022) found that heightened interpersonal support led to lower likelihood of anxiety and depression emergence. Therefore, the following hypotheses are proposed:

H3c: There is a negative relationship between social modeling and depressive symptoms along with anxiety symptoms.

H3d: There is a negative relationship between perspective taking and depressive symptoms along with anxiety symptoms.

H3e: There is a negative relationship between enhancing positive affect and depressive symptoms along with anxiety symptoms.

H3f: There is a negative relationship between soothing and depressive symptoms along with anxiety symptoms.

H4c: There is a positive relationship between social modeling and well-being.

H4d: There is a positive relationship between perspective taking and well-being.

H4e: There is a positive relationship between enhancing positive affect and well-being.

H4f: There is a positive relationship between soothing and well-being.

2.8 Interpersonal Emotion Regulation (IER), Culture and the Pandemic

According to Hofmann (2014) and Hofmann et al. (2016), as IER strategies are directly linked to societal conventions and expectations, the influence of cultural context also needs to be considered. Based on a study on culture and social support, Taylor et al. (2004) reported that Asians and Asian Americans (particularly of East Asian heritage such as Korean, Chinese and Japanese) use lesser social support for coping with stress

than European Americans. One reason for this is that the East Asian cultural norms seem to downcast active engagement of their social support network to deal with stress (Taylor et al., 2004) as it is possible that Asians and Asian Americans have more implicit social support available for them than European Americans (Kim et al., 2008). People belonging to Asian cultures may also believe that there should not be a need to ask for social support explicitly as needs for support should be provided and expected from close ones prior to seeking social support explicitly (Kim et al., 2008).

However, the study by Liddell and Williams (2019) that undertook Hofmann and colleagues' (2016) framework of IER found that investing in IER might be more advantageous for East Asian people when threatened by a stressful event. More specifically, the East Asian group reported higher engagement in perspective taking and social modeling (Liddell & Williams, 2019). As the East Asian group represent a collectivistic culture that values social interconnectedness, they reported higher usage of IER strategies than the Western European group as the strategies are consistent with the cultural context and preferences of East Asians (Liddell & Williams, 2019). This is a particularly relevant consideration as the culture in Southeast Asia also adopts collectivistic cultural views. Hence, IER can be considered beneficial for the Malaysian cultural context.

Another point to consider is that the social isolation during lockdown circumstances of the COVID-19 pandemic itself became a risk factor for mental health problems (Lisitsa, 2020). In this period when people should benefit more from social support, young adults were lonelier than older adults and this was met with lower social support seeking but increased usage of social media (Lisitsa, 2020). This presented a complicated relationship as prior research indicates that social media is associated with both increased social support and increased loneliness. Increased social support suggests that social media has an adaptive support seeking function, however, results of the study

by Lisitsa (2020) suggests that the reason for increased loneliness is due to passive social media use of the participants rather than active use for other participants who may have had social support seeking motives (Lisitsa, 2020). The lower usage of social support due to the pandemic is also reflected among Malaysian university students (Kamaludin et al., 2020).

After more than a year and a half since Malaysia faced many movement lockdowns or ‘Movement Control Orders (MCOs)’ during the pandemic, the cross-sectional online study by Woon et al. (2021) on university students found that after the end of the movement lockdown, higher degree social support by friends and family was linked with lower depressive symptoms. They suggest that as most students lived with their families throughout the MCOs, people were more caring towards their family members and shared their feelings with them, facilitating increase in perceived family support (Woon et al., 2021). This form of social support is in line with the fact that people belonging to Asian cultures would rather rely on support from close others as they generally have more implicit support available to them (Kim et al., 2008).

As social support has been the closest example in comparison to IER, the study by Tamir et al. (2007) offers the closest comparison as they found that incremental believers that sought more social support demonstrated fewer depressive symptoms. Furthermore, as it is reported that the IER strategies are congruent with the Asian cultural context (Liddell & Williams, 2019), investigating how young adults use IER strategies in this study is valuable. Therefore, this study proposes the following mediation hypothesis between beliefs about emotion and the DVs with the IER strategies:

H5c: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between entity beliefs and depressive symptoms.

H5f: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between entity beliefs and anxiety symptoms.

H5i: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between entity beliefs and well-being.

This study also proposes the following mediation hypothesis between incremental beliefs and the DVs with the IER strategies:

H6c: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between incremental beliefs and depressive symptoms.

H6f: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between incremental beliefs and anxiety symptoms.

H6i: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between incremental beliefs and well-being.

2.9 The Present Study and Proposed Model

From the literature, it was found that young adults that suffer with more entity beliefs indicate lower usage of reappraisal compared to incremental believers. In fact, it was found that reappraisal usage mediates the relationship between implicit beliefs about emotion, well-being and depressive symptoms. It is also valuable to study both reappraisal and suppression as they are more needed to understand in the Asian context due to limited studies and also to understand the potential benefit they hold for people in interdependent cultures.

With that, several problems and knowledge gaps were identified upon viewing the literature. Firstly, the nature of the handful of studies on beliefs about emotions in relation

to ER strategies and mental health (Tamir et al., 2007; De Castella et al., 2013; Ford et al., 2018) is such that they primarily skew their discussion on holding entity beliefs. There also seems to be a lack of discussion on incremental beliefs although it is briefly discussed in some of these studies. Secondly, the relationship between implicit beliefs and anxiety symptoms is also under-explored compared to depressive symptoms and well-being (De Castella et al., 2013; Ford et al., 2018). Kneeland et al. (2016), which studied social anxiety, suggested that clarifying how beliefs about controllability of emotion could be associated with regulatory ER strategies to deal with social anxiety is crucial. This is because the usage of particular emotion regulatory strategies like reappraisal have been the focal point of conceptualizations of social anxiety, in addition to treatments for social anxiety (Jamieson et al., 2013; Kneeland et al., 2016).

Thirdly, although emotion regulation is both personal and social, there is a lack of published research that combines both intrapersonal and interpersonal emotion regulation in one study. Fourthly, there is also a lack of published research that combines IER with implicit beliefs about emotion. This is as very few studies have explored this social aspect of emotion regulation and published research on IER is rather new (Loskot, 2019). Additionally, while it was found that more usage of IER is linked with better well-being in both healthy individuals and those with higher symptoms of anxiety and depression, much lesser is known about IER in relation to depressive symptoms, anxiety symptoms and well-being in the scope of young adults. Hence, this present study is the first to explore beliefs about emotion in relation with intrapersonal ER strategies, IER and mental health in the Malaysian context.

As a whole, it can be gathered that beliefs about emotion has a direct influence on mental health where holding either entity or incremental beliefs seem to determine well-being and severity of depressive and anxiety symptoms. Moreover, beliefs about emotion has an influence on the likeliness of regulating emotions. Established literature has also

evidenced that beliefs about emotion can lead to better or worse mental health mediated by the usage or lack of usage of emotion regulation strategies (De Castella et al., 2013; Ford et al., 2018; Somerville et al., 2023). However, further investigation is needed to bridge the gaps detailed here to enrich the emotion regulation literature.

This present study hopes to add value to the literature of mental health studies as data about beliefs about emotion and emotion regulation strategies in relation to mental health in the young adult population is scarce in Malaysia. It also hopes to shed understanding of self-sustainable ways for Malaysians to regulate their emotions. Hence, a survey study focusing on Malaysian young adults between 18 to 30 years old was conducted as it was noted that younger adults seem to be at greater risk of mental health problems (IPH, 2011; IPH, 2015). Moreover, this group was chosen as the prevalence of mental health problems show an increasing trend in this group in Malaysia based on the NHMS (IPH, 2015; IPH, 2020). Finally, this study proposed the usage of emotion regulation strategies to be the mediators whereby beliefs about the controllability of emotion shapes future mental health via the usage of emotion regulation strategies. Figure 2.1 illustrates the model:

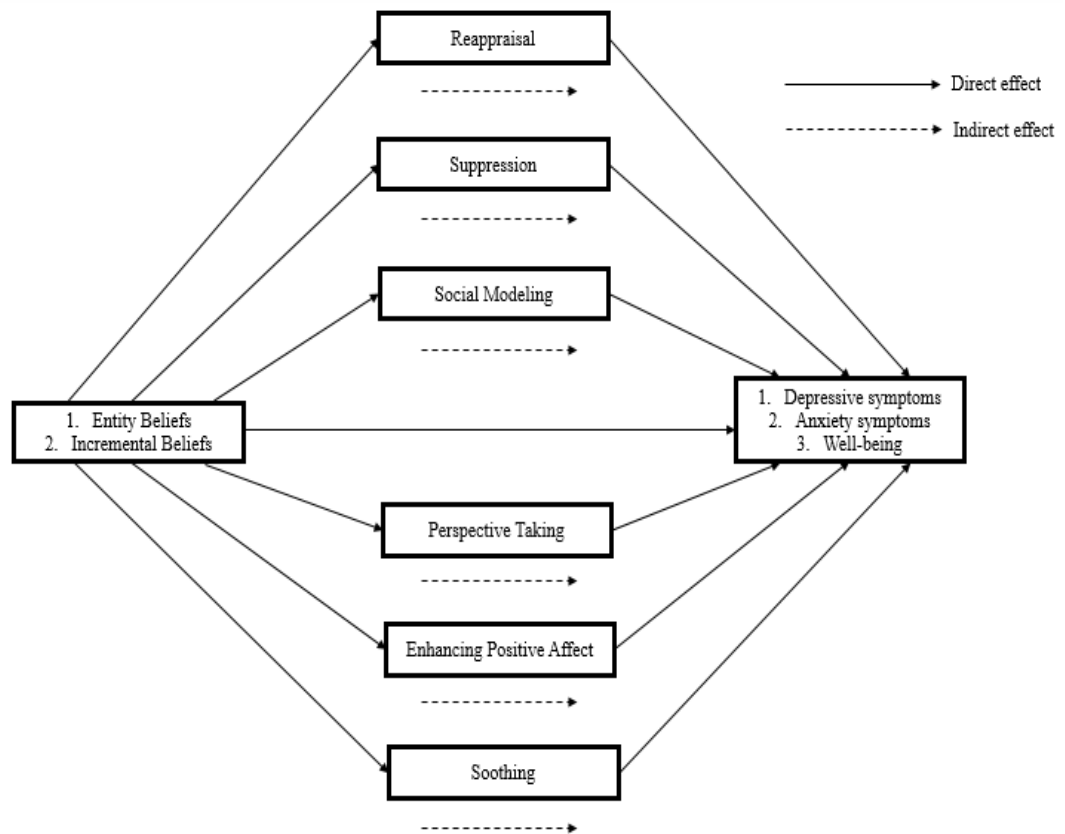


Figure 2.1 *Proposed Mediation Model*

Note. The proposed mediational model whereby beliefs about the controllability of emotion shapes future mental health via the usage of emotion regulation strategies.

Based on Figure 2.1, the model suggests that entity and incremental beliefs predict the likeliness of using emotion regulation strategies (reappraisal, suppression and IER strategies), known as path *a*. Secondly, the likeliness of using emotion regulation strategies (reappraisal, suppression and IER strategies) predicts the outcome variables which are well-being, depressive symptoms and anxiety symptoms, known as path *b*. Thirdly, entity and incremental beliefs predict the outcome variables, well-being, anxiety symptoms and depressive symptoms, known as path *c*. All paths *a*, *b* and *c* are the direct effects of the model, illustrated as the non-dashed arrows. Finally, entity and incremental beliefs predict the outcome variables, well-being, anxiety symptoms and depressive symptoms via the usage of emotion regulation strategies (reappraisal, suppression and the four IER strategies), denoted as path *c'*. In this mediation study, path *c'* indicates the mediation effect which is referred to as the indirect effect, illustrated as the dashed arrows

in the model. This represents the relationship between the IVs (independent variables) and the DVs when the mediators are controlled for, in which the relationship between the IVs and DVs will differ when the mediators are considered (path c').

CHAPTER 3: METHODOLOGY

3.1 Study Design

This quantitative study used a survey design where all questionnaires were given to all participants using the convenience sampling technique. This study was conducted at a single point in time only to observe the relationships between variables in the Malaysian young adult population. This makes it an observational study that is cross-sectional by design where participants are selected based on the inclusion and exclusion criteria (Setia, 2016). It differs from the two other types of observational studies, cohort and case-control. A cohort study is typically conducted on participants with a condition or to receive treatment followed over time, which can be costly and time-consuming (Setia, 2016) whereas, a case-control study selects participants based on the outcome status but is unable to provide an estimation of prevalence (Setia, 2016). Although it is difficult to draw causal relationships from cross-sectional study designs (Setia, 2016), this study design is adopted for this present study as it is population-based. Moreover, while considering the required social distancing measures and lack of direct contact during the pandemic, this design is less time-consuming, inexpensive (Setia, 2016), does not require many resources and can be conducted online.

3.2 Sample Size Calculation

Using the G*Power software, an A priori power analysis under the ‘F tests’ test family and statistical test, ‘Linear multiple regression: Fixed model, R^2 deviation from zero’ was chosen to calculate the estimated sample size. The input parameters entered were a) effect size, $f^2=0.15$ b) type I error rate (α err prob)=0.05, c) power value=0.95 and d) the number of predictors=8. The estimated effect size, f^2 , was calculated using the formula suggested in the G*Power manual: $f^2=R^2/1-R^2$. The R^2 value of 0.13 was chosen from the study by De Castella et al. (2013) and produced the medium effect size, $f^2=0.15$. This is consistent with Ford et al. (2018) who also estimated a medium effect size with 5

predictors. In this present study, there are 8 predictors which represent the two independent variables and six mediators. The calculation generated an estimated total sample size of $n=160$. Upon assuming a 20% attrition rate, the total sample size for recruitment was rounded up and finalized as $n=200$.

3.3 Participants

A total of 223 participants were recruited through online platforms such as online announcement and social media postings (i.e Facebook, Instagram). There were 7 participants whose data were removed as they did not meet the inclusion criteria. Therefore, the final number of participants was $N=216$ aged between 18-30 years ($M=22.48$, $SD=2.94$). Among them, 57 are males (26.4%), 156 are females (72.2%) and 3 identified as non-binary (1.4%). Table 3.1 displays their demographics:

Table 3.1
Demographic Details of Participants (N=216)

Demographics	<i>n</i>	%
Gender		
Female	156	72.2
Male	57	26.4
Non-binary	3	1.4
Ethnicity		
Chinese	105	48.6
Malay	80	37.0
Indian	22	10.2
Others	9	4.2
Highest education level		
Undergraduate degree	123	56.9
Pre-university	55	25.5
Master's Degree	23	10.6
SPM/O-level/alike	10	4.6
PhD or alike	3	1.4
Professional qualification	2	1.0
Student status		
Full-time student	176	81.5
Not a student	33	15.3
Part-time student	7	3.2
Employment status		
Not employed	124	57.4
Part-time employee	38	17.6
Full-time employee	32	14.8
Looking for employment	22	10.2

Note. n =sample size for each criteria

The inclusion criteria for participation were Malaysians aged between 18-30 years old with a minimum qualification in English proficiency (i.e. SPM or O-levels) who may include full-time/part-time students, full-time/part-time working adults, non-students, non-working adults or full-time/part-time students who may also be working full-time/part-time. Participants of all ethnicities (i.e Malay, Chinese, and more) were included to represent the Malaysian sample. Non-Malaysians and those with incomplete data were excluded from the study. The inclusion and exclusion criteria were detailed in the participant information sheet and statement of consent (see Appendix A).

3.4 Measures

The 4-item Implicit Theories of Emotion Scale (ITES). This questionnaire was developed by Tamir et al. (2007) which consists of four items on beliefs about the controllability of emotions (see Appendix D). The ITES developed by Tamir et al. (2007) is an adaptation from the Implicit Theories of Intelligence Scale by Dweck (1999) which measured the fixed nature of intelligence. Tamir et al. (2007) adjusted the scale by Dweck (1999) to measure the general beliefs about the controllability of emotions.

As implicit beliefs have been traditionally measured in third-person perspective (i.e. asking people to indicate how much they agree with statements describing an attribute as controllable or uncontrollable), De Castella et al. (2013) pointed out that it is rather general and does not measure personal beliefs (i.e asking people to indicate how much they agree with statements describing an attribute about *their own self* as controllable or uncontrollable). Hence, the modified version of the ITES scale used in De Castella et al. (2013) measured in first-person perspective is used in this study to determine personal beliefs.

The scale has two items measuring incremental beliefs (1. “I can learn to control my emotions.” 2. “If I want to, I can change the emotions that I have.”) and two items measuring entity beliefs (3. “The truth is, I have very little control over my emotions.” 4.

“No matter how hard I try, I can’t really change the emotions that I have.”). The items are rated on a 5-point Likert scale where 1= ‘strongly disagree’ to 5= ‘strongly agree’. The scoring procedure is such that the incremental or entity belief items can be reverse-scored and averaged. The unmodified 4-item ITES showed good internal consistency ($\alpha = .75$) when entity belief items were reverse-scored and averaged (Tamir et al., 2007) and the modified 4-item ITES showed good internal consistency ($\alpha = .79$) when incremental belief items were reverse-scored (De Castella et al., 2013). As both entity and incremental beliefs are explored in this present study, both the incremental and entity belief items were reverse-scored and averaged to investigate these two variables.

Emotion Regulation Questionnaire (ERQ). This questionnaire was originally developed by Gross and John (2003) that specifically measures two types of emotion regulation strategies which are cognitive reappraisal and expressive suppression (see Appendix E). The survey contains 10-items with six items measuring cognitive reappraisal and four items measuring expressive suppression. The items are rated on a 7-point Likert scale where 1= ‘strongly disagree’ to 7= ‘strongly agree’. Research indicates that the survey is internally consistent with values ranging from .83 to .86 (Moscovitch et al., 2011) and shows strong convergent and discriminant validity (Gross & John, 2003; De Castella et al., 2013). The average internal consistency for cognitive reappraisal is $\alpha=.79$, and expressive suppression is $\alpha=.73$.

Interpersonal Emotion Regulation Questionnaire (IERQ). This questionnaire was originally developed by Hofmann et al. (2016) that measures interpersonal emotion regulation in terms of how individuals regulate their own emotions through others. This survey outlines four strategies that contain five items for each strategy, giving a total of 20 items (see Appendix F). The four strategies are: *Enhancing Positive Affect*, *Perspective Taking*, *Soothing*, and *Social Modeling* (Hofmann et al., 2016). All items on these four strategies are rated on a 5-point Likert scale from 1= ‘not true for me at all’ to 5=

‘extremely true for me.’ The scoring instructions are such that all the items are forward scored. The higher scores indicate how true each item applies to the rater. This scoring was done by Hofmann et al. (2016) that showed good internal consistency for each of the four factors within the IERQ that include *Social Modeling* ($\alpha = .93$), *Perspective Taking* ($\alpha = .91$), *Enhancing Positive Affect* ($\alpha = .89$), and *Soothing* ($\alpha = .94$). Hofmann et al. (2016) also reported that the IERQ showed good convergent and discriminant validity.

Warwick-Edinburgh Mental Well-Being Scale (WEMWBS). This survey was originally developed by Tennant et al. (2007) who aimed to build on previous scales to capture a wide conception of well-being, that includes psychological functioning, affective-emotional aspects and cognitive-evaluative dimensions in a form that is short enough to be used in population-level surveys. The survey encompasses 14-items that covers mental well-being including both hedonic and eudaimonic aspects, positive affect, satisfying interpersonal relationships and positive functioning (Tennant et al., 2007). The scale is intended to measure mental well-being experience over the last two weeks (see Appendix G).

All the items are rated on a 5-point Likert scale from 1= ‘none of the time’ to 5= ‘all of the time’. The scores range from 14 to 70, in which a higher score reflects a higher level of mental well-being. Tennant et al. (2007) have reported that the WEMWBS has good internal consistency ($\alpha = .89$ for student sample and $\alpha = .91$ for population sample) and test-retest reliability at one week was high (0.83). The scale also showed good content validity and construct validity as the scale measures a single underlying concept (Tennant et al., 2007). Criterion validity demonstrated that the scale is capable of discriminating between population groups in a way that is consistent with other population surveys (Tennant et al., 2007). The scale also showed positive correlations with related constructs (convergent validity), and was negatively correlated with opposite concepts (discriminant validity) (Tennant et al., 2007).

Patient Health Questionnaire-9 (PHQ-9). This survey was originally developed by Kroenke et al. (1999) to measure depressive symptoms of individuals over the last two weeks (see Appendix H). The survey is based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) depression criteria that consists of 9 items which are rated on a 4-point scale from 0= 'not at all' to 3= 'nearly every day'. As a severity measure, the PHQ-9 score can range from 0 to 27. The PHQ-9 has been extensively used by many clinical studies, hospitals and as part of national mental health survey data collection questionnaire across many countries, such as the NHMS in Malaysia. The PHQ-9 has shown good internal consistency ($\alpha = .85$) and test-retest reliability (0.87) (Zhang et al., 2013). The PHQ-9 also demonstrated good convergent validity with related constructs (Kim & Lee, 2019).

Generalized Anxiety Disorder-7 (GAD-7). This survey was originally developed by Spitzer et al. (2006) to measure anxiety symptoms of individuals over the last two weeks (see Appendix I). This survey consists of 7 items which are rated on a 4-point scale from 0= 'not at all' to 3= 'nearly every day'. The GAD-7 score can range from 0 to 21. Like the PHQ-9, the GAD-7 has also been extensively used by many clinical studies, hospitals and as part of national mental health survey data collection questionnaire across many countries, such as the NHMS in Malaysia. The GAD-7 shows excellent internal consistency ($\alpha = .92$), good test-retest reliability (Spitzer et al., 2006), good convergent and discriminant validity (Johnson et al., 2019).

3.5 Procedure

This study was approved by the Research Ethics Committee (Ethics Approval No.: PGSUREC2021/038). Firstly, participants were recruited through online platforms such as online announcement and social media postings (i.e Facebook, Instagram). Each participant was presented with a participant information sheet and statement of consent (see Appendix A) that explained the aims of the study, their rights as a participant such

as the confidentiality of their responses, duration of answering the surveys, and the contact details of the researcher and the researcher's supervisors. Upon obtaining their consent, participants filled in a demographic details sheet (see Appendix B) that asked about their basic information (i.e. age, gender, ethnicity and current education level) before attempting the surveys individually. Then, the participants were shown the six surveys online (see Appendix D to I). Permission to use the surveys were granted by the original authors (see Appendix K to P) except for the depressive symptoms survey (PHQ-9) and anxiety symptoms survey (GAD-7) as they do not require permission. Upon completely answering all the surveys, participants were debriefed and provided contact information for any counselling or mental health services available and were thanked for their participation (see Appendix C). They were also given contact details of the researcher and the researcher's supervisors again if they had any inquiries about the study. Finally, participants were provided with website links to two free e-books as mental health resources (see information about e-books in Appendix J) at the end of completing the study. The total time taken to complete the surveys was between 15 to 20 minutes for each participant. As no personal information was needed by the participants, all information gathered remained anonymous and confidential. To maintain confidentiality, the participants' data stored in the system was only accessed using a password solely known by the researcher.

3.6 Pilot Study

Before conducting the actual study, a pilot study was conducted for reliability and content validity analyses of the questionnaires. The procedure, inclusion and exclusion criteria for participants in the pilot study were identical to the main study with the additional component of questions for the content validity analysis. The purpose of the reliability analysis was to assess whether the questionnaires used reflect the constructs they intend to measure as they were distributed to a diverse sample population of

Malaysian students. The content validity analysis was solely for the IERQ with the purpose of attaining participant feedback to assess the relevance of the IERQ as it contains items that are social in nature. Participants were also asked for their comments or suggestions on the items in the IERQ and the questionnaire as a whole. As lockdown restrictions and social distancing measures were still observed due to the pandemic, the content validity analysis for this survey was to determine whether it appears to measure what it intends in relevance to these circumstances of the pandemic. The feedback form for content validity for the IERQ can be found in Appendix Q.

A total of 38 participants joined the pilot study, aged between 20-29 years old ($M=24.50$, $SD=2.50$). Among them, 9 are males (23.7%) and 29 are females (76.3%). To assess reliability, the surveys were analysed for internal consistency using the Statistical Package for Social Sciences (SPSS 21.0[®]) software. Cronbach's alpha (α) scores that is at least .7 were expected as it indicates good internal consistency. For short scales like the 4-item ITES, it is more suitable to report the mean inter-item correlation (Pallant, 2016) as it is common to get low Cronbach's α scores (such as .5) for scales with lower than 10 items (Pallant, 2016). The recommended optimal range for inter-item correlation is .2 to .4 (Briggs & Cheek, 1986). The last column on Table 3.2 shows the α scores for each scale or survey.

Table 3.2

Correlations between Predictor Variables and Cronbach's α Results for Reliability Analyses

Variable	1	2	3	4	5	6	7	8	α
1. IB ^a	-	-1.00*	.44*	-.05	.21*	.01	.12	-.004	.56/.23 [†]
2. EB ^b		-	-.44*	.05	-.21*	-.01	-.12	.004	.56/.23 [†]
3. CR			-	.31*	.47*	.43*	.36*	.24*	.90**
4. ES				-	.03	.32*	-.03	-.06	.90**
5. SM					-	.54*	.61*	.47*	.88**
6. PT						-	.47*	.52*	.80**
7. PA							-	.45*	.77**
8. ST								-	.87**
9. WEMWBS									.95**
10. PHQ-9									.90**
11. GAD-7									.92**

Note. IB=Incremental Beliefs; EB=Entity Beliefs; CR=Cognitive Reappraisal; ES=Expressive Suppression; SM=Social Modeling; PT=Perspective Taking; PA=Enhancing Positive Affect; ST= Soothing; WEMWBS=Mental well-being; PHQ-9=Patient Health Questionnaire-9; GAD-7=Generalized Anxiety Disorder-7. ^aItems on entity beliefs were reverse scored and averaged to reflect Incremental Beliefs. ^bItems on incremental beliefs were reverse scored and averaged to reflect Entity Beliefs. * $p < .001$. **Values reflect good internal consistency. [†]Values reflect the mean inter-item correlation.

Secondly, content validity analysis was conducted to assess the relevance of the IERQ. Content validity was measured at the item and scale-level using the I-CVI (item-level content validity index) and S-CVI/Ave (scale-level content validity index, averaging calculation method) as suggested by Polit and Beck (2006). Participants were asked to give their content validity ratings for all 20 items in the IERQ based on these four criteria: i) Relevance, ii) Simplicity, iii) Clarity and iv) Ambiguity. For each criterion, participants scored them between 1 (not relevant) to 4 (very relevant). The I-CVI score should be at least 0.78 (Lynn, 1986) and the S-CVI/Ave score should be at least 0.90 (Polit & Beck, 2006).

The way that the I-CVI is calculated is such that the participants in agreement (those who rated relevance of 3 or 4) is divided by the total number of participants

(Yusoff, 2019). For example, if 35 out of 38 participants rated 3 or 4 for an item, then the I-CVI would be $35/38=0.92$. Secondly, the S-CVI/Ave is obtained by calculating the average of the I-CVI scores which is the sum of the I-CVI scores for all items divided by the number of items (Polit & Beck, 2006). For this study, it would be the sum of the I-CVI scores of all 20 items divided by 20. It is best to conceptualize the S-CVI/Ave as the average I-CVI scores as it places focus on average item quality instead of average performance by the experts (Polit & Beck, 2006) or in this case, the participants.

Polit and Beck (2006) recommend that the range of I-CVI scores should be reported, as seen in Table 3.3 which shows the I-CVI and SCVI/Ave scores for all items in the IERQ:

Table 3.3

Results of Content Validity Analyses for the IERQ

Criteria/Domain	SM	PT	PA	ST	Total SCVI/Ave
Relevance	0.92-0.97	0.74-0.82	0.82-0.90	0.84-0.92	0.86
Simplicity	0.87-0.95	0.71-0.82	0.76-0.90	0.76-0.92	0.84
Clarity	0.87-0.95	0.79-0.82	0.82-0.92	0.74-0.92	0.85
Ambiguity*	0.71-0.76	0.79-0.90	0.63-0.84	0.71-0.84	0.77

Note. Results of the range of I-CVI and SCVI/Ave scores for each criteria under the 4 domains in the IERQ. ; *SM*=Social Modeling; *PT*=Perspective Taking; *PA*=Enhancing Positive Affect; *ST*= *Soothing* *Scores were reverse-scored to reflect that higher ratings meant lower ambiguity.

The second part of the feedback form on the content validity for the IERQ included comments on each item and overall comments and suggestions about the questionnaire. As the purpose of the content validity analysis was to assess the relevance of the IERQ in the context of the pandemic, the comments and suggestions by participants were examined to finalize whether items that had <0.78 could be kept, modified or removed. Comments for the items, overall comments for the entire questionnaire and suggestions for improvements were received. Table R1 (see Appendix R) illustrates the comments per each item received by participants and Table R2 (see Appendix R) shows the overall comments and suggestions for improvement by the participants for the IERQ.

After examining the comments based on Table R1, a few observations were made. Firstly, some comments were responses to the said items. This occurred for 8 items (no. 3, 8, 18, 7, 10, 14, 17 and 20). These comments reflected what the participants thought about the items presented or were personal opinions. There were 2 comments for item number 13 which were rhetorical questions posed in response to the item. Thirdly, some participants offered their own re-wording of the items. This occurred for 5 items (no. 9, 12, 16, 19 and 11). The suggested re-wordings of items were merely re-arrangement of sentence structure as the suggestions given still maintained the same words used without changing the meaning of the items. Fourthly, there were 2 comments for item number 6 which asked for the item to be re-worded without offering a suggestion. Fifthly, there was 1 positive comment under item 19 indicating support of the domain. Lastly, for 5 items (no. 2, 4, 1, 5, 15), no comments were given.

From these observations, the comments for each item were not related to changing the nature of the items in the context of the pandemic. Upon reviewing the comments, it is found that the personal opinions, rhetorical questions and re-wordings were not actionable points to grant modification of the items. The comments showed that participants comprehended the meaning of the items and no suggestions were given to change the meaning of the items in any way nor were there suggestions to alter the items to suit the context of the pandemic. This is important as the comments showed that the items in the IERQ did not pose any issues even when applied in the context of the pandemic.

Based on overall comments in Table R2, out of 38 participants, there were 17 positive comments in support of the IERQ and there were 12 participants with no comment. There were 6 participants who commented that the survey was long and 1 participant who mentioned that the questions may be slightly repetitive. Thirdly, there were 2 comments with regards to the survey design. Moreover, the suggestions for

improvement based on Table R2 show that out of 38 participants, there were 25 that did not provide suggestions, there were 3 positive or neutral responses to the survey. There were 4 suggestions by participants that were unrelated to changing the social nature of items to suit the context of the pandemic. There were 6 more comments on the length of the questionnaire, sentence structure, repetition and survey design similar to the overall comments and item comments.

The comments and suggestions on the length of the questionnaire, repetition and the survey design concerns the way that the survey was presented. As it is a survey that was taken from a previous study that had already undergone testing and validation (Hofmann et al., 2016), these properties are fixed and changing a survey that should be administered in its original form will create survey errors or response biases that may compromise the reliability or validity of the survey. Furthermore, as Liddell and Williams (2019) found that East Asians reported higher engagement in domains from the IERQ such as social modeling and perspective taking, removing items from these domains would diminish valuable data that may benefit this present study.

Overall, the results from the pilot study showed that the questionnaires have good or excellent reliability, with all Cronbach's α values $>.7$ and accepted value of the mean inter-item correlation (0.23) reported for entity beliefs and incremental beliefs under the 4-item ITES. For the content validity of the IERQ, although there were some I-CVI scores that were <0.78 , the comments, suggestions and feedback by participants were taken into account and none were related to changing the meaning or context of the social nature of the items. Moreover, there were also many positive comments in support of the IERQ. Due to these reasons, the researcher and research supervisors came to a consensus that all items in the questionnaire need not be modified and all items in the IERQ were chosen to be retained.

3.7 Study Analysis

This study used a mediational analysis in which the data was analysed using the PROCESS version 4.1 by Andrew Hayes available in SPSS 21.0[®] via Sunway University's vLab software. As it was hypothesized that the usage of emotion regulation strategies will mediate the relationship between beliefs about emotion and mental health (well-being, anxiety symptoms and depressive symptoms), a mediational model was proposed for this study. From Figure 2.1, the model suggests that entity and incremental beliefs predict the likeliness of usage of emotion regulation strategies (reappraisal, suppression and IER strategies), denoted as path *a*. Secondly, the likeliness of using emotion regulation strategies predicts the outcome variables, well-being, anxiety symptoms and depressive symptoms, denoted as path *b*. Thirdly, the model suggests that entity and incremental beliefs predict the outcome variables, well-being, anxiety symptoms and depressive symptoms via emotion regulation strategies, denoted as path *c'*.

The simple mediation analyses produced the significance values (*p*-values), beta (*b*-values) the effect sizes (R^2 values), confidence interval (CI) values and the total, direct and indirect effects of the model. The direction of the *b*-values produced from the analyses determined if they met the hypotheses of this present study. The direct effect refers to the direct relationship between the IVs to the DVs in the absence of the mediators. On the other hand, the indirect effect, also known as the mediation effect, refers to the relationship between the IVs and the DVs when the mediators are controlled for, in which the relationship between the IVs and DVs differ when the mediators are considered (path *c'*).

The indirect effect is important as the relationship between the IVs and the DVs, that is the combined effects of paths *a* and *b*, should be reduced when the mediators are incorporated in the model than when it is not (Field, 2018). If the confidence intervals

using bootstrap do not contain zero, then there is mediation. This estimation of the indirect effect and its confidence interval is becoming common and preferable (Field, 2018). In fact, it is recommended to compute confidence intervals for the indirect effect using bootstrap methods as it allows to simply report the degree of mediation in the data (Koopman et al., 2014; Field, 2018).

3.8 Mental Health Resources

For this present study, all participants were recruited to answer the surveys online at a single point in time only. Participants were not given monetary compensation however, upon completing the study, they were given website links to two free e-books on mental health (see Appendix J) as resources for mental health for their participation in the study. The information provided in the e-books were specifically chosen and approved by the supervisors.

CHAPTER 4: RESULTS

4.1 Preliminary Analyses

Before conducting the mediational analyses, preliminary analyses were performed. The preliminary analyses were conducted 3 times as each DV could only be entered one at a time on SPSS 21.0[®]. The three DVs are well-being, depressive symptoms and anxiety symptoms. The assumptions for mediation included: i) checking for outliers and influential cases, ii) testing the assumption of linearity and normality of residuals, iii) testing the assumption of multicollinearity, iv) checking for homoscedasticity of residuals.

4.1.1 *Checking for Outliers and Influential Cases*

Firstly, under well-being as the DV, the Standardized Residual values were between -3.70 and +2.83 and there was one outlier detected. However, the Cook's Distance values were between 0.00 (Minimum) and 0.11 (Maximum) which are values that are not >1, suggesting that there are no major problems with cases. Therefore, the outlier was not removed. Secondly, under depressive symptoms as the DV, the Standardized Residual values were between -3.09 and +2.73 and there was also one outlier detected. However, the Cook's Distance values were between 0.00 (Minimum) and 0.14 (Maximum) which are values that are not >1, suggesting that there are no major problems with cases. Therefore, the outlier was not removed. Thirdly, under anxiety symptoms as the DV, the Standardized Residual values were between -2.86 (Minimum) and +2.22 (Maximum), in which no cases were above +3 or below -3, indicating that no outliers or unusual cases were detected. The Cook's Distance values were between 0.00 (Minimum) and 0.06 (Maximum) which are values that are not >1, suggesting that there are no major problems with cases.

4.1.2 Testing the Assumption of Linearity and Normality of Residuals

The points in the P-P plot for all three DVs (well-being, depressive symptoms and anxiety symptoms) are all fairly close to the line, suggesting a linear relationship and no major deviations from normality. On the other hand, the histograms for all the three DVs also look fairly normally distributed. Hence, this assumption is met.

4.1.3 Testing the Assumption of Multicollinearity

For this assumption, there are three factors to look into which are a) that the tolerance should not be less than 0.2, b) the VIF values should not be above 10 and c) that the correlation between predictor variables should be <0.9 , (Field, 2018). Firstly, Table 4.1 shows the tolerance and VIF values under all the DVs:

Table 4.1

Tolerance and VIF values

Predictors	Tolerance ^a	VIF ^b
Entity Beliefs	0.73	1.37
Reappraisal	0.52	1.91
Suppression	0.72	1.39
Social Modeling	0.48	2.07
Perspective Taking	0.48	2.08
Enhancing Positive Affect	0.57	1.77
Soothing	0.62	1.62

Note. ^a Tolerance should not be less than 0.2. ^b VIF values should not be above 10.

All tolerance values are not less than 0.2 and the VIF values are not more than 10, therefore they do not suggest multicollinearity and this assumption is met. Thirdly, Table 3.2 displays the Pearson correlation values between predictor variables. The correlation between all the predictor variables are <0.9 except for the relationship between incremental beliefs and entity beliefs. This is expected as they both represent reverse scored versions of the 4-item ITES.

4.1.4 Checking for Homoscedasticity of Residuals

The residuals in the scatterplot matrices for all three DVs (well-being, depressive symptoms and anxiety symptoms) were roughly rectangularly distributed in which most of the scores were saturated along the 0 point. Thus, this assumption is not violated.

4.2 Mediation Analyses

The mediation analyses were conducted 6 times (2 IVs x 3 DVs) through the PROCESS tool on SPSS 21.0® (with a bootstrap CI based on 5000 samples) as one IV and one DV only could be run at a time with all the mediators entered simultaneously. Model 4 was selected on the PROCESS tool to run the mediation analyses. Table 4.2 represents the results for path *a* which are the main effects of the relationship between the IVs with the mediators. Table 4.3 shows the results for path *b* which are the main effects of the relationship between the mediators and the three DVs. The results of the direct and total effects are presented in Table 4.4. The direct effect refers to the direct relationship between the IVs to the DVs when the mediators are in the model. The total effect is the effect of the IVs on the DVs when the mediators are not in the model. Table 4.5 shows the results for path *c'* which represents the mediation effect. A summary of the hypotheses testing outcomes for paths *a*, *b* and *c'* can be found in Table S1 (see Appendix S) and Table S2 (see Appendix S).

Table 4.2
Results for Path a of the Mediation Analyses

Variables	Entity Beliefs to Meds		Incremental Beliefs to Meds	
	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>
Reappraisal	-0.648	<.001*	0.648	<.001*
Suppression	0.079	0.509	-0.079	0.509
SM	-1.027	0.002*	1.027	0.002*
PT	-0.080	0.859	0.080	0.859
PA	-0.570	0.090	0.570	0.090
ST	0.026	0.953	-0.026	0.953

Note. Meds=Mediators; SM=Social Modeling; PT=Perspective Taking; PA=Enhancing Positive Affect; ST=Soothing. **p* <.001 or <0.05.

Table 4.3*Results for Path b of the Mediation Analyses*

Meds/DV	Depressive Symptoms	
	<i>b</i>	<i>p</i>
Reappraisal	-0.079	0.880
Suppression	1.446	0.0001*
SM	0.291	0.071
PT	-0.264	0.030*
PA	0.001	0.994
ST	0.013	0.906
Meds/DV	Anxiety Symptoms	
	<i>b</i>	<i>p</i>
Reappraisal	-0.086	0.855
Suppression	0.757	0.025*
SM	0.410	0.005*
PT	-0.286	0.009*
PA	-0.033	0.809
ST	0.030	0.755
Meds/DV	Well-being	
	<i>b</i>	<i>p</i>
Reappraisal	2.043	0.003*
Suppression	0.633	0.188
SM	-0.011	0.960
PT	0.705	<.001*
PA	0.289	0.136
ST	0.621	<.001*

Note. Meds=Mediators; DV=Dependent variable; SM=Social Modeling; PT=Perspective Taking; PA=Enhancing Positive Affect; ST=Soothing. * $p < .001$ or < 0.05 .

Table 4.4*Results of the Direct and Total Effects of the Mediation Analyses*

Variables	Incremental Beliefs to DVs		Entity Beliefs to DVs	
	Direct Effect	Total Effect	Direct Effect	Total Effect
	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>
Depressive Symptoms	-5.010*	-4.898*	5.010*	4.898*
Anxiety Symptoms	-4.653*	-4.390*	4.653*	4.390*
Well-being	3.838*	5.306*	-3.838*	-5.306*

Note. DVs=Dependent variables. * $p < .001$.

Table 4.5*Results of the Indirect Effects indicated as Paths c' of the Mediation Analyses*

Variable	Indirect effect of Entity Beliefs to Depressive Symptoms via Meds		Indirect effect of Incremental Beliefs to Depressive Symptoms via Meds	
	<i>b</i>	95% BCI	<i>b</i>	95% BCI
Reappraisal	0.051	[-0.686, 0.832]	-0.051	[-0.834, 0.670]
Suppression	0.115	[-0.241, 0.560]	-0.115	[-0.559, 0.252]
SM	-0.299	[-0.737, 0.034]	0.299	[-0.032, 0.762]
PT	0.021	[-0.278, 0.303]	-0.021	[-0.312, 0.281]
PA	-0.001	[-0.216, 0.214]	0.001	[-0.223, 0.221]
ST	0.0003	[-0.138, 0.126]	-0.0003	[-0.126, 0.142]
	Indirect effect of Entity Beliefs to Anxiety Symptoms via Meds		Indirect effect of Incremental Beliefs to Anxiety Symptoms via Meds	
	<i>b</i>	95% BCI	<i>b</i>	95% BCI
Reappraisal	0.056	[-0.530, 0.669]	-0.056	[-0.695, 0.557]
Suppression	0.060	[-0.140, 0.351]	-0.060	[-0.324, 0.132]
SM	-0.421	[-0.882, -0.079]**	0.421	[0.087, 0.890]**
PT	0.023	[-0.282, 0.319]	-0.023	[-0.325, 0.311]
PA	0.019	[-0.156, 0.233]	-0.019	[-0.242, 0.155]
ST	0.001	[-0.098, 0.114]	-0.001	[-0.119, 0.104]
	Indirect effect of Entity Beliefs to Well-being via Meds		Indirect effect of Incremental Beliefs to Well-being via Meds	
	<i>b</i>	95% BCI	<i>b</i>	95% BCI
Reappraisal	-1.324	[-2.527, -0.282]**	1.324	[0.275, 2.540]**
Suppression	0.050	[-0.150, 0.333]	-0.050	[-0.307, 0.149]
SM	0.011	[-0.546, 0.558]	-0.011	[-0.564, 0.542]
PT	-0.057	[-0.780, 0.656]	0.057	[-0.639, 0.781]
PA	-0.165	[-0.588, 0.069]	0.165	[-0.069, 0.601]
ST	0.016	[-0.597, 0.620]	-0.016	[-0.639, 0.588]

Note. Meds=Mediators; BCI=Bootstrap confidence interval; SM=Social Modeling; PT=Perspective Taking; PA=Enhancing Positive Affect; ST=Soothing. **Indicates mediation effect.

4.2.1 Path a: Results on the Relationship between Beliefs about Emotion and Emotion

Regulation Strategies

To recap, the following hypotheses for path *a* between entity beliefs and the mediators were:

H1a: There is a negative relationship between entity beliefs and reappraisal.

H1b: There is a positive relationship between entity beliefs and suppression.

H1c: There is a positive relationship between entity beliefs and social modeling.

H1d: There is a positive relationship between entity beliefs and perspective taking.

H1e: There is a positive relationship between entity beliefs and enhancing positive affect.

H1f: There is a positive relationship between entity beliefs and soothing.

The results from Table 4.2 shows a significant negative association between entity beliefs and social modeling, $b=-1.027$, 95% BCI [-1.679, -0.375], $t=-3.104$, $p=0.002$, going against H1c. There was also a significant negative association between entity beliefs and reappraisal, $b=-0.648$, 95% BCI [-0.825, -0.472], $t=-7.250$, $p<.001$, supporting H1a. However, entity beliefs did not significantly predict suppression, perspective taking, enhancing positive affect and soothing not supporting H1b, H1d, H1e, H1f.

The following hypotheses for path *a* between incremental beliefs and the mediators were:

H2a: There is a positive relationship between incremental beliefs and reappraisal.

H2b: There is a negative relationship between incremental beliefs and suppression.

H2c: There is a positive relationship between incremental beliefs and social modeling.

H2d: There is a positive relationship between incremental beliefs and perspective taking.

H2e: There is a positive relationship between incremental beliefs and enhancing positive affect.

H2f: There is a positive relationship between incremental beliefs and soothing.

Significant positive associations were found between incremental beliefs with social modeling, $b=1.027$, 95% BCI [0.375, 1.679], $t=3.104$, $p=0.002$ and reappraisal, $b=0.648$, 95% BCI [0.472, 0.825], $t=7.250$, $p<.001$, supporting H2c and H2a. However, incremental beliefs did not significantly predict the usage of suppression, perspective taking, enhancing positive affect and soothing, not supporting H2b, H2d, H2e and H2f.

4.2.2 Path b: Results on the Relationship between Emotion Regulation Strategies and Mental Health

The hypotheses for path *b* between the mediators, anxiety and depressive symptoms were:

H3a: There is a negative relationship between reappraisal and depressive symptoms along with anxiety symptoms.

H3b: There is a positive relationship between suppression and depressive symptoms along with anxiety symptoms.

H3c: There is a negative relationship between social modeling and depressive symptoms along with anxiety symptoms.

H3d: There is a negative relationship between perspective taking and depressive symptoms along with anxiety symptoms.

H3e: There is a negative relationship between enhancing positive affect and depressive symptoms along with anxiety symptoms.

H3f: There is a negative relationship between soothing and depressive symptoms along with anxiety symptoms.

Perspective taking showed significant negative associations to depressive symptoms, $b=-0.264$, 95% BCI $[-0.502, -0.026]$, $t=-2.187$, $p=0.030$ and anxiety symptoms, $b=-0.286$, 95% BCI $[-0.501, -0.071]$, $t=-2.625$, $p=0.009$, supporting H3d. On the other hand, there was a significant positive association between social modeling and anxiety symptoms, $b=0.410$, 95% BCI $[0.125, 0.696]$, $t=2.834$, $p=0.005$, going against H3c. Thirdly, suppression showed significant positive associations to depressive symptoms, $b=1.446$, 95% BCI $[0.716, 2.176]$, $t=3.903$, $p=0.0001$, and anxiety symptoms, $b=0.757$, 95% BCI $[0.098, 1.417]$, $t=2.263$, $p=0.025$, supporting H3b. However, reappraisal, enhancing positive affect and soothing did not significantly predict depressive or anxiety symptoms, not supporting H3a, H3e and H3f and social modeling did not significantly predict depressive symptoms, not supporting H3c.

The hypotheses for path b between the mediators and well-being were:

H4a: There is a positive relationship between reappraisal and well-being.

H4b: There is a negative relationship between suppression and well-being.

H4c: There is a positive relationship social modeling and well-being.

H4d: There is a positive relationship between perspective taking and well-being.

H4e: There is a positive relationship between enhancing positive affect and well-being.

H4f: There is a positive relationship between soothing and well-being.

The results from Table 4.3 shows significant positive associations between reappraisal, $b=2.043$, 95% BCI [0.709, 3.377], $t=3.019$, $p=0.003$, perspective taking, $b=0.705$, 95% BCI [0.397, 1.013], $t=4.457$, $p<.001$ and soothing, $b=0.621$, 95% BCI [0.346, 0.896], $t=4.457$, $p<.001$ with well-being, supporting H4a, H4d and H4f. However, suppression, social modeling, enhancing positive affect did not significantly predict well-being, not supporting H4b, H4c and H4e.

4.2.3 Path c': Results on the Mediation Effect of Emotion Regulation Strategies between Beliefs about Emotion and Mental Health

Figure 4.1, 4.2 and 4.3 illustrate all regression coefficients for the relationships between entity beliefs to the DVs via the mediators.

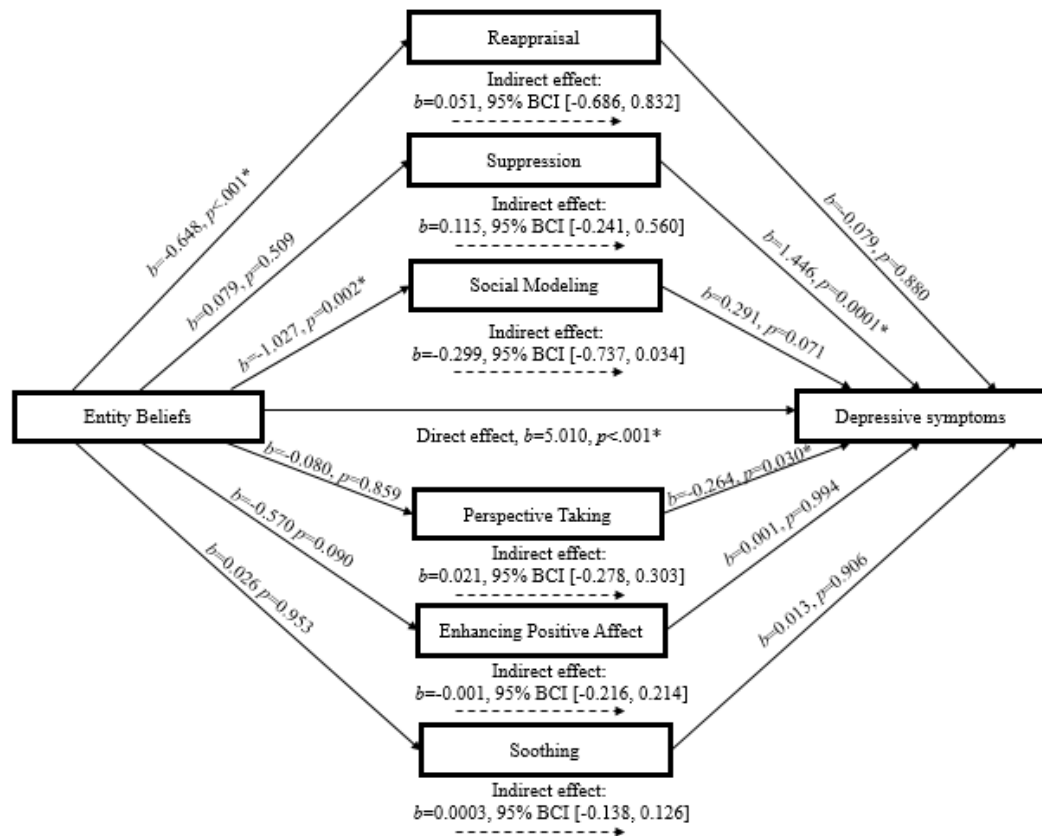


Figure 4.1 *Mediation Model for the Relationship between Entity Beliefs, Depressive Symptoms and the Mediators*

Note. * $p < .001$ or < 0.05

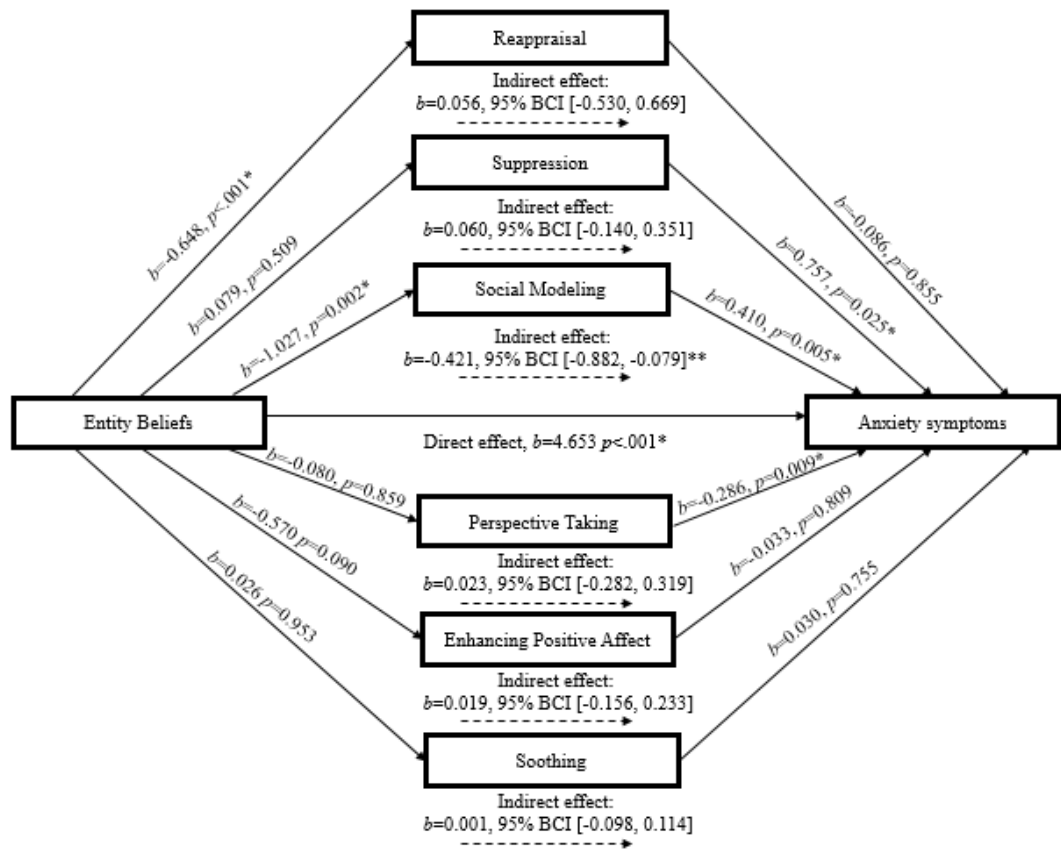


Figure 4.2 Mediation Model for the Relationship between Entity Beliefs, Anxiety Symptoms and the Mediators

Note. * $p < .001$ or < 0.05 **mediation effect

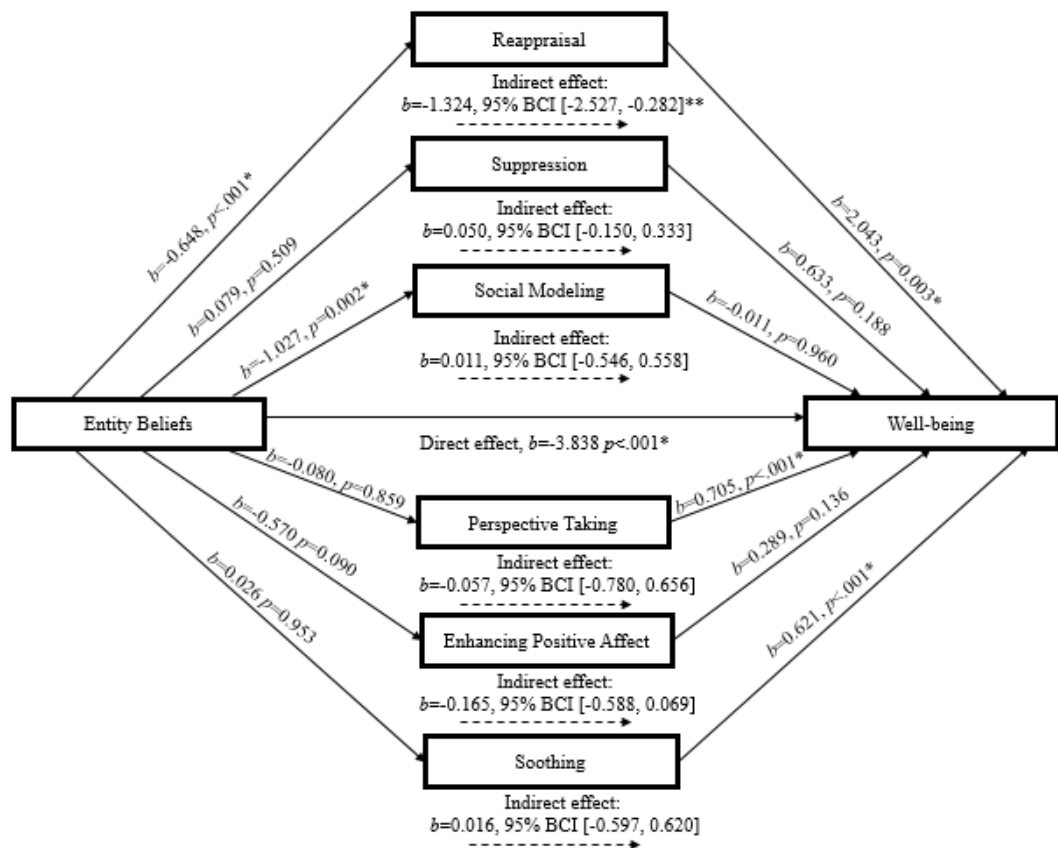


Figure 4.3 Mediation Model for the Relationship between Entity Beliefs, Well-being and the Mediators

Note. * $p < .001$ or $< .05$ **mediation effect

Firstly, the following are the mediation hypotheses between entity beliefs and depressive symptoms:

H5a: Reappraisal will mediate the relationship between entity beliefs and depressive symptoms.

H5b: Suppression will mediate the relationship between entity beliefs and depressive symptoms.

H5c: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between entity beliefs and depressive symptoms.

When the mediators (suppression and perspective taking) are not in the model, the total effect shows a significant positive association between entity and depressive symptoms, $b=4.898$, 95% BCI [3.775, 6.020], $t=8.601$, $p<.001$. The direct effect also

shows a significant positive association between entity beliefs significantly and depressive symptoms even when the said mediators are in the model, $b=5.010$, 95% BCI [3.738, 6.283], $t=7.746$, $p<.001$. However, no mediations were found between entity beliefs and depressive symptoms, not supporting H5a, H5b and H5c.

The following are the mediation hypotheses between entity beliefs with the next DV, anxiety symptoms:

H5d: Reappraisal will mediate the relationship between entity beliefs and anxiety symptoms.

H5e: Suppression will mediate the relationship between entity beliefs and anxiety symptoms.

H5f: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between entity beliefs and anxiety symptoms.

The total effect shows a significant positive association between entity beliefs and anxiety symptoms, $b=4.390$, 95% BCI [3.388, 5.392], $t=8.638$, $p<.001$ when the mediators (suppression, social modeling and perspective taking) are not in the model. Moreover, the direct effect showed a significant positive association between entity beliefs and anxiety symptoms even when the said mediators are in the model, $b=4.653$, 95% BCI [3.504, 5.802], $t=7.982$, $p<.001$. The results found one significant but negative indirect effect of social modeling between entity beliefs and anxiety symptoms, $b=-0.421$, 95% BCI [-0.882, -0.079]. A positive indirect effect was expected, going against H5f.

The following are the mediation hypotheses between entity beliefs and well-being:

H5g: Reappraisal will mediate the relationship between entity beliefs and well-being.

H5h: Suppression will mediate the relationship between entity beliefs and well-being.

H5i: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between entity beliefs and well-being.

The total effect shows a significant negative association between entity beliefs and well-being, $b=-5.306$, 95% BCI $[-7.259, -3.353]$, $t=-5.355$, $p<.001$ when the mediators (reappraisal, perspective taking and soothing) are not in the model. The direct effect also shows a significant negative association between entity beliefs and well-being even when the said mediators are in the model, $b=-3.838$, 95% BCI $[-5.486, -2.190]$, $t=-4.592$, $p<.001$. There is a significant and negative indirect effect of reappraisal between entity beliefs and well-being, $b=-1.324$, 95% BCI $[-2.527, -0.282]$, supporting H5g.

Figure 4.4, 4.5 and 4.6 illustrate all regression coefficients for the relationships between incremental beliefs to the DVs via the mediators.

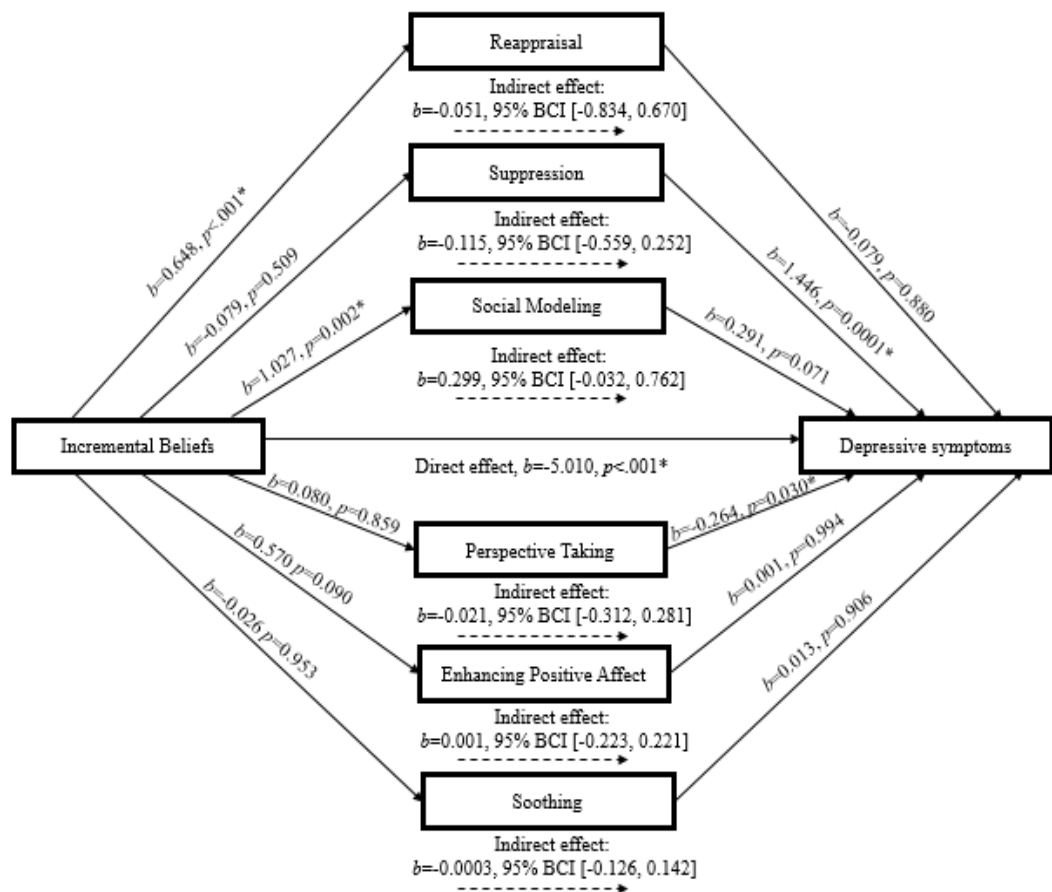


Figure 4.4 Mediation Model for the Relationship between Incremental Beliefs, Depressive Symptoms and the Mediators

Note. * $p < .001$ or < 0.05

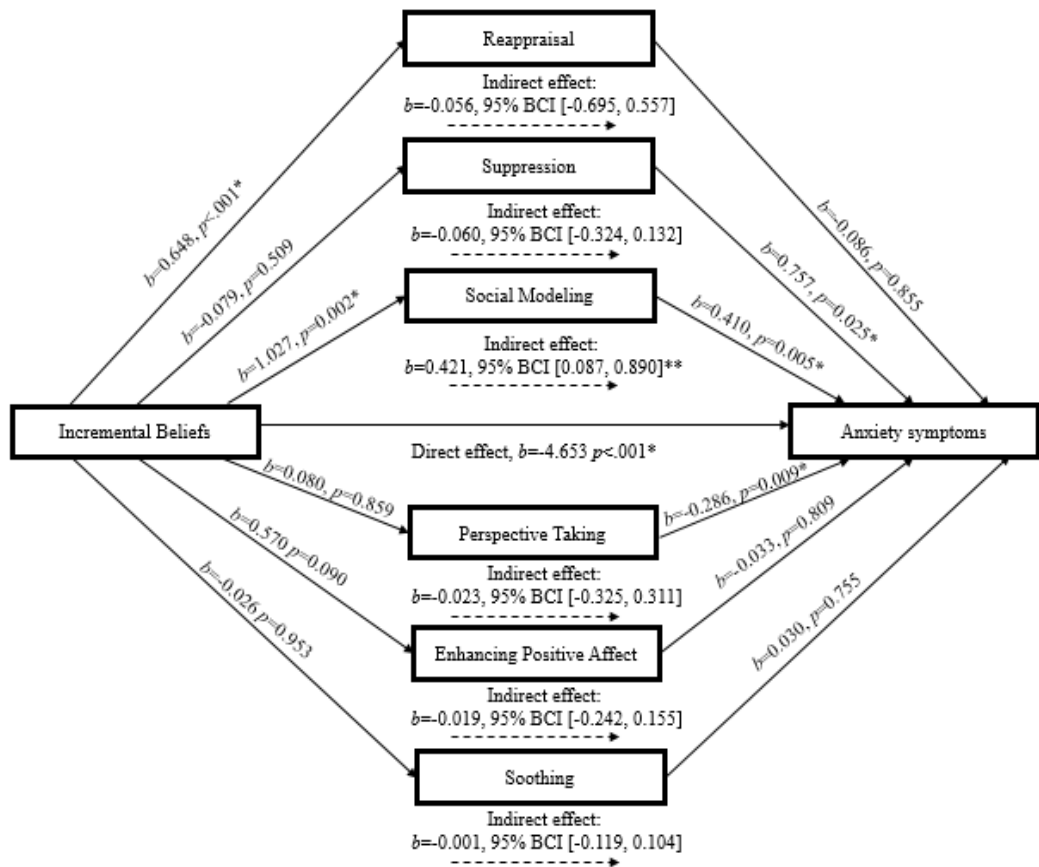


Figure 4.5 *Mediation Model for the Relationship between Incremental Beliefs, Anxiety Symptoms and the Mediators*

Note. * $p < .001$ or < 0.05 **mediation effect

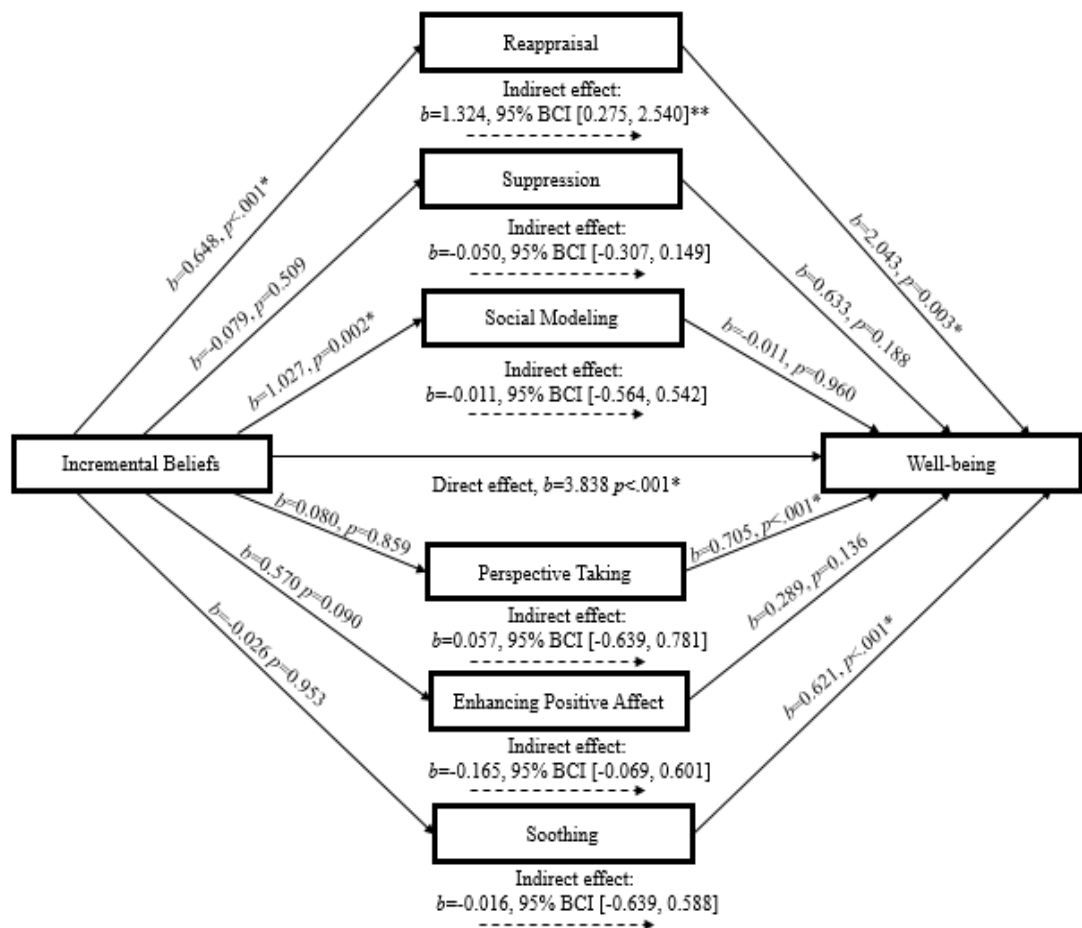


Figure 4.6 Mediation Model for the Relationship between Incremental Beliefs, Well-being and the Mediators

Note. * $p < .001$ or < 0.05 **mediation effect

Firstly, the following are the mediation hypotheses between incremental beliefs and depressive symptoms:

H6a: Reappraisal will mediate the relationship between incremental beliefs and depressive symptoms.

H6b: Suppression will mediate the relationship between incremental beliefs and depressive symptoms.

H6c: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between incremental beliefs and depressive symptoms.

When the mediators (suppression and perspective taking) are not in the model, the total effect shows a significant negative association between incremental beliefs and depressive symptoms, $b=-4.898$, 95% BCI $[-6.020, -3.775]$, $t=-8.601$, $p<.001$. Secondly, the direct effect shows a significant negative association between incremental beliefs and depressive symptoms even when the said mediators are in the model, $b=-5.010$, 95% BCI $[-6.283, -3.738]$, $t=-7.761$, $p<.001$. However, no mediations were found between incremental beliefs and depressive symptoms, not supporting H6a, H6b and H6c.

The following are the mediation hypotheses between incremental beliefs with the next DV, anxiety symptoms:

H6d: Reappraisal will mediate the relationship between incremental beliefs and anxiety symptoms.

H6e: Suppression will mediate the relationship between incremental beliefs and anxiety symptoms.

H6f: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between incremental beliefs and anxiety symptoms.

When the mediators (suppression, social modeling and perspective taking) are not in the model, the total effect shows a significant negative association between incremental beliefs and anxiety symptoms, $b=-4.390$, 95% BCI $[-5.392, -3.389]$, $t=-8.638$, $p<.001$. Also, the direct effect shows a significant negative association between incremental beliefs and anxiety symptoms even when the said mediators are in the model, $b=-4.653$, 95% BCI $[-5.802, -3.504]$, $t=-7.982$, $p<.001$. There is a significant but positive indirect effect of incremental beliefs on anxiety symptoms through social modeling, $b=0.421$, 95% BCI $[0.087, 0.890]$. A negative indirect effect was expected, going against H6f.

The following are the mediation hypotheses between incremental beliefs and well-being:

H6g: Reappraisal will mediate the relationship between incremental beliefs and well-being.

H6h: Suppression will mediate the relationship between incremental beliefs and well-being

H6i: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between incremental beliefs and well-being.

When the mediators (reappraisal, perspective taking and soothing) are not in the model, the total effect shows a significant positive association between incremental beliefs and well-being, $b=5.306$, 95% BCI [3.353, 7.259], $t=5.355$, $p<.001$. The direct effect also shows a significant positive association between incremental beliefs and well-being even when the said mediators are in the model, $b=3.838$, 95% BCI [2.190, 5.486], $t=4.592$, $p<.001$. There is a significant and positive indirect effect of reappraisal between incremental beliefs and well-being, $b=1.324$, 95% BCI 0.275, 2.540], supporting H6g.

4.3 Additional Analyses

To provide an overview of the beliefs about emotion held by participants in the study, Table 4.6 illustrates the percentage of entity versus incremental beliefs held by participants. Moreover, Table 4.6 shows the percentages of the levels of well-being, anxiety symptoms and depressive symptoms of all participants.

Table 4.6*Percentage of Beliefs About Emotion and Mental Health Levels (N=216)*

Variables	Implicit Beliefs about Emotion	
	<i>n</i>	%
Incremental Beliefs		
Low	25	11.6
Medium	83	38.4
High	108	50.0
Entity Beliefs		
Low	108	50.0
Medium	83	38.4
High	25	11.6
	Mental Health	
	<i>n</i>	%
WEMWBS		
Low	62	28.7
Average	119	55.1
High	35	16.2
PHQ-9		
None to minimal depression	33	15.3
Mild depression	49	22.7
Moderate depression	51	23.6
Moderately severe depression	37	17.1
Severe depression	46	21.3
GAD-7		
Minimal anxiety	53	24.5
Mild anxiety	49	22.7
Moderate anxiety	58	26.9
Severe anxiety	56	25.9

Note. WEMWBS=Represents well-being; PHQ-9=Patient Health Questionnaire-9; GAD-7=Generalized Anxiety Disorder-7.

Based on Table 4.6, there are 108 participants who reported higher incremental beliefs (50%) and 25 participants who reported higher entity beliefs (11.6%) with the rest in between, with 83 participants (38.4%). Thus, this present study demonstrates that half of the participants hold more incremental beliefs and less than a quarter of them holding entity beliefs. The level of well-being among participants (N=216) in this study shows that 55.1% of the participants have average well-being and 16.2% of them reported high well-being. Moreover, 22.7% of participants reported mild depression and 62% of participants reported moderate to severe depression levels, in which 21.3% of them

reported severe depression. This percentage is slightly lower compared to the report in the Global Burden of Disease (GBD) 2020 study by the World Health Organization (WHO) where there was a 27.6% increase in Major Depressive Disorder (MDD) cases during the COVID-19 pandemic (World Health Organization [WHO], 2022).

Lastly, for anxiety symptom levels, there seems to be almost an equal distribution of participants reporting minimal to severe anxiety with most participants reporting moderate anxiety (26.9%), just above those who reported severe anxiety levels (25.9%). This is equally comparable to the report in the GBD 2020 study in which the COVID-19 pandemic led to a 25.6% increase in cases of anxiety disorders (WHO, 2022). The study quoted that younger people, especially aged between 20-24 years old were more affected than older adults, with low and middle-income countries being majorly affected. Thus, the percentages of depressive and anxiety symptoms from this study is reflective of the global statistics reported by the WHO.

CHAPTER 5: DISCUSSION

This present research explored both types of beliefs about emotion (entity and incremental) along with both intrapersonal and interpersonal emotion regulation strategies in relation to depressive symptoms, anxiety symptoms and well-being. Survey data collected from a total of 216 Malaysian young adults aged between 18-30 years old was analysed. The mediational analyses showed mixed results, some which fully supported the hypothesis, some that showed the opposite effect and some which did not support the hypothesis. This chapter integrates and discusses the results of the study based on its key findings. Studies elaborated in the literature review are revisited, research support for key findings are included and finally the implications, strengths, limitations and future directions are shared.

5.1 Summary of Findings

It was reported that there is an increasing rate of anxiety and depression among young adults, concluding that they are the main group at risk of mental health issues (IPH, 2015). On top of this, the exposure of higher rates of anxiety and depressive issues during the COVID-19 pandemic was met with disruptions in the delivery of mental health services during forced national lockdown restrictions. As disorders of anxiety and depression involve emotion dysregulation, this present study primarily investigated how emotion regulation strategies could mediate the relationship between beliefs about emotion and mental health in the young adult population in Malaysia. Efforts of this present study also addressed the recommendation by the NHMS 2019 in promoting and increasing awareness on the mental health issues faced by a specific group. Thus, this present study aimed to add value to the scarce literature of local mental health studies by exploring these relationships, in hopes of strengthening mental health literacy in Malaysia. It also hoped to create understanding of self-sustainable ways for Malaysians to regulate their emotions.

There are a few key findings in this study. Firstly, the present study attempted to provide more literature for both types of implicit beliefs about emotion, entity and incremental, providing a more complete discussion on implicit beliefs about emotion compared to past studies that primarily skewed their discussion on the detrimental effects of being an entity believer (Tamir et al., 2007; De Castella et al., 2013; Ford et al., 2018). This study also combined and explored both intrapersonal and interpersonal emotion regulation strategies to provide a more holistic understanding of ER compared to past studies that focused on either one only. To answer research question #1 posed earlier: *Do beliefs about emotion predict the usage of reappraisal, suppression and IER strategies among young adults between the age group of 18-30 years old?* Results revealed that more entity beliefs predicted lower usage of reappraisal and one IER strategy which is, social modeling whereas, higher incremental beliefs predicted higher usage of reappraisal and social modeling. However, beliefs about emotion did not predict suppression and the other three IER strategies, soothing, perspective taking and enhancing positive affect.

This study also found how implicit beliefs and the usage of ER strategies link to depressive symptoms, anxiety symptoms and well-being. The direct effects from the results found that higher entity beliefs predicted higher depressive symptoms and anxiety symptoms and lower well-being, whereas higher incremental beliefs predicted lower depressive and anxiety symptoms and higher well-being. This is in line with past studies (Tamir et al., 2007; De Castella et al., 2013) and provided more literature on the linkage between implicit beliefs and anxiety symptoms as this was under-explored. Additionally, to answer research question #2: *Do the usage of reappraisal, suppression and IER strategies predict depressive symptoms, anxiety symptoms and well-being among young adults between the age group of 18-30 years old?* Results showed that higher usage of reappraisal, soothing and perspective taking predicted higher well-being. Higher usage of perspective taking also predicted lower depressive and anxiety symptoms, whereas higher

usage of suppression predicted more anxiety and depressive symptoms. Lastly, it was found that higher usage of social modeling predicted more anxiety symptoms. Only one IER strategy, that is enhancing positive affect, did not predict all three mental health outcomes in this study. Similar to the East Asian group in the study by Liddell and Williams (2019), higher usage of perspective taking and social modeling was reported among Malaysians in this present study. However, the present results suggest that perspective taking may be more beneficial than social modeling. These results also provide further understanding on the relationship between IER with depressive symptoms, anxiety symptoms and well-being.

Finally, as the primary focus of this study are the mediation effects, results from the mediational analyses provide answers to research question #3 posed earlier: *Do the usage of reappraisal, suppression and IER strategies mediate the relationship between implicit beliefs and mental health of young adults between the age group of 18-30 years old?* The results found that the usage of reappraisal and social modeling do mediate the relationship between implicit beliefs and mental health, in terms of well-being and anxiety symptoms in young adults between this age group. However, suppression did not mediate this relationship. More specifically, four mediations were found which are: that i) reappraisal negatively mediated the relationship between entity beliefs and well-being, similar to De Castella et al. (2013) and Ford et al. (2018); ii) reappraisal also positively mediated the relationship between incremental beliefs and well-being, as found by De Castella et al. (2013); iii) social modeling negatively mediated the relationship between entity beliefs and anxiety symptoms and iv) social modeling positively mediated the relationship between incremental beliefs and anxiety symptoms. The outcome tells us that emotional beliefs are associated with mental health via reappraisal, supporting previous literature. Secondly, to our knowledge, this is the first time the association between beliefs

about emotion have been made with IER, specifically with social modeling, making it a novel finding especially in the context of Malaysian young adults.

5.2 Key Findings for Path *a*

This section discusses the findings of the relationships between the IVs (entity and incremental beliefs) to the mediators of the study.

5.2.1 Key Finding 1: Implicit Beliefs about Emotion predicted the Likelihood of using Reappraisal but not Suppression

From the hypotheses in path *a*, the results demonstrated that believing more that emotions cannot be controlled (entity beliefs) is linked to participants being less likely to engage in reappraisal. This is in line with past studies that have shown that young adult entity believers have lesser engagement in reappraisal (Tamir et al., 2007; De Castella et al., 2013; Ford et al., 2018). This supports the evidence that as more people endorse entity beliefs, they are less willing to use this intentional cognitive strategy in their daily life (De Castella et al., 2013). Higher incremental beliefs was also found to predict more engagement in reappraisal, in line with past studies (De Castella et al., 2013; Kneeland et al., 2016; Deplancke et al., 2022). This finding contributes to increased evidence that holding more incremental beliefs also influences the likelihood in reappraisal usage as past studies have centralized their focus mainly on the dire consequences of holding more entity beliefs (Tamir et al., 2007; De Castella et al., 2013; Ford et al., 2018).

This finding demonstrates that implicit beliefs adopted by Malaysian young adults also predicted their choice in using reappraisal, in the same fashion young adult participants in the Western studies did, proving that investigating this relationship indeed matters. It provides strength to the theoretical background of the ITES inspired by Dweck's (1999) Implicit Theories of Intelligence Scale, showing that the distinction between a fixed or growth mindset carries importance in predicting the likelihood that an ER strategy is used. Holding higher entity beliefs are rather limiting and predicts lower

likelihood in assuming healthier practises of emotion regulation, whereas holding higher incremental beliefs which holds openness to the possibility of change, predicted better likelihood. As it is also well-documented that reappraisal in particular is linked to implicit beliefs about emotion, this same finding in Malaysian young adults contributes to the fact that this relationship is potentially universal. This finding tells us that the mindset adopted towards controllability of emotion, no matter the cultural setting, predicts whether we are more or less able to regulate emotions.

On the other hand, a positive relationship between entity beliefs and suppression was not found. This goes against the notion that those who hold higher entity beliefs, deemed as maladaptive emotion regulators (Ford et al., 2018; Ford & Gross 2018b) would adopt more maladaptive emotion regulation strategies such as suppression. If those who hold higher entity beliefs are deemed more maladaptive emotion regulators and that suppression is deemed a maladaptive emotion regulation strategy, why then did it not predict higher suppression usage? This lack of finding is perhaps because those who hold entity beliefs are not more or less likely to engage in strategies that alter emotional expression (Tamir et al., 2007; De Castella et al., 2013) such as suppression, which is a subjective form of emotional expression. Incremental beliefs was also not significantly linked to suppression. The results challenge the literature which states that Asians may benefit more from using suppression (Hu et al., 2014; Ford & Mauss, 2015), however, this lack of finding could be attributed to the view that implicit beliefs may only predict ER strategies that are associated with changing the internal experience of emotion, like reappraisal rather than changing the external expression of emotion (De Castella et al., 2013; Ford et al., 2018; Ford & Gross., 2018a).

This means that the present results join other cross-sectional studies which also did not find whether implicit beliefs predict more or less usage of suppression (Tamir et al., 2007; De Castella et al., 2013; Ford et al., 2018) but go against Deplancke et al. (2022)

which found a relationship between beliefs about emotion and suppression. One potential explanation for the lack of finding is that these studies have focused on ER strategies directly from the ERQ that comprises of reappraisal and suppression only. As Tamir et al. (2007) rightly expected and found that beliefs about controllability of emotion was not associated with suppression, De Castella et al. (2013) did not include suppression as part of their investigation as their goal was to extend the study by Tamir et al. (2007) with its respective modifications. Ford et al. (2018) also did not find support between implicit beliefs and suppression. Hence, it lacks clarity as to why entity believers are deemed as maladaptive emotion regulators despite its lack of findings with suppression usage. Perhaps, future investigation of maladaptive strategies that target the internal emotional experience rather than the external may provide greater clarity to the maladaptiveness of higher entity beliefs.

5.2.2 Key Finding 2: Implicit Beliefs about Emotion predicted the Likelihood of using only One IER Strategy, Social Modeling, Making it a Novel Finding

Additional results from path *a* included the linkage between implicit beliefs about emotion and strategies of interpersonal emotion regulation (IER). The findings revealed that higher entity beliefs predicted lesser engagement to social modeling, opposing the hypothesis. For the relationships between entity beliefs and all four IER strategies, it was hypothesized that those with higher entity beliefs would link to more engagement in these strategies as it was deduced that they would look to others for support as they regard themselves ineffective at self-coping (Hofmann et al., 2016). Social modeling in particular involves observing others to see how they may cope with a situation (Hofmann et al., 2016). In other words, it means observing others on what they would do if they were in our situation. Applying it into this context, this means that those who believe more that they cannot control their emotions is linked to lesser engagement in observing

how others cope with a situation. This result goes against the novel deduction made, inspired by the reasoning in Hofmann et al. (2016).

There are a two possible reasons for this. Firstly, as IER strategies are directly related to social norms and expectations (Hofmann, 2014; Hofmann et al., 2016), one of the close comparisons on this lack of finding could be attributed to the cultural context, in that East Asians use lesser social support to cope with stress as the cultural norms discourage active social support seeking (Taylor et al., 2004). This reason, coupled with the notion that entity believers are maladaptive emotion regulators potentially pinpoint why believing more that emotions are uncontrollable predicted lesser observation on how others cope with a similar situation. Secondly, those who hold higher entity beliefs could reflect the lower usage of social support observed among Malaysian university students, particularly during the pandemic (Kamaludin et al., 2020). They could be part of the population which saw increased loneliness among young adults during the pandemic. This increased loneliness that was due to passive usage of social media is in contrast to active social media users who may have social support seeking motives (Lisitsa, 2020). This could have been another possible reason that those with higher entity beliefs were less likely to actively seek or observe others. The results and these reasons certainly challenge the novel deduction made, suggesting that cultural context and the impact of the pandemic may have played a role.

Moreover, this present study showed a positive relationship between incremental beliefs and social modeling, as hypothesized in this study based on Kneeland and colleagues' (2016) suggestion that incremental believers could be more inclined to engage in IER. This means that those who believe more that they can control their emotions is linked to higher engagement in observing others to cope with a situation. As there are a lack of studies on incremental beliefs in relation to IER strategies, the current results add support to the nearest comparison which is Tamir and colleagues' (2007)

findings that incremental believers sought more social support. The novel finding also validates the suggestion by Kneeland et al. (2016) and adds strength to the theoretical background of the ITES where adopting a growth mindset predicted higher usage of a strategy other than reappraisal, extending the emotion regulation literature. This result is clearly in contrast to the relationship between entity beliefs and social modeling, showing that those with higher incremental beliefs are likely to be active seekers of social support. Interestingly, it echoes the benefits in adopting incremental beliefs but challenges the East Asian cultural norms on discouragement of active social support seeking. This result tells us that adopting a growth mindset predicts more openness of practising ER related strategies even among Malaysian young adults, indicating that holding this mindset is potentially recognized as a helpful mindset universally, transcending cultural norms.

As for the remaining three IER strategies, there were no significant positive relationships found between entity beliefs and perspective taking, enhancing positive affect and soothing. Similarly, no significant positive relationships were found between incremental beliefs about emotion and these strategies. It is not clear why there were no significant relationships found between implicit beliefs and these three strategies, however, it is possible that the overt nature of these strategies where support is reached out through social means to self-regulate, could not have fully captured its predictive effects in relation to the implicit nature of beliefs about emotion. Perhaps, more investigation is needed to understand this relationship, such as having a larger sample size in a future study which may be better able to capture this effect. If these relationships were found, they could have been potential mediators in this study, which indicates that more research is needed to investigate them. Nonetheless, the current results particularly between implicit beliefs about emotion and social modeling have most notably established a new relationship between implicit beliefs about emotion and IER, as aimed

in this present study. This paves the way for future emotion regulation research to further investigate this relationship.

5.3 Key Findings for Path b

This section discusses the findings of the relationships between the mediators to the mental health outcomes (well-being, depressive symptoms and anxiety symptoms) of the study.

5.3.1 Key Finding 3: Higher Usage of Reappraisal and Soothing predicted Better Well-Being but did not predict Depressive and Anxiety Symptoms

Firstly, in line with the hypothesis, the result showed a positive relationship between reappraisal and well-being. This result is consistent with past literature which states that adaptive strategies such as reappraisal positively link to well-being (Kraiss et al., 2020) and strengthens evidence of past studies which demonstrated that those who engage in reappraisal have better well-being (Gross & John, 2003; Hu et al., 2014; Beaumont et al., 2023). It means that the more one reappraises, or cognitively reframes a situation, such as a negative one to alter its emotional impact predicts better welfare, indicating healthier management of emotion regulation. This reiterates the benefits in engaging in more reappraisal, echoing its adaptive nature. Moreover, as this study was conducted on Malaysian young adults, it concurs with Kwon et al. (2013) in which people from interdependent cultures potentially gain from reappraisal. The higher usage of reappraisal reported also provides evidence that reappraisal usage is rather universal and does not differ across cultures, agreeing with past studies (Gross & John, 2003; Soto et al., 2011; Ford & Mauss, 2015; Schunk et al., 2022).

While the literature shows that reappraisal carries many mental health benefits, reappraisal was not found to be related to depressive and anxiety symptoms in this study. Thus, the results challenge the literature that reappraisal correlated negatively with negative indicators of mental health (Hu et al., 2014) and that more engagement in

reappraisal is correlated with lower anxiety and depressive symptoms (Gross & John, 2003; Tamir et al., 2007; De Castella et al., 2013; Hu et al., 2014; Kraiss et al., 2020). This lack of association in this present study is unclear why reappraisal could not fully capture its predictive effects on depressive and anxiety symptoms. Perhaps, as this study was not conducted on clinical participants, reappraisal, being an antecedent-focused strategy that is intervened even before an emotion response is generated (Gross & John, 2003) could not fully predict its effect on anxiety and depressive symptoms in this study. Nonetheless, the fact that reappraisal related positively with well-being still shows it is a potentially helpful ER strategy.

Additionally, a positive relationship was found between soothing and well-being. This finding is consistent with the view that those who have a higher tendency to seek out IER have better well-being (Williams et al., 2018). Soothing refers to looking for others for sympathy and comfort (Hofmann et al., 2016). This means that the more one looks to others for sympathy and comfort anticipates better well-being. However, like reappraisal, higher usage of soothing did not predict depressive and anxiety symptoms. One explanation for this could be that as the nature of the items under soothing as an IER strategy suggests that as consolation is offered by others when one is sad, it provides relief, which may not necessarily take away the sadness or anxiety felt but much better enhances well-being, based on this present result. This validates the point by Zaki (2020) where there is motivation to improve another's well-being (empathic concern) practised by the observer (in this case the consoler), as this present result reflected that higher usage of soothing predicted better well-being only. It also validates the point that people's well-being increases even when they were inclined to look for others after feeling intense emotions (Rimé, 2009). Thus, the result suggests that soothing is potentially an adaptive ER strategy in the context of Malaysian young adults.

5.3.2 Key Finding 4: Higher Usage of Suppression predicted Higher Depressive and Anxiety Symptoms but did not predict Well-Being

In support of the hypothesis, higher usage of suppression predicted more depressive and anxiety symptoms. However, it did not significantly correlate with well-being. This supports the finding that suppression correlated positively with negative indicators of mental health such as depression and anxiety but goes against the finding that it correlated negatively with positive indicators of mental health (Hu et al., 2014). This present result strengthens the evidence that suppression is damaging and heightens anxiety and depression (Moore et al., 2008). The higher usage of suppression evidences that Asians do use suppression as it is congruent with our social value system (Hu et al., 2014; Ford & Mauss, 2015). This social congruency pinpoints that regulating behavioural expressions of emotion is important for social functioning (Webb et al., 2012). However, like Western literature, the results showed that it did not benefit Asians but indicated poorer mental health. Therefore, in line with past investigations (De Castella et al., 2013; Ford et al., 2018), it further evidences that suppression is a less effective ER strategy than reappraisal (Gross & John, 2003; Hu et al., 2014; Ford et al., 2018; Zhou et al., 2023) as it is an indicator for poorer mental health whereas reappraisal predicted better well-being.

If suppression is important for interpersonal harmony in Asian culture (Hu et al., 2014), why then did it predict poorer depressive and anxiety symptoms? As suppression is response-focused where it arrives late in the emotion generative process, it demands the individual to make a concerted effort in managing emotion response inclinations when they continuously emerge (Gross & John, 2003). These repeated efforts to manage emotion responses may overwhelm cognitive resources, keeping the individual preoccupied from performing optimally in social contexts when the emotions are emerging (Gross & John, 2003). This creates cognitive dissonance among those in Asian cultures that more likely use suppression as they prioritize harmony with others. It

suggests that individuals are not free to show up as they are while they are internally preoccupied with battling their true emotional expressions. As they are keenly aware of their lack of authenticity, they are faced with an incongruence between the self and their experience; this incongruence has been associated with depressive symptoms and distress (Sheldon et al., 1997). This offers an explanation on the relationship between suppression with depressive and anxiety symptoms in this present study. Thus, daily usage of suppression may lead to more negative emotion experience (Gross & John, 2003).

Although we find it difficult to regulate our actual feelings, it is often crucial that we can control our emotional expression (Webb et al., 2012) as it serves to be beneficial in social outcomes especially in Asian cultural norms. Hence, if suppression predicted poorer depressive and anxiety symptoms, how then can we truly benefit from its usage? Schunk et al. (2022) found that when their Japanese participants suppressed out of empathic concern, it linked with higher well-being and lower depressive symptoms but suppression without empathic concern did not have the same effect. With the addition of considering empathic concern, it made a difference and Schunk et al. (2022) further suggested that suppression may be an adaptive ER strategy for their participants. If Asians are said to benefit more from suppression (Ford & Mauss, 2015), the findings by Schunk et al. (2022) tell us that the context applied when engaged in suppression matters in how suppression can benefit us. This is a useful suggestion for future research involving ER strategies to consider the importance of context applied, aside from dividing strategies as adaptive or maladaptive in general.

5.3.3 Key Finding 5: Higher Usage of Social Modeling predicted Higher Anxiety Symptoms but did not predict Well-Being nor Depressive Symptoms, being a Potentially Maladaptive Strategy

Going against the hypothesis, a positive relationship was found for social modeling and anxiety symptoms. This indicates that the more one observes others to see

how they may cope with a situation predicted higher anxiety symptoms. In other words, the more we observe others on what they would do if they were in our situation anticipated more worry. Although there is higher usage of social modeling as predicted, this finding among Malaysian young adult participants conflicts with Liddell and Williams (2019) which suggested that their East Asians participants who engaged more in this strategy would benefit from it. The usage of social modeling also did not predict well-being nor depressive symptoms. Thus, it is possible that social modeling may be a maladaptive IER strategy in the context of Malaysian young adults. There could be a few reasons to this conundrum.

Firstly, during this age, young adults are either in their tertiary education, are looking for jobs, are just beginning their careers, are new in their careers or involved in romantic relationships. These factors pinpoint that they are learning, evolving into adulthood and are very much concerned with their current life stressors (Ranta et al., 2014). It is possible that they may still be finding their own ways of coping with the pressure of their life stressors. Perhaps, observing others on what they would do if they were in our situation in this age is not helpful as it could be that either not everyone has the answers to a certain situation, their answers may be worse or unhelpful which could all possibly predict higher levels of worry. It could also be that expressing a problem to another in itself makes one dwell on their stressors more, predicting more anxiety.

Secondly, the biggest situation young adults faced in this time was a global pandemic and looking at others to see how they may cope with a situation in this time may be more detrimental in a time of great uncertainty. Being young adults in a time of high insecurity and instability likely drives more anxiety. They also see that not everyone is coping well in this time of increased sickness, higher death rates and fear of falling sick, all during forced stay-at-home measures. They may also see other people losing their jobs, young people not getting jobs or have difficulty in coping with their studies online

due to personal challenges (Sia & Adamu, 2020; Nga et al., 2021; Al-Kumaim et al., 2021). While engaging more in observing others to see what they would do if they were in our shoes could be a way of coping during this stressful time, it did not predict to be beneficial for Malaysian young adults as seeing others who may not cope as well, did not offer them a way to cope also, predicting higher levels of worry, conflicting with Liddell and Williams (2019).

Thirdly, social media usage has been reported to increase more during the pandemic than before (Boursier et al., 2020). It is suggested that the isolation reinforced the individual's sense of loneliness, promoting their need to be part of virtual groups. Prolonged exposure to social media during this time elevated anxiety levels (Boursier et al., 2020). Thus, it is possible that the increased usage of social media among young adults during the pandemic (Lisitsa, 2020) is not a helpful way to observe others to see how one may cope with a situation as not everything displayed on social media is truthful or real. Social media is not relatable during this distressing time as it is designed to make things look good and that may be hard to believe when the reality is being faced with a global crisis, potentially predicting higher anxiety levels. Pandemic-related information or misinformation posted on social media may have also exacerbated anxiety levels.

Although this present study found social modeling to be rather maladaptive for Malaysian young adults, we suggest that the context applied is rather important. As the effects of the pandemic had an impact on the outcomes of this result, we suggest future research to further investigate the relationship between social modeling and anxiety symptoms post-pandemic, as it may offer valuable insight to the adaptiveness or potential benefits this IER strategy may hold. It may also explain its relationship to well-being and depressive symptoms, which this study lacked. Nonetheless, the correlation between social modeling and anxiety symptoms is still a novel finding in this present study which indicates potential mediating effects.

5.3.4 Key Finding 6: Higher Usage of Perspective Taking predicted Higher Well-Being, Lower Depressive and Anxiety Symptoms, suggesting it to be an Adaptive ER Strategy

The next IER strategy, perspective taking, was found to predict all three mental health outcome variables in the hypothesized direction. Perspective taking refers to using others to be reminded not to fret and that others have it worse (Hofmann et al., 2016). Based on this result, this specifically means that when engaged more in using others to be reminded not to worry and that others have it worse predicted better well-being, lower depressive and anxiety symptoms. The significant negative relationship with anxiety symptoms and depressive symptoms is also a novel finding in the context of Malaysian young adults as it provides more literature to the scarcity of published studies on the framework of IER. It provides evidence that those who have more interpersonal support experience lower anxiety and depression (Metts et al., 2022). The present results also give evidence that Asians benefit from using perspective taking (Liddell & Williams, 2019), making it a potentially adaptive strategy in the realm of IER, as it predicted better mental health overall. This is a valuable finding in a Malaysian study on young adults as the research in IER is relatively new (Loskot, 2019).

Perspective taking as an IER strategy suggests that by obtaining understanding from another's point of view, it provides a different outlook on a certain situation, thoughts or feelings. When given perspective that things are not as bad as they seem, it prevents us from further catastrophizing a situation. This is a possible reason why perspective taking predicted lower depressive and anxiety symptoms as the nature of the items under this IER strategy entail management of depressed and anxious feelings. As a result, reminders on not to worry and others have it worse helps us realize that the reality of the situation may not be as bad as is felt. Moreover, as young adults are in a transitioning phase into adulthood, being reminded not to worry could also offer a way of coping with their current life stressors. Applied in the context of the pandemic, it indicates

that perspective taking is also valuable during a time of global crisis when mental health issues increased drastically in this distressing period (Mud Shukri et al., 2023). While perspective taking did not relate with implicit beliefs about emotion, we suggest that future investigation on this IER strategy in relation to implicit beliefs and mental health can be conducted in a different context as it can potentially be a strong mediator. Nonetheless, the results clearly shows that it seems to be a promising ER strategy indicating better mental health.

The results from key findings 5 and 6 discussed are similar to Liddell and Williams (2019) in which East Asian participants reported higher usage of social modeling and perspective taking. However, it challenges Liddell and Williams (2019) as they suggest that both strategies are beneficial for their East Asian group, but in this present study, it seems that perspective taking is more helpful than social modeling. Lastly, the lack of findings for the final IER strategy, enhancing positive affect is consistent with Liddell & Williams (2019). It is likely that akin to the East Asian participants in their study, those from Asian cultural backgrounds are driven to decrease negative affect when regulating emotions rather than be motivated to increase positive affect like Western European respondents (Liddell & Williams, 2019). It is also suggested that those from East Asian cultures would prefer to express positive affect via low-arousal positive emotions like calmness, as opposed to Western European cultures who would lean towards high-arousal emotions, like excitement (Tsai et al., 2006). Thus, this IER strategy may indicate that its usage differs by culture. For future research, the items for enhancing positive affect could be adjusted to reflect low-arousal positive emotions to fully capture its adaptiveness in Asian cultural contexts. By doing so, it will open up wider investigation to understand its predictive value towards mental health outcomes.

5.4 Key Findings for the Direct Effects and Path c'

This section discusses the findings for the mediational analyses in which, both the direct and indirect effects will be explained. To illustrate the indirect or mediational effects, the direct effects must first be explained to show the relationships between the predictors and the outcome variables independent of the mediators.

5.4.1 Key Finding 7: Reappraisal Mediated the Relationship between Implicit Beliefs about Emotion and Well-Being

Firstly, the direct effect shows that entity beliefs negatively related to well-being when the mediators are absent. This is an important correlation as it tells us that higher entity beliefs, which are self-limiting, is rather maladaptive, predicting worse state of well-being. This supports the findings that entity beliefs predicts lower well-being (Tamir et al., 2007; De Castella et al., 2013). The indirect or mediation effect further showed that reappraisal negatively mediated the relationship between entity beliefs and well-being, supporting the hypothesis. This means that when entity beliefs are higher, its effect on well-being reduces or is weaker when engaged less in reappraisal. This provides evidence that reappraisal explains the relationship between entity beliefs and well-being, conceding with past studies (De Castella et al., 2013; Ford et al., 2018).

On the other hand, the direct effect shows that incremental beliefs was positively related to well-being when the mediators are absent. This is also an important correlation as it tells us that higher incremental beliefs, is more adaptive, predicting better state of well-being. This supports the finding that incremental beliefs predicts better well-being (De Castella et al., 2013). The mediation effect further suggests that reappraisal positively mediated the relationship between incremental beliefs and well-being, supporting the hypothesis. This means that when incremental beliefs are higher, its effect on well-being is stronger when engaged more in reappraisal. This supports Sakakibara and Ishii (2020) in which well-being is found to be higher through mediation of adaptive emotion

regulation and strengthens the evidence that reappraisal explains the relationship between incremental beliefs and well-being, conceding with De Castella et al. (2013). As it is demonstrated by Malaysian young adult participants in this study, the mediating effect of reappraisal extended beyond Western studies, making it universal. No matter the cultural norms, higher incremental beliefs compared to entity beliefs indicated openness in practising adaptive ER strategies.

The findings for the direct effects between implicit beliefs about emotion with well-being strengthens the theoretical background of the ITES where adoption of a growth mindset seems to predict better emotional health than with a fixed mindset. With the addition of reappraisal as the mediator, the usage of this effective ER strategy impacted the strength of the association between controllability beliefs about emotion and well-being, much like past Western studies (De Castella et al., 2013; Ford et al., 2018). The results imply that especially with a growth mindset, Malaysian young adults are more likely to emotionally regulate themselves more healthily, which leads to even better emotional health. On the other hand, a limiting mindset adopted by Malaysian young adults leads to poorer choice in reappraisal usage, indicating even worse well-being. These results show that the mindset held is a revelation to the state of well-being and as mindset predicts our likeliness to regulate emotionally, it can further anticipate whether it makes or breaks our state of well-being. This answers the problem introduced in the present study, which is that mindset itself can be a reason for increasing problems in mental health among Malaysian young adults, impacted by their ability or lack thereof to regulate emotions.

Other than these, reappraisal was not found to mediate the relationship between implicit beliefs with anxiety and depressive symptoms in this present study. This is as explained under Key Finding 3, reappraisal did not correlate with these variables, showing the lack of mediation. Furthermore, the second intrapersonal ER strategy,

expressive suppression did not mediate the relationship between implicit beliefs about emotion and the 3 mental health outcomes. Although it correlated with anxiety and depressive symptoms in the hypothesized direction based on path *b*, suppression did not correlate with implicit beliefs from path *a*, therefore it could not predict a mediating effect. Since suppression did not relate to implicit beliefs yet still impacted anxiety and depressive symptoms, perhaps it may moderate rather than mediate this relationship, which can be up for future investigation.

5.4.2 Key Finding 8: Social Modeling Mediated the Relationship between Implicit Beliefs about Emotion and Anxiety Symptoms

To begin, the direct effect shows that entity beliefs positively related to depressive and anxiety symptoms in the absence of the mediators, in accordance with past studies (De Castella et al., 2013; Ford & Gross, 2018b). This indicates that higher entity beliefs predicts poorer mental health. It also provides evidence on the relationship between implicit beliefs and anxiety symptoms as this was under-explored. More interestingly, one mediation effect found went against the predicted direction, which is that social modeling negatively mediated the relationship between entity beliefs and anxiety symptoms. This means that when entity beliefs are higher, its effect on anxiety symptoms reduces when engaged less in social modeling. This goes against Hofmann et al. (2016) which stated that IER strategies might be more applicable for people with maladaptive emotion regulation. As the direct effect here shows a positive direction and the mediation effect is a negative direction, this is known as competitive mediation (Zhao et al., 2010). That is, a mediation effect is still present, however the direct and indirect effects are opposing each other. The finding that an IER strategy mediated the association between implicit beliefs about emotion and mental health is a novel one.

On the other hand, the direct effect shows that incremental beliefs was negatively related to depressive and anxiety symptoms in the absence of the mediators. As most

studies on beliefs about emotion are skewed mainly towards entity beliefs, this provides evidence on incremental beliefs to mental health. It also shows that holding more adaptive beliefs about emotion directly indicate lesser depressive (Tamir et al., 2007) and anxiety symptoms, predicting better mental health. As those who hold higher incremental beliefs would seek out IER (Kneeland et al., 2016), it was expected that it would predict lower anxiety symptoms. However, the mediation effect found also went against the predicted direction which is that social modeling positively mediated the association between incremental beliefs and anxiety symptoms. This means that when incremental beliefs are higher, its effect on anxiety symptoms is stronger when engaged more in social modeling.

The opposite effects found from these two mediations were unexpected findings that create an interesting discussion. How is it that higher entity beliefs, deemed maladaptive, predicted lower anxiety symptoms impacted by lesser social modeling usage? And, it is curious that the opposite was found for higher incremental beliefs. The results seem that it would challenge the ITES theory in that perhaps holding incremental beliefs does not necessarily indicate better mental health through mediation of social modeling. However, it is seen from path *b* of the present results that higher social modeling usage in itself indicated higher anxiety symptoms, establishing that it is likely a maladaptive ER strategy rather than about the effect of beliefs held. This still begs the question, why then did higher maladaptive emotional beliefs reflect lower usage of this strategy and higher incremental beliefs reflect otherwise? The answer is by virtue of their likeliness of employing ER strategies. While it is certainly beneficial and more recommended to hold a growth mindset towards emotional beliefs, the mediation effects of social modeling suggest that it is also important to recognize the helpfulness of ER strategies to employ in daily life.

Applied in the context of Malaysian young adults, social modeling may not necessarily be a beneficial strategy, unlike said in Liddell and Williams (2019). Those

holding higher entity beliefs were less likely to engage in social modeling as they could be less willing to share about their own situation to others. Hence, they are less likely to actively seek and observe others if others were in their situation. As the direct effect indicated that higher entity beliefs predict higher anxiousness to begin with, this is why less engagement in social modeling predicted lower anxiety. On the other hand, as those with higher incremental beliefs would be more inclined to engage in IER (Kneeland et al., 2016), they would gravitate towards using more social modeling, as expected. This is because they are more willing to engage with others. However, by engaging more in social modeling, it predicted more anxiousness, implying that not all social support seeking motives are helpful or it is not a good fit in the context of young adult life. Apart from higher entity beliefs predicting poorer mental health, this result also potentially answers the problem regarding increasing symptoms of emotional related disorders among Malaysian young adults. That is, the higher likeliness to engage in an unhelpful IER strategy, despite holding a growth mindset, predicted higher anxiousness. Thus, even with a growth mindset, it is important to discern between helpful or unhelpful emotion regulation strategies, as unhelpful strategies may predict more psychological harm than good.

The results from social modeling as a mediator revealed two things, i) that the tendency to share less about our own situation could discourage us from seeking others to self-regulate emotionally due to higher entity beliefs and ii) that sharing more (due to higher incremental beliefs) about our own situation to observe how others may deal with it if they were in our shoes implies more opinion-seeking or advice-seeking (Chan & Rawana, 2021) to a specific problem rather than pursuit of self-regulation. The second reason could be why sharing our situation with others in itself predicted higher anxiety despite a willingness to do so. This is because our own situation is unique to ourselves and perpetual, unlike emotions. By observing what others would do if they were in our

situation, is to ask for a different opinion to the same situation, taking away the focus from self-regulating emotions.

These revelations create curiosity as to why Hofmann et al. (2016) included a strategy that measures advice-seeking as part of interpersonal emotion management. In some cases, giving advice in therapy would be considered a therapeutic error as it may increase a client's dependency on others (Hill et al., 2023). However, inclusion of this strategy as part of IER acknowledges that advice-seeking is an undeniable part of our interpersonal relationship with others as people likely seek out answers to life's problems (Ji et al., 2016). In fact, advice is also sometimes sought after by clients in a therapeutic setting (Hill et al., 2023). In the first study exploring the reasons behind advice-seeking from a cross-cultural perspective, Ji et al. (2016) verified that informational reasons are one of the prime reasons for advice-seeking among both East Asians (primarily Chinese) and Euro-Canadians. Advice-seeking may also be for relational reasons seen more in East Asians (Ji et al., 2016) however, this digresses from Hofmann and colleagues' (2016) definition of social modeling, which is more informationally driven.

Thus, those who hold a growth mindset are readily open to challenges and would be more inclined to seek answers to life's problems (Dweck & Leggett 1988; Dweck, 2017). In the context of young adults, they are faced with their own unique life challenges and it is worth acknowledging that young adults with a growth mindset would be more open to actively seeking answers to their current life challenges, which may include advice-seeking. It is possible that this may have been an alternative for Malaysian young adults during the pandemic as a form of help-seeking in the face of great uncertainty and disrupted the delivery of mental health services.

Moreover, social modeling did not mediate the relationship between implicit beliefs with depressive symptoms and well-being, not supporting Tamir et al. (2007) which found incremental believers who sought more social support demonstrated fewer

depressive symptoms. Other IER strategies, perspective taking, soothing and enhancing positive affect also did not mediate the relationship between implicit beliefs about emotion and all outcomes of mental health. While there were main effects for perspective taking and soothing with the mental health outcomes, the lack of mediation shows that they are independent of beliefs about emotion. Since these strategies did not link with implicit beliefs, they could be better studied as moderators instead of mediators between implicit beliefs about emotion and mental health in future investigation.

5.5 Implications

5.5.1 Theoretical Implications

The present study has a few implications. Firstly, that clearly holding incremental beliefs is predictive of enhanced well-being and is related to lower depressive and anxiety symptoms and the opposite result was found for entity beliefs in relation to these 3 factors in mental health. The main effects suggest that holding incremental beliefs predicts better mental health than entity beliefs, supporting the ITES. Secondly, that this study further strengthens that reappraisal usage has a mediational effect between implicit beliefs and well-being, in line with past studies and that beliefs are predictive of reappraisal usage.

Thirdly, the novel finding is that the usage of social modeling has a mediational effect between implicit beliefs and anxiety symptoms but may be regarded as an unhelpful ER strategy for Malaysian young adults as higher usage of it predicted higher anxiety symptoms. As it was acknowledged that incremental believers would be more active in seeking social support and IER, perhaps not all IER strategies may really be helpful in regulating emotions for better mental health. It could be that even when one adopts a growth mindset toward beliefs about emotion, not all social support seeking motives may really be helpful. Nonetheless, this adds strength to the ITES by breaking away from only investigating intrapersonal ER strategies alone. On the other hand, it could be that the usage of social modeling is ingrained in our Asian culture where we value social

interconnectedness, but it predicts more worry despite seeking social support in this way. Another possibility is the impact the pandemic had on Malaysian young adults which changed our social environment.

Fourthly, this study also found that suppression predicted worse depressive and anxiety symptoms. More usage of perspective taking and soothing were found to predict better well-being and the former also predicted lower depressive and anxiety symptoms, but both were not related to implicit beliefs about emotion. The usage of perspective taking and social modeling were also similar to the finding by Liddell and Williams (2019) which found more East Asians adopting these strategies as the value placed in social interconnectivity is strong.

5.5.2 Practical Implications

Adopting incremental beliefs shows to be more helpful for Malaysian young adults than entity beliefs. This present study suggests that belief change interventions can be created in future to help individuals challenge their fixed beliefs about emotion so that they become more adaptive emotion regulators. This will help to contribute to better mental health for individuals with fixed emotion beliefs. For example, as training in cognitive restructuring of maladaptive beliefs is included in CBT (Jazaieri et al., 2016), training to transition from entity beliefs to more helpful incremental beliefs can be incorporated as part of therapy. Another example is Rational-Emotive Behavior Therapy (REBT), where part of the therapy encourages clients to dispute their irrational beliefs that are causing emotional problems (Bailey & Turner, 2023). Once irrational beliefs are disputed and recognized as unhelpful, it is replaced with logical, more helpful beliefs (Bailey & Turner, 2023). Disputing fixed beliefs about emotion by eventually replacing it with incremental beliefs can also be applied under this component in REBT. Another practical implication is that people can be educated on practising more adaptive ER strategies such as reappraisal, perspective taking and soothing in their daily life to create

better mental health. They can also be taught to practise less of disadvantageous strategies such as suppression and social modeling.

5.6 Strengths and Limitations

This present study addressed some limitations from previous research, which are that more ER strategies other than reappraisal and suppression were explored and more factors under mental health were explored. However, one of the limitations in this present study is that the sample might not fully be representative of the entire young adult population in Malaysia as English-speaking participants were recruited. This is as the questionnaires used were all in English and not all of them had translations in local languages used such as Bahasa Malaysia, Mandarin or Tamil. Secondly, the data collected are self-reports, in which much of them comprised of students and are healthy young adults. Similar to previous studies on implicit beliefs in other domains, the present findings cannot be generalized beyond non-clinical samples (De Castella et al., 2013).

Thirdly, as this is a mediational study, it has established important links between beliefs about emotion, ER strategies and mental health. However, causal relationships between variables could not be established. As this is also a cross-sectional study, it could not establish long term trends. Despite the limitations, this study made some valuable contributions which include that beliefs about emotions predict mental health and ER usage in the Malaysian young adult context. One novel contribution is that IER strategies were also explored between emotion beliefs and mental health, giving new insights in the Asian perspective. Thirdly, from the findings, it also seems that not all IER strategies have adaptive consequences, such as social modeling, which is contrary to past studies (Liddell & Williams, 2019; Hofmann et al., 2016).

5.7 Future Direction

Many links were established in this cross-sectional study that have contributed to the emotion regulation literature. Additionally, the findings have added clarification and

awareness on emotional beliefs and the pros and cons of emotion regulation strategies in the Asian context. It would be valuable to investigate suppression, perspective taking and soothing as moderators between implicit beliefs and mental health as this present study did not predict their mediating effects. However, these strategies provided added insight into their relationship with mental health and should be given their deserved attention especially in Asian research studies on emotion regulation. Additionally, although suppression predicted more detrimental effects to mental health, added context such as suppressing ‘out of empathic concern’ could also be studied in future to fully capture its benefits in the Asian cultural context. By taking this approach, valuable insight regarding suppression can be deeper and it may even be regarded as an adaptive strategy, given context.

The items for enhancing positive affect under the IERQ could also be modified to suit the Asian cultural context and capture its adaptive benefits. Lastly, it would be interesting to see the effect of social modeling usage post-pandemic to compare if the usage of social modeling is truly less effective for young adults and predicts more anxiety symptoms outside of the context of the pandemic. Another suggestion would be to conduct a study to compare social media usage, loneliness and social modeling among Malaysian young adults to observe if social media usage influences engagement in social modeling and anxiety levels. We also suggest future research to break away from merely dividing ER strategies as adaptive or maladaptive and to add importance to social contexts applied.

CHAPTER 6: CONCLUSION

Strategies of emotion regulation, whether intrapersonal or interpersonal, has established important relationships to our mental health in terms of well-being, depressive symptoms and anxiety symptoms. Beliefs about controllability of emotions have also shown direct relationships to our mental health, which echo the literature that our mindset about emotions, whether growth oriented or fixed are predictive of better or worse mental health. Emotional beliefs predicted usage of reappraisal, supporting past literature whereas, beliefs also predicted the usage of one of the IER strategies, social modeling, a novel finding. The results found that both reappraisal and social modeling mediated the relationship between emotional beliefs and well-being as well as anxiety symptoms, but not for depressive symptoms. Some of the key findings in this study include social modeling's potential maladaptive effects, particularly in predicting higher anxiety symptoms; perspective taking and soothing being potentially adaptive ER strategies for Malaysian young adults and that suppression predicted worse anxiety and depressive symptoms even in the Malaysian context. This study also brought to light the complexities of the usage of ER strategies in the context of the pandemic, with respect to the typical life challenges faced by Malaysian young adults. Lastly, the present study suggests that challenging maladaptive beliefs about emotion and practising more adaptive ER strategies will help to contribute to better mental health.

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LIST OF PUBLICATIONS AND PAPERS PRESENTED

1. Oral presentation of research dissertation at The Malaysian Psychology Students Assembly (MAPSA) 2023 conference physically held at Sunway University on 4th November 2023.
2. News article publication of research findings and insights in The Star, published on 31st October 2023:
<https://www.thestar.com.my/opinion/letters/2023/10/31/belief-matters-in-mental-health>
3. Oral presentation of research dissertation at the “15th International Congress of Clinical Psychology” between 16-18th November 2022 held virtually from Spain.
4. Abstract published in “Advances in Clinical Psychology, Volume 2” in May 2022: Chaudhury, S. E. (2022). Emotional Beliefs and Mental Health: The Mediation Role of Emotion Regulation among Malaysian Young Adults. In G. Buela-Casal (Ed.), *Advances in clinical psychology. Volume 2*. (1st ed., pp. 49–49). Dykinson, S.L. <https://doi.org/10.2307/jj.5076281.50>
5. Poster presentation for Sunway University’s open day in January 2022

APPENDICES

Appendix A

Participant Information Sheet & Statement of Consent

Introduction

Dear Participant,

You have been invited to take part in this research project on ‘Emotion Regulation and Well-Being among Malaysian Young Adults.’

This research project is conducted by Shorolipi Emma Chaudhury, a postgraduate student pursuing the MSc in Psychology degree programme in Sunway University, Malaysia. This project is part of her master’s dissertation.

Before you decide to take part in this research project, it is important for you to understand what it will involve and whether you meet the eligibility criteria. Please read the following information carefully before you decide to participate in this study.

Purpose of the Study

The aim of this study is to explore factors that affect emotion regulation in relation to well-being.

Eligibility to join the study

In order to participate in this study, you must be:

1. Malaysian
2. Between 18-30 years old
3. Able to read and write in English as this study is conducted in English.
4. Non-Malaysians will be excluded from this study.

What will be done?

1. Firstly, you will fill in a demographic sheet that will ask about some of your basic information.
2. Then, you will be presented with six short surveys which investigate emotion regulation, emotion beliefs and well-being.
3. It will take approximately 15-20 minutes to complete answering all the surveys depending on your reading speed.
4. You are required to complete the entire study as any incomplete data will be excluded from the study.
5. Finally, upon completion of the surveys, you will be presented your token of appreciation for participation in the study.

What are the possible benefits to this study?

As a token of appreciation, at the end of the study, you will be presented with website links to two [free e-books on mental health](#).

By joining this study, you will contribute to knowledge and understanding on this topic which will be beneficial to other researchers and may also be beneficial to future research in this field.

Are there any risks/discomfort involved?

There are no identified risks involved in this study. You may be asked some personal or sensitive information that are important for this study. If you feel any discomfort, you may stop participating in this study at any time.

What are my rights?

Your participation in this study is entirely voluntary. You may decide to not proceed with the study or withdraw from the study at any time without consequences. If you choose to terminate your participation, you may do so by exiting this survey form.

Are my responses to the study confidential?

All the information gathered will remain anonymous and confidential. The data of this study will be accessible only to the researcher via a password-accessed computer. All of your responses will only be reviewed by the researcher and the research supervisors. The results of this study may be reported or published, but your name will not be associated in any way with any published results. Your forms will be kept securely and any identifiable data will be destroyed at the end of the study.

Who to contact?

If you have any queries or any issues regarding this research study, you may directly contact us here:

Researcher:

Shorolipi Emma Chaudhury (14087357@imail.sunway.edu.my)

MSc in Psychology

Department of Psychology,

School of Medical and Life Sciences,

Sunway University, Malaysia.

Research Supervisors:

Prof. Alvin Ng Lai Oon (alvinn@sunway.edu.my)

Department of Psychology,

School of Medical and Life Sciences,

Sunway University, Malaysia.

Dr. Priyadarshini Moharkonda (hod-psychology@dgvaishnavcollege.edu.in)

Department of Psychology,

Dwaraka Doss Goverdhan Doss Vaishnav College,

Affiliated to University of Madras,

Chennai, India.

For matters regarding research ethics of this study, please email the Research Ethics Committee at: researchethics@sunway.edu.my

Statement of consent:

I understand that this research study has been reviewed and approved by the Research Ethics Committee, Department of Psychology, School of Medical and Life Sciences, Sunway University (Ethics Approval No.: PGSUREC2021/038)

I have read and understood the information provided to me. I have asked any question I may have regarding the experimental procedure and they have been answered to my satisfaction.

I also understand that my personal information in this research will be treated as anonymous and confidential and only for research documentation.

By checking the 'Yes' box below, I am stating that I am at least 18 years old and I willingly consent to participate in this research study.

☐ Yes

☐ No

Appendix B
Demographic Details Sheet

1. Age: ____
2. Gender
 - a) Male: ____
 - b) Female: ____
 - c) Non-binary: ____
 - d) Other: ____
3. Ethnicity:
 - a) Malay: ____
 - b) Chinese: ____
 - c) Indian: ____
 - d) Other than the mentioned (please indicate): ____
4. What is your highest education level?
 - a) SPM/O-levels (or equivalent): ____
 - b) Pre-university (Foundation/Diploma/A-levels, etc.): ____
 - c) Undergraduate degree: ____
 - d) Master's degree: ____
 - e) PhD (or alike): ____
 - f) Other (please indicate): _____
5. Are you currently studying?
 - a) Full-time student: ____
 - b) Part-time student: ____
 - c) Not a student: ____
6. Are you currently working? (If you are a student who is also working, please also answer this question)
 - a) Full-time employee: ____
 - b) Part-time employee: ____
 - c) Not employed: ____
 - d) Looking for employment: ____

Appendix C

Debriefing Sheet

Thank you for your participation in this study. You were asked about your beliefs about emotion and your usage of emotion regulation strategies.

You were also asked questions about mental well-being, anxiety symptoms and depressive symptoms.

If you found that some questions or aspects of the study were distressing, a list of mental health services are provided here. Please feel free to reach out for assistance to speak to a qualified clinician/counsellor/trained professional at:

1. Malaysia Mental Health Association (MMHA)

Phone.: 03-27806803

Email: admin@mmha.org.my

Website: <https://mmha.org.my/>

Facebook page: <https://www.facebook.com/pg/MMHAOfficial/services/>

Information on psychological support services: <https://mmha.org.my/find-help/psychological-support-services/>

2. Mental Illness Awareness & Support Association (MIASA)

Office no. :03-79321409

Phone no.: 019-2362423

Email: miasa.malaysia@gmail.com

Website: <https://miasa.org.my/>

Crisis Management: <https://miasa.org.my/crisisteam2021.html>

3. Talian Kasih hotline:15999

Available 24 hours everyday.

WhatsApp: 019-2615999

Website: <https://www.kpwkm.gov.my/kpwkm/index.php?r=portal/full&id=NGtVYXZIMjRqM3diWmV2K005Mm9Hdz09>

4. Befrienders KL

Hotline for emotional support: 03-76272929

or Email: sam@befrienders.org.my

Website: <https://www.befrienders.org.my/>

If you have any inquiries about the study or would like to know the results of this study, please contact us at:

Researcher:

Shorolipi Emma Chaudhury (14087357@imail.sunway.edu.my)

MSc in Psychology

Department of Psychology,

School of Medical and Life Sciences,
Sunway University, Malaysia.

Research Supervisors:

Prof. Alvin Ng Lai Oon (alvinn@sunway.edu.my)

Department of Psychology,
School of Medical and Life Sciences,
Sunway University, Malaysia.

Dr. Priyadarshini Moharkonda (hod-psychology@dgvaishnavcollege.edu.in)

Department of Psychology,
Dwaraka Doss Goverdhan Doss Vaishnav College,
Affiliated to University of Madras,
Chennai, India.

As a token of appreciation, we would like to present you with FREE copies of e-books on mental health that includes information about awareness, knowledge, tools and resources for your benefit.

1. Reaching Out: Your Easy Guide to Finding Affordable Quality Online Therapy: A Practitioner's Perspective (by Ellen Whyte & Alvin Ng Lai Oon)

This practical guide is packed with useful information, and written in everyday English, it will help you make informed decisions. It is written by an academic and a practitioner, so you benefit from a wide perspective.

Dr Alvin Ng is a professor of psychology, the Founding President of the Malaysian Society of Clinical Psychology, and the author of journal articles and scientific publications.

Ellen Whyte is a Scottish-Dutch counselling psychologist in Malaysia. She has an international practice with clients based in Southeast Asia, the Middle East, and North America. The book offers ways in finding online therapy and guides people on how to seek for mental health help as best as possible.

Available to read/download:

https://books.google.com.my/books/about/Reaching_Out_Your_Easy_Guide_to_Finding.html?id=hCkKEAAAQBAJ&redir_esc=y

<https://www.scribd.com/book/485114381/Reaching-Out-Your-Easy-Guide-to-Finding-Affordable-Quality-Online-Therapy-A-Practitioner-s-Perspective>

<https://play.google.com/store/books/details?id=hCkKEAAAQBAJ>

Download & Book Reviews: <https://www.goodreads.com/book/show/55942136-reaching-out>

2. *Malaysia's 1st Mental Health Handbook (launched by MMHA, Malaysian, Malaysian Psychiatric Association & Pfizer Malaysia)*

This publicly available mental health handbook was launched by MMHA, Malaysian, Malaysian Psychiatric Association & Pfizer Malaysia.

This is the first mental health handbook in Malaysia which is designed to increase awareness on mental health for Malaysians.

It will also help Malaysians recognize signs and symptoms of mental health of mental health issues and seek professional help. It provides invaluable and credible information for all Malaysians and provides a list of mental health services throughout Malaysia.

Available here:

https://www.myhealthmylife.com.my/sites/default/files/2019-11/Mental_Health_Booklet_181119.pdf

Thank you for your participation in this study.

Sincerely,

Shorolipi Emma Chaudhury (Researcher)

Appendix D

The 4-item Implicit Theories of Emotion Scale (ITES) as modified by De Castella et al. (2013)

In the following questions, we are interested in your thoughts about your personal ability to change the emotions you experience.

Please read each statement and rate your agreement between 1 (strongly disagree) to 5 (strongly agree). There are no right or wrong answers. We are just interested in your views.

	1 (strongly disagree)	2	3	4	5 (strongly agree)
1. The truth is, I have very little control over my emotions	1	2	3	4	5
2. No matter how hard I try, I can't really change the emotions that I have.	1	2	3	4	5
3. I can learn to control my emotions	1	2	3	4	5
4. If I want to, I can change the emotions that I have	1	2	3	4	5

Appendix E

The Emotion Regulation Questionnaire (ERQ)

Instructions and Items:

We would like to ask you some questions about your emotional life, in particular, how you control (that is, regulate and manage) your emotions. The questions below involve two distinct aspects of your emotional life. One is your emotional experience, or what you feel like inside. The other is your emotional expression, or how you show your emotions in the way you talk, gesture, or behave. Although some of the following questions may seem similar to one another, they differ in important ways. For each item, please answer using the following scale:

1	2	3	4	5	6	7
strongly disagree			neutral			strongly agree

1. ____ When I want to feel more *positive* emotion (such as joy or amusement), I *change what I'm thinking about*.
2. ____ I keep my emotions to myself.
3. ____ When I want to feel less *negative* emotion (such as sadness or anger), I *change what I'm thinking about*.
4. ____ When I am feeling *positive* emotions, I am careful not to express them.
5. ____ When I'm faced with a stressful situation, I make myself *think about it* in a way that helps me stay calm.
6. ____ I control my emotions by *not expressing them*.
7. ____ When I want to feel more *positive* emotion, I *change the way I'm thinking* about the situation.
8. ____ I control my emotions by *changing the way I think* about the situation I'm in.
9. ____ When I am feeling *negative* emotions, I make sure not to express them.
10. ____ When I want to feel less *negative* emotion, I *change the way I'm thinking* about the situation.

Reference:

Gross, J.J., & John, O.P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85, 348-362.

Appendix F

The Interpersonal Emotion Regulation Questionnaire (IERQ)

Below is a list of statements that describe how people use others to regulate their emotions. Please read each statement and then circle the number next to it to indicate how much this is true for you by using a scale from 1 (not true for me at all) to 5 (extremely true for me). Please do this for each statement. There are no right or wrong answers.	
1-----2-----3-----4-----5 not true for me at all a little bit moderately quite a bit extremely true for me	
1. It makes me feel better to learn how others dealt with their emotions.	1—2—3—4—5
2. It helps me deal with my depressed mood when others point out that things aren't as bad as they seem.	1—2—3—4—5
3. I like being around others when I'm excited to share my joy.	1—2—3—4—5
4. I look for other people to offer me compassion when I'm upset.	1—2—3—4—5
5. Hearing another person's thoughts on how to handle things helps me when I am worried.	1—2—3—4—5
6. Being in the presence of certain other people feels good when I'm elated.	1—2—3—4—5
7. Having people remind me that others are worse off helps me when I'm upset.	1—2—3—4—5
8. I like being in the presence of others when I feel positive because it magnifies the good feeling.	1—2—3—4—5
9. Feeling upset often causes me to seek out others who will express sympathy.	1—2—3—4—5
10. When I am upset, others make me feel better by making me realize that things could be a lot worse.	1—2—3—4—5
11. Seeing how others would handle the same situation helps me when I am frustrated.	1—2—3—4—5
12. I look to others for comfort when I feel upset.	1—2—3—4—5
13. Because happiness is contagious, I seek out other people when I'm happy.	1—2—3—4—5
14. When I am annoyed, others can soothe me by telling me not to worry.	1—2—3—4—5
15. When I'm sad, it helps me to hear how others have dealt with similar feelings.	1—2—3—4—5
16. I look to other people when I feel depressed just to know that I am loved.	1—2—3—4—5
17. Having people telling me not to worry can calm me down when I am anxious.	1—2—3—4—5

18. When I feel elated, I seek out other people to make them happy.	1—2—3—4—5
19. When I feel sad, I seek out others for consolation.	1—2—3—4—5
20. If I'm upset, I like knowing what other people would do if they were in my situation.	1—2—3—4—5

Citation: Hofmann, S. G., Carpenter, J. K., & Curtiss, J. (2016). Interpersonal Emotion Regulation Questionnaire (IERQ): Scale development and psychometric characteristics. *Cognitive Therapy and Research*, 40, 341-356. doi: 0.1007/s10608-016-9756-2

Appendix G

The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks.

Statements	None of the time	Rarely	Some of the time	Often	All the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) © University of Warwick 2006, all rights reserved.

Appendix H

The Patient Health Questionnaire-9 (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems? <i>(Use “ ✓ ” to indicate your answer)</i>	Not at all	Several days	More than half the days	Nearly everyday
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all ☐ **Somewhat difficult** ☐ **Very difficult** ☐ **Extremely difficult** ☐

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Appendix I

The Generalized Anxiety Disorder-7 (GAD-7)

Over the last 2 weeks, how often have you been bothered by the following problems? <i>(Use “ ✓ ” to indicate your answer)</i>	Not at all	Several days	More than half the days	Nearly everyday
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

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Appendix J

About E-Books

1. Reaching Out: Your Easy Guide to Finding Affordable Quality Online Therapy: A Practitioner's Perspective (by Ellen Whyte & Alvin Ng Lai Oon)

Download & Book Reviews: <https://www.goodreads.com/book/show/55942136-reaching-out>

Available to read/download:

https://books.google.com.my/books/about/Reaching_Out_Your_Easy_Guide_to_Finding.html?id=hCkKEAAAQBAJ&redir_esc=y

<https://www.scribd.com/book/485114381/Reaching-Out-Your-Easy-Guide-to-Finding-Affordable-Quality-Online-Therapy-A-Practitioner-s-Perspective>

<https://play.google.com/store/books/details?id=hCkKEAAAQBAJ>

Information:

This practical guide is packed with useful information, and written in everyday English, it will help you make informed decisions. It is written by an academic and a practitioner, so you benefit from a wide perspective. Dr Alvin Ng is a professor of psychology, the Founding President of the Malaysian Society of Clinical Psychology, and the author of journal articles and scientific publications. Ellen Whyte is a Scottish-Dutch counselling psychologist in Malaysia. She has an international practice with clients based in Southeast Asia, the Middle East, and North America. The book offers ways in finding online therapy and guides people on how to seek for mental health help as best as possible.

2. Malaysia's 1st Mental Health Handbook

Available here:

https://www.myhealthmylife.com.my/sites/default/files/2019-11/Mental_Health_Booklet_181119.pdf

Information:

This publicly available mental health handbook was launched by MMHA, Malaysian, Malaysian Psychiatric Association & Pfizer Malaysia. This is the first mental health handbook in Malaysia which is designed to increase awareness on mental health for Malaysians. It will also help Malaysians recognize signs and symptoms of mental health of mental health issues and seek professional help. It provides invaluable and credible information for all Malaysians and provides a list of mental health services throughout Malaysia.

Appendix K

Email Attachment on Permission to use the modified 4-Item ITES

5/6/2021

Email - SHOROLIPI EMMA CHAUDHURY - Outlook

Re: Seeking permission to utilise the modified 4-item ITES for Malaysian study

SHOROLIPI EMMA CHAUDHURY <14087357@imail.sunway.edu.my>

Sun 02/05/2021 1:44 PM

To: Krista De Castella <krista1@gmail.com>

Hi Krista,

Thank you for clarifying 😊 I will keep in touch with you on my research.

Happy Sunday to you!

Sincerely,
Shorolipi Emma. (Lippy)
Sunway University.

From: Krista De Castella <krista1@gmail.com>

Sent: 02 May 2021 4:19 AM

To: SHOROLIPI EMMA CHAUDHURY <14087357@imail.sunway.edu.my>

Subject: Re: Seeking permission to utilise the modified 4-item ITES for Malaysian study

Hi Lippy,

Yes - you can reverse code the entity items and have the whole scale measure incremental beliefs or you can reverse code the incremental items No. 3 and 4 and have the whole scale measure entity beliefs.

Good luck with your research.

Warmly,
Krista

On Fri, Apr 30, 2021 at 10:36 PM SHOROLIPI EMMA CHAUDHURY <14087357@imail.sunway.edu.my> wrote:

Hi Krista,

Thank you for your email! Okay, then in that case I would follow the order according to your image under Self-Theory.

When you mentioned reverse code, do you mean to reverse code only the entity belief items as in:

1. The truth is, I have very little control over my emotions.
2. No matter how hard I try, I can't really change the emotions I have

And then, would you average the score across all items to see if higher scores indicate incremental beliefs and lower scores would be entity beliefs?

Sincerely,
Lippy
Sunway University.

From: Krista De Castella <krista1@gmail.com>

Sent: 01 May 2021 1:38 AM

<https://outlook.office.com/mail/inbox/id/AAQkADcyOWIwODAyLWM5ZTIhNGYyZC04NTJlTYzZjExMmQ1YTtyxYwAQABAgIo%2B8WJNuB8uc8ld2s...> 1/3

To: SHOROLIPI EMMA CHAUDHURY <14087357@iemail.sunway.edu.my>

Subject: Re: Seeking permission to utilise the modified 4-item ITES for Malaysian study

Hi Lippy,

Thanks for your email. That looks right. Here's the scale from my research. The items are currently framed as entity beliefs. If you reverse code they reflect incremental beliefs. I tend not to use incrementally worded items as people tend to endorse them over time and I think they are less accurate for assessing the construct. Good luck with your research!

Warmly,
Krista

Table 5: Implicit theories of Emotions Scale Items and Reliabilities (Study 2, $n = 216$)

Implicit Theories of Emotion (General, $\alpha = .77$)	Implicit Theories of Emotions (Self-Theory $\alpha = .79$)
Stem: In the following questions we are interested in your thoughts about emotions. There are no right or wrong answers. We are just interested in your views. Using the scale below, please indicate the extent to which you agree or disagree with the following statements. Scale Items: 1. The truth is people have very little control over their emotions. 2. No matter how hard they try, people can't really change the emotions they have. 3. Everyone can learn to control their emotions. 4. If they want to, people can change the emotions that they have.	Stem: In the following questions we are interested in your thoughts about your personal ability to change the emotions you experience. There are no right or wrong answers. We are just interested in your views. Scale Items: 1. The truth is, I have very little control over my emotions. 2. No matter how hard I try, I can't really change the emotions that I have. 3. I can learn to control my emotions. 4. If I want to, I can change the emotions that I have.

On Thu, Apr 29, 2021 at 10:23 PM SHOROLIPI EMMA CHAUDHURY <14087357@iemail.sunway.edu.my> wrote:

Dear Dr. De Castella,

My name is Shorolipi Emma, and I am pursuing my MSc in Psychology at Sunway University, Malaysia. For my thesis, I am keenly looking into implicit beliefs about emotion and emotion regulation.

I am seeking your kind permission to utilise the modified 4-item ITES as in De Castella et al. (2013) on personal beliefs in my study.

I have searched for the scale but it does not seem to be directly available as pdf anywhere. So, I've actually typed it out according to the items and rating instructions as outlined within your article, De Castella et al. (2013) as adapted from Tamir et al. (2007).

I have attached it as word document here, for your kind perusal. I hope the instructions and items on the modified scale are accurate and fully reflect the way it is to be presented.

May I also ask, how exactly may I separate entity believers from incremental believers according to your scoring instructions? (as it is two ends of the same scale)

Looking forward to hearing from you. I will be happy to share more about my study and also share my findings once I complete the entire programme here.

I wish you well during these trying times, Dr. De Castella. Stay safe, stay well and take care.

<https://outlook.office.com/mail/inbox/id/AAQkADcyOWlwODAyLWM5ZTIhNGYyZC04NTJlTYzZjExMmQ1YTtyYXVwAQABAgIoI%2B8WJNuB8uc8ld2s...> 2/3

Sincerely,
Shorolipi Emma. (Lippy)
Sunway University.

"All students are issued with an iMail email account. This is the official method by which Sunway will communicate with you on a range of administrative and academic matters. When corresponding with Sunway via email, you must use your iMail email account. Using the iMail email account helps to ensure your identity and validity of the communication."

"All students are issued with an iMail email account. This is the official method by which Sunway will communicate with you on a range of administrative and academic matters. When corresponding with Sunway via email, you must use your iMail email account. Using the iMail email account helps to ensure your identity and validity of the communication."

Appendix L

Email Attachment on Permission to use the ERQ

5/6/2021

Email - SHOROLIPI EMMA CHAUDHURY - Outlook

Re: Seeking permission to utilise the ERQ-cognitive reappraisal for Malaysian study

SHOROLIPI EMMA CHAUDHURY <14087357@iemail.sunway.edu.my>

Thu 06/05/2021 11:26 AM

To: James Gross <gross@stanford.edu>

Thank you, Professor Gross.

Sincerely,
Shorolipi Emma. (Lippy)
Sunway University.

From: James Gross <gross@stanford.edu>

Sent: 05 May 2021 9:28 PM

To: SHOROLIPI EMMA CHAUDHURY <14087357@iemail.sunway.edu.my>

Subject: Re: Seeking permission to utilise the ERQ-cognitive reappraisal for Malaysian study

You're welcome to use the ERQ, which you may find on our website, URL below.

James J. Gross, Ph.D.
Ernest R. Hilgard Professor of Psychology
Bass University Fellow in Undergraduate Education

Department of Psychology
Stanford University
Stanford, CA 94305-2130
Tel: (650) 723-1281
Fax: (650) 725-5699
Email: gross@stanford.edu

Director, Stanford Psychophysiology Laboratory
<http://spl.stanford.edu>

Director, Stanford Psychology One Program
<http://psychone.stanford.edu>

On Wed, May 5, 2021 at 12:24 AM SHOROLIPI EMMA CHAUDHURY

<14087357@iemail.sunway.edu.my> wrote:

Dear Professor Gross,

My name is Shorolipi Emma, and I am pursuing my MSc in Psychology at Sunway University, Malaysia. For my thesis, I am keenly looking into emotion regulation and implicit beliefs about emotion.

I am seeking your kind permission to utilise your well-known Emotion Regulation Questionnaire (ERQ). For my study, I will particularly focus on the 6 items on cognitive reappraisal from your article, Gross & John (2003).

<https://outlook.office.com/mail/inbox/id/AAQkADcyOWlwODAyLWM5ZTIhNGYyZC04NTJlTYzZjExMmQ1YTtyYyYwAQAIhZNDv8oG5HoPs44m9CVoE...> 1/2

I have attached the ERQ-cognitive reappraisal items as word document here, for your kind perusal. I hope the instructions and items are accurate and fully reflect the way it is to be presented.

Looking forward to hearing from you. I will be happy to share more about my study and also share my findings once I complete the entire programme here.

I wish you well during these trying times, Professor Gross. Stay safe, stay well and take care.

Sincerely,
Shorolipi Emma. (Lippy)
Sunway University.

"All students are issued with an iMail email account. This is the official method by which Sunway will communicate with you on a range of administrative and academic matters. When corresponding with Sunway via email, you must use your iMail email account. Using the iMail email account helps to ensure your identity and validity of the communication."

Appendix M

Email Attachment to Author on Licensing Details to use the WEMWBS

5/10/2021

Email - SHOROLIP EMMA CHAUDHURY - Outlook

From: Stewart-Brown, Sarah <Sarah.Stewart-Brown@warwick.ac.uk>
Sent: 07 May 2021 5:58 PM
To: SHOROLIP EMMA CHAUDHURY <14087357@imail.sunway.edu.my>; WEMWBS, Resource <WEMWBS@warwick.ac.uk>
Subject: Re: Seeking permission to utilise the WEMWBS for a Malaysian study

Dear Lippy

Thank you for your inquiry. You need to register your intention to use WEMWBS (see below). There is not cost if the scale is to be used for academic study
Your reproduction is correct but does not have the copyright statement which is essential
When you register you will get access to a website that has both the measures with the copyright statements and much more useful information

Further information on the research behind the scale and how to use it is available on our website <https://warwick.ac.uk/wemwbs>

WEMWBS is protected by copyright. Those wishing to use WEMWBS can obtain a licence to do so. Please go to <https://warwick.ac.uk/wemwbs/using> for information on the type of licence you will require and details on how to apply.

A free of charge 'non-commercial' licence is available to public sector organisations, charities, registered social enterprises and to researchers employed in HEIs. If you want a record of your non-commercial license be sure to tick the box that requests an automated email response.

Any further enquiries can be directed to wemwbs@warwick.ac.uk

With Best Wishes
Sarah Stewart-Brown
Emeritus Professor of Public Health

New research on (S)WEMWBS

The Economics of mental well-being: A prospective study estimating associated health care costs and sickness benefit transfers in Denmark.

Ziggi Ivan Santini, Hannah Becher, Maja Bæksgaard Jørgensen, Michael Davidsen, Line Nielsen, Carsten Hinrichsen, Katrine R. Madsen, Charlotte Meilstrup, Ai Koyanagi, Sarah Stewart-Brown, David McDaid, Vibeke Koushede. The European Journal of Health Economics <https://link.springer.com/article/10.1007/s10198-021-01305-0>

Responsiveness of the short Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS): Evaluation in a Clinical Sample. Neha Shah, Mizaya Cader, William Andrews, Dilini Wijesekera Sarah Stewart-Brown
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6303870/>

Predictors of high and low mental well-being and common mental disorders: Findings from a Danish population-based study

Ziggi Ivan Santini^a, Sarah Stougaard^b, Ai Koyanagi^{c,d}, Annette Kjær Ersbøll^a, Line Nielsen^a, Carsten Hinrichsen^a, Katrine R. Madsen^a, Charlotte Meilstrup^a, Sarah Stewart-Brown^e, Vibeke Koushede^a
<https://academic.oup.com/eurpub/advance-article/doi/10.1093/eurpub/ckaa021/5762310>

Conversations about (S)WEMWBS

"Scandinavia may not be the happiest place on earth after all" <http://theconversation.com/scandinavia-may-not-be-the-happiest-place-on-earth-after-all-110382>

<https://outlook.office365.com/mail/inbox/id/AAQkADcyOWIwODAyLWM5ZTIhNGYyZC04NTJlTYzZjExMmQ1YTUxYwQAF83n1wXNaFNiWey1CpsiS...> 2/3

From: SHOROLIPI EMMA CHAUDHURY <14087357@iemail.sunway.edu.my>
Date: Thursday, 6 May 2021 at 05:35
To: Stewart-Brown, Sarah <Sarah.Stewart-Brown@warwick.ac.uk>
Subject: Seeking permission to utilise the WEMWBS for a Malaysian study

Dear Professor Stewart-Brown,

My name is Shorolipi Emma, and I am pursuing my MSc in Psychology at Sunway University, Malaysia. For my thesis, I am keenly looking into emotion regulation, well-being, anxiety and depressive symptoms.

I am seeking your kind permission to utilise the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) for my study.

I have attached the WEMWBS as word document here, for your kind perusal. I hope the instructions and items are accurate and fully reflect the way it is to be presented.

Looking forward to hearing from you. I will be happy to share more about my study and also share my findings once I complete the entire programme here.

I wish you well during these trying times, Professor Stewart-Brown. Stay safe, stay well and take care.

Sincerely,
Shorolipi Emma. (Lippy)
Sunway University.

"All students are issued with an iMail email account. This is the official method by which Sunway will communicate with you on a range of administrative and academic matters. When corresponding with Sunway via email, you must use your iMail email account. Using the iMail email account helps to ensure your identity and validity of the communication."

"All students are issued with an iMail email account. This is the official method by which Sunway will communicate with you on a range of administrative and academic matters. When corresponding with Sunway via email, you must use your iMail email account. Using the iMail email account helps to ensure your identity and validity of the communication."

Appendix N

Email Attachment of Non-Commercial License Approved to use the WEMWBS

5/10/2021

Email - SHOROLIPi EMMA CHAUDHURY - Outlook

Submission (ID: 538153959) receipt for the submission of
/fac/sci/med/research/platform/wemwbs/using/non-commercial-licence-registration

no-reply@warwick.ac.uk <no-reply@warwick.ac.uk>

Mon 10/05/2021 3:51 PM

To: SHOROLIPi EMMA CHAUDHURY <14087357@iemail.sunway.edu.my>

Thank you for completing the registration for a Licence to use WEMWBS for non-commercial purposes.

You now have access to the scales and the associated resources here on our website:

<https://warwick.ac.uk/wemwbs/using/register/resources>

We suggest you bookmark this page for future reference.

The information declared on your Registration Form is documented below. Please retain a copy of this email as a record of your Licence together with the Terms and Conditions you have accepted.

https://warwick.ac.uk/wemwbs/using/non-commercial-licence-registration/shrink-wrap_licence_-_wemwbs_non-commercial_v3_8.9.20.pdf.

If you have any questions please contact us via email: wemwbs@warwick.ac.uk

Question: Type of use

Answer:

Survey

Question: If other, please specify

Answer:

Question: Type of intervention (if applicable) Tick all that apply

Answer:

Other (eg routine NHS provision; other service provision)

Question: If other, please specify

Answer:

Survey to be used for academic study

Question: Field of Use

(Tick all that apply)

Answer:

University or college

Question: Preferred version of

(Note – both versions of can be used under a single licence)

Answer:

SWEMWBS - Shortened 7 item scale

Question: Age of Participants (Tick all that apply)

Answer:

18-64

Question: How many participants are you planning to use with? (Scale of use)

Answer:

<https://outlook.office365.com/mail/inbox/id/AAQkADcyOWIwODAyLWM5ZTlNGYyZC04NTJlLTZzZjExMmQ1YTUxYwAQACHJCu1Zv3JDk2wDghT4q...> 1/3

5/10/2021

Email - SHOROLIPi EMMA CHAUDHURY - Outlook

251-500

Question: Start Date

Answer:

10/05/2021

Question: End Date

Answer:

31/12/2023

Question: Territories of Use: In which geographical areas will you be using ? (tick all that apply)

Answer:

Asia

Question: In which language(s) are you planning to use ?

Tick all that apply

Answer:

English

Question: If other, please specify

Answer:

Question: Organisation name

Answer:

Sunway University

Question: Type of organisation

Answer:

University

Question: If other, please specify

Answer:

Question: Size of Organisation (no. of employees)

Answer:

501-5000

Question: Organisation Address

Answer:

Sunway University, No. 5, Jalan Universiti, Bandar Sunway, 47500 Selangor Darul Ehsan, Malaysia.

Question: Country of Organisation

Answer:

Malaysia

Question: Website

Answer:

Question: Contact Name

<https://outlook.office365.com/mail/inbox/id/AAQKADcyOWlwODAyLWM5ZTIhNGYyZC04NTJLTyZzJExMmQ1YTtyYwAQACHj/Cu1Zv3JDk2wDghT4q...> 2/3

5/10/2021

Email - SHOROLIPi EMMA CHAUDHURY - Outlook

Answer:
Shorolipi Emma Chaudhury

Question: Job Title

Answer:
Student

Question: If other, please specify

Answer:

Question: Email

Answer:
14087357@iemail.sunway.edu.my

Question: I have read and agreed to the terms of the Non-Commercial Licence

Please print and retain a copy for your reference

Answer:

Yes

Question: I agree to my contact details being shared with third parties for the purposes of product development of

Answer:

No

<https://outlook.office365.com/mail/inbox/id/AAQkADcyOWlwODAyLWM5ZTItNGYyZC04NTJlLTZyZjExMmQ1YTlxYwAQACHJCu1Zv3JDk2wDghT4q...> 3/3

Appendix O

Email Attachment on Permission to use the IERQ

5/6/2021

Email - SHOROLIPI EMMA CHAUDHURY - Outlook

Re: Seeking permission to utilise the IERQ for a Malaysian study

SHOROLIPI EMMA CHAUDHURY <14087357@imail.sunway.edu.my>

Thu 06/05/2021 11:50 AM

To: Hofmann, Stefan G <shofmann@bu.edu>

Thank you, Professor Hofmann.

Sincerely,
Shorolipi Emma. (Lippy)
Sunway University.

From: Hofmann, Stefan G <shofmann@bu.edu>

Sent: 06 May 2021 11:37 AM

To: SHOROLIPI EMMA CHAUDHURY <14087357@imail.sunway.edu.my>

Subject: Re: Seeking permission to utilise the IERQ for a Malaysian study

You are welcome to use it.

Best,
SGH

Stefan G. Hofmann, Ph.D.

Professor of Psychology

Department of Psychological and Brain Sciences

Boston University

900 Commonwealth Avenue, 2nd Floor,

Boston, MA 02215

Tel: (617) 828-2005

Fax: (617) 353 9609

www.bostonanxiety.org

Editor, [Cognitive Therapy and Research](#)

From: SHOROLIPI EMMA CHAUDHURY <14087357@imail.sunway.edu.my>

Sent: Wednesday, May 5, 2021 11:22 PM

To: Hofmann, Stefan G <shofmann@bu.edu>

Subject: Seeking permission to utilise the IERQ for a Malaysian study

Dear Professor Hofmann,

My name is Shorolipi Emma, and I am pursuing my MSc in Psychology at Sunway University, Malaysia. For my thesis, I am keenly looking into emotion regulation and beliefs about emotion.

I am seeking your kind permission to utilise your Interpersonal Emotion Regulation Questionnaire (IERQ) in my study.

I have attached the IERQ as word document here, for your kind perusal. I hope the instructions and items are accurate and fully reflect the way it is to be presented.

<https://outlook.office.com/mail/inbox/id/AAQkADcyOWlwODAyLWM5ZTIhNGYyZC04NTJLTyZzJExMmQ1YTYxYwAQAHJz4czlp%2BhKuJYHvIwz6MD...> 1/2

5/6/2021

Email - SHOROLIPi EMMA CHAUDHURY - Outlook

Looking forward to hearing from you. I will be happy to share more about my study and also share my findings once I complete the entire programme here.

I wish you well during these trying times, Professor Hofmann. Stay safe, stay well and take care.

Sincerely,
Shorolipi Emma. (Lippy)
Sunway University.

"All students are issued with an iMail email account. This is the official method by which Sunway will communicate with you on a range of administrative and academic matters. When corresponding with Sunway via email, you must use your iMail email account. Using the iMail email account helps to ensure your identity and validity of the communication."

<https://outlook.office.com/mail/inbox/id/AAQkADcyOWIwODAyLWM5ZTIhNGYyZC04NTJILTYzZjExMmQ1YTYxYwAQAHJz4czlp%2BhKuYHwIwz8M0...> 2/2

Appendix P

Permission Granted to use the WEMWBS

5/10/2021

Thank you for registering

[Coronavirus \(Covid-19\): Latest updates and information](#)



Thank you for registering

Thank you for registering. You now have permission to use WEMWBS in the manner detailed in your submission.

The resources below include both versions of WEMWBS along our guidelines on use and supplementary information to assist you in the analysis of any data collected.

14-item scale WEMWBS

[Download the original, 14-item scale](#) . This provides a fuller picture of mental wellbeing with a better balance of feeling and functioning items than the 7-item scale WEMWBS. It is preferred in situations where it is valuable to give study participants a picture of their mental wellbeing.

Appendix Q

Feedback Form for Content Validity for the IERQ

This feedback form contains 20 statements under 4 domains from the Interpersonal Emotion Regulation Questionnaire.

Participants are asked to rate the relevance of each statement according to each domain. The rating will be based on the Content Validity Index (CVI) criteria outlined below.

For each Content Validity Index (CVI) criteria, please give your rating in the box next to each statement. Here are the CVI criteria and rating scale:

CVI criteria	Explanation
Relevance	Has relevance or connection to the domain
Simplicity	It is short and summarised
Clarity	The meaning is clear and coherent
Ambiguity	Vague that it may have two or more interpretations

Rating scale:

1	2	3	4
<i>Not relevant</i>	<i>Need some revision</i>	<i>Relevant but needs minor revision</i>	<i>Very relevant</i>

Domain: Enhancing Positive Affect						
CVI Criteria		<i>Relevance</i>	<i>Simplicity</i>	<i>Clarity</i>	<i>Ambiguity</i> (*hint: higher rating=more ambiguous)	<i>Comment</i>
Item no.						
3	I like being around others when I'm excited to share my joy.					
6	Being in the presence of certain other people feels good when I'm elated.					
8	I like being in the					

	presence of others when I feel positive because it magnifies the good feeling.					
13	Because happiness is contagious, I seek out other people when I'm happy.					
18	When I feel elated, I seek out other people to make them happy.					

Domain: Perspective Taking						
CVI Criteria		<i>Relevance</i>	<i>Simplicity</i>	<i>Clarity</i>	<i>Ambiguity</i> (*hint: higher rating=more ambiguous)	<i>Comment</i>
Item no.						
2	It helps me deal with my depressed mood when others point out that things aren't as bad as they seem.					
7	Having people remind me that others are worse off helps me					

	when I'm upset.					
10	When I am upset, others make me feel better by making me realize that things could be a lot worse.					
14	When I am annoyed, others can soothe me by telling me not to worry.					
17	Having people telling me not to worry can calm me down when I am anxious.					

Domain: Soothing						
CVI Criteria		<i>Relevance</i>	<i>Simplicity</i>	<i>Clarity</i>	<i>Ambiguity</i> (*hint: higher rating=more ambiguous)	Comment
Item no.						
4	I look for other people to offer me compassion when I'm upset.					
9	Feeling upset often causes me to seek out					

	others who will express sympathy.					
12	I look to others for comfort when I feel upset.					
16	I look to other people when I feel depressed just to know that I am loved.					
19	When I feel sad, I seek out others for consolation.					

Domain: Social Modeling						
CVI Criteria		<i>Relevance</i>	<i>Simplicity</i>	<i>Clarity</i>	<i>Ambiguity</i> (*hint: higher rating=more ambiguous)	Comment
Item no.						
1	It makes me feel better to learn how others dealt with their emotions.					
5	Hearing another person's thoughts on how to handle things helps me when I am worried.					
11	Seeing how others					

	would handle the same situation helps me when I am frustrated.					
15	When I'm sad, it helps me to hear how others have dealt with similar feelings.					
20	If I'm upset, I like knowing what other people would do if they were in my situation.					

Overall comments:

Suggestions for improvement:

Appendix R

Tables for Comments and Suggestions on IERQ

Table R1

Comments from Participants for Each Item

Domain	Item no.	Comments
Enhancing Positive Affect	3	“Because surrounded with people that gave me positive vibes, influence my mood also.”
	6	“Maybe could be worded more simply?” “I dont know exactly how, but i feel like this can be worded more clearly.”
	8	“Because surrounded with people that gave me positive vibes, influence my mood also.”
	13	“Is it because my intention is to make others happy?” “Like to share happiness with others?”
	18	“Just a thought. Im not sure if spreading my joy will make others happy. Cant really judge what others are truly feeling. But spreading the joy and seeing others are happy for me do enhance my happiness.”
Perspective Taking	2	-
	7	“I personally do not agree that "others are worse off" is a comforting notion but I understand how some people may derive comfort from that.”
	10	“It makes me feel worse.”
	14	“Telling me not to worry makes me even more annoyed. But since I don't have any good suggestions of better items to include I accept the whole questionnaire as it is.” “I'd get more annoyed and leave the person.”
	17	“Telling me not to worry makes me even more annoyed. But since I don't have any good suggestions of better items to include I accept the whole questionnaire as it is.” “Get more anxious because they're not listening and unable to understand my thoughts and felt more crazier.”
Soothing	4	-
	9	“Maybe could be re-worded to: When I am feeling upset, I seek out others who will express sympathy.”
	12	“Maybe could be re-worded to: I look for comfort in other people when I feel upset.”
	16	“Maybe could be re-worded to: When I feel depressed, I look to others to know that I am loved.” “look to or look *for people?”
	19	“Maybe could be re-worded to: When I feel sad, I seek consolation in other people.” “This whole domain is wonderful. Keep it as it is.”
Social Modeling	1	-
	5	-

- | | |
|----|--|
| 11 | “Maybe could be re-worded to: When I am frustrated, seeing how others would handle the same situation helps me.” |
| 15 | - |
| 20 | “Sometimes i seek for other advice maybe it can be applicable with my situation.” |
-

Note. Comments received for each item under the 4 domains in the IERQ. The dash sign (-) =No comments.

Table R2*Overall Comments and Suggestions for Improvement by Participants*

Participants	Overall Comments	Suggestions for improvement
1	-	-
2	“Well done! I look forward to reading the findings from this study, it's very relevant and important research.”	“Perhaps the gender identification at the beginning of the survey could be non-binary to reflect the full gender spectrum?”
3	“Easy to read and understand.”	“Have the questions categorized in domains for when participants answer the questions.”
4	“Good.”	-
5	“I think some questions are a tiny bit repetitive. But its all good.”	-
6	“Certainly Very Long.”	“Could be more concise and to the point?”
7	“New to me and currently needed kind of study.”	“Good enough.”
8	“It's alright. Seems pretty comprehensive.”	“Some sentence structures could use a bit of revision.”
9	“Can be design more easily to select.”	“Too many question.”
10	“Seems okay to me overall. Also all the best for your study.”	“None that I can offer.”
11	-	-
12	-	-
13	“Interesting survey.”	-
14	-	-
15	“This is a good survey for those who are struggling with mental illness and it helps people realise how important their mental health are.”	-
16	“All okay your questions.”	-
17	-	-
18	“The questionnaire is too long.”	“less domains.”
19	“Might need a better clarification on the scaling.”	“Overall quite a straightforward questionnaire.”
20	-	-
21	-	-
22	-	-
23	“Questionnaire is too long.”	“Face validity or peer review probably could help.”
24	“Well doneee!”	-
25	-	-

26	“I think this is a very good study in shedding some light to the well being of young adults, especially how it can be compared to pre-covid times.”	“some questions feel rather repetitive, just worded differently.”
27	“Concise and clear.”	-
28	“Language was okay, slightly lengthy questionnaire.”	“Multiple languages could be prepared to target people who may understand Malay/Chinese/Tamil better. Since Malaysia is multiracial. Could look into this aspect. Is there any continuation to find out why the respondents had that particular answer? (I.e a FGD or IDI?)”
29	“It's too long and confusing sometimes.”	“Make the scale more easy to understand and less long.”
30	-	-
31	-	-
32	-	-
33	“It's an interesting & well put together study. All the best with your data collection!”	“Not really qualified to comment, but looks good to me.”
34	“The entire survey may seem a bit long.”	-
35	“The link that being attach is very useful to use for future. Thank you.”	-
36	“Okay.”	-
37	“Good question and details needed in each question.”	-
38	“All the best!”	-

Note. Overall comments and suggestions for improvement received for the IERQ.
The dash sign (-) =No comments.

Appendix S

Tables for Summary of Hypotheses Testing Outcomes

Table S1

Summary of the Hypotheses Testing Outcomes for Path a and b

Path a	
Hypothesis	Result (✓/X/O)
H1a: There is a negative relationship between entity beliefs and reappraisal.	✓
H1b: There is a positive relationship between entity beliefs and suppression.	X
H1c: There is a positive relationship between entity beliefs and social modeling.	O
H1d: There is a positive relationship between entity beliefs and perspective taking.	X
H1e: There is a positive relationship between entity beliefs and enhancing positive affect.	X
H1f: There is a positive relationship between entity beliefs and soothing.	X
H2a: There is a positive relationship between incremental beliefs and reappraisal.	✓
H2b: There is a negative relationship between incremental beliefs and suppression.	X
H2c: There is a positive relationship between incremental beliefs and social modeling.	✓
H2d: There is a positive relationship between incremental beliefs and perspective taking.	X
H2e: There is a positive relationship between incremental beliefs and enhancing positive affect.	X
H2f: There is a positive relationship between incremental beliefs and soothing.	X
Path b	
Hypothesis	Result (✓/X/O)
H3a: There is a negative relationship between reappraisal and depressive symptoms along with anxiety symptoms.	X
H3b: There is a positive relationship between suppression and depressive symptoms along with anxiety symptoms.	✓
H3c: There is a negative relationship between social modeling and depressive symptoms along with anxiety symptoms.	O
H3d: There is a negative relationship between perspective taking and depressive symptoms along with anxiety symptoms.	✓
H3e: There is a negative relationship between enhancing positive affect and depressive symptoms along with anxiety symptoms.	X
H3f: There is a negative relationship between soothing and depressive symptoms along with anxiety symptoms.	X
H4a: There is a positive relationship between reappraisal and well-being.	✓
H4b: There is a negative relationship between suppression and well-being.	X

H4c: There is a positive relationship social modeling and well-being.	X
H4d: There is a positive relationship between perspective taking and well-being.	✓
H4e: There is a positive relationship between enhancing positive affect and well-being.	X
H4f: There is a positive relationship between soothing and well-being.	✓

Note. ✓=Supported; X=Not supported; O=Opposite effect

Table S2*Summary of the Hypotheses Testing Outcomes for Path c'*

Path c'	
Indirect effect of Entity Beliefs to Mental Health variables via mediators	
Hypothesis	Result (✓/X/O)
H5a: Reappraisal will mediate the relationship between entity beliefs and depressive symptoms.	X
H5b: Suppression will mediate the relationship between entity beliefs and depressive symptoms.	X
H5c: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between entity beliefs and depressive symptoms.	X
H5d: Reappraisal will mediate the relationship between entity beliefs and anxiety symptoms.	X
H5e: Suppression will mediate the relationship between entity beliefs and anxiety symptoms.	X
H5f: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between entity beliefs and anxiety symptoms.	O
H5g: Reappraisal will mediate the relationship between entity beliefs and well-being.	✓
H5h: Suppression will mediate the relationship between entity beliefs and well-being.	X
H5i: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between entity beliefs and well-being.	X
Indirect effect of Incremental Beliefs to Mental Health variables via mediators	
Hypothesis	Result (✓/X/O)
H6a: Reappraisal will mediate the relationship between incremental beliefs and depressive symptoms.	X
H6b: Suppression will mediate the relationship between incremental beliefs and depressive symptoms.	X
H6c: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between incremental beliefs and depressive symptoms.	X
H6d: Reappraisal will mediate the relationship between incremental beliefs and anxiety symptoms.	X
H6e: Suppression will mediate the relationship between incremental beliefs and anxiety symptoms.	X
H6f: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between incremental beliefs and anxiety symptoms.	O
H6g: Reappraisal will mediate the relationship between incremental beliefs and well-being.	✓
H6h: Suppression will mediate the relationship between incremental beliefs and well-being	X

H6i: The IER strategies namely social modeling, perspective taking, enhancing positive affect and soothing will mediate the relationship between incremental beliefs and well-being. X

Note. ✓=Supported; X=Not supported; O=Opposite effect