

THE EFFECTS OF SINGLE SESSION
INTERVENTION ON PERCEIVED CONTROL:
A PILOT STUDY TESTING GROWTH MINDSET
AMONGST MALAYSIAN ADOLESCENTS

FATIN NURAFIQAH BINTI ABDUL FATA



UNIVERSITI SAINS MALAYSIA

UNIVERSITI PENDIDIKAN SULTAN IDRIS

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DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged; and to the best of my knowledge it does not contain any materials previously published or written by another person except where resources are properly acknowledged in the text; and that it has not been submitted in part or in whole to fulfil the requirements of any other subject or course or for a degree, diploma, certificate in any university. In making this declaration, I hereby understand and acknowledge any breaches off the declaration constitute academic misconduct which may lead to my exclusion and / or expulsion from the programme and / or Master's Degree.

Fatin Nurafiqah Binti Abdul Fata
Candidate

Date:

Associate Prof Dr Azizah Othman
Research Supervisor

Date:

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ABSTRACT

Adolescence is the transition period from being a child to being an adult. This is the period where they start fostering their psychological, emotional and physical growth. Individuals who believe that their abilities and skills can be improved through effort are said to adopt growth mindset. The present study aims to explore the effects of growth mindset intervention on levels of perceived control amongst adolescents. A within-subjects design was employed for the current study to investigate the effectiveness of a single session intervention (SSI) targeting growth mindset on levels of perceived control. Perceived control was measured using Primary Control Scale for Children (PCSC) and Secondary Control Scale for Children (SCSC) which measure the individual's perception of control related to their external environment (primary perceived control) and perception of control directed at internal processes (secondary perceived control). Participants were recruited from local secondary school and undergo a 2-hour session delivered online, individually. The result indicated that adolescents benefitted from the brief, single session intervention as measured by their improved levels of perceived control. Adolescents reported having greater sense of control over their environment related to social situations and adjusting their internal processes to fit the external environment. The findings of the present pilot study raise the possibility of utilizing growth mindset as a therapeutic content to increase levels of perceived control in adolescents.

Keywords: mindset, growth mindset, adolescents, perceived control, single session intervention.

ABSTRAK

Masa remaja adalah tempoh peralihan dari menjadi kanak-kanak ke dewasa. Ini adalah tempoh di mana mereka mula memupuk pertumbuhan psikologi, emosi dan fizikal mereka. Individu yang percaya bahawa kebolehan dan kemahiran mereka dapat ditingkatkan melalui usaha dikatakan menerapkan penapatan minda tambahan. Kajian ini bertujuan untuk meneroka kesan penapatan minda tambahan terhadap tahap kawalan yang dirasakan di kalangan remaja. *Within-subjects design* digunakan untuk kajian semasa untuk menyiasat keberkesanan intervensi sesi tunggal yang mensasarkan pertumbuhan minda pada tahap kawalan yang dirasakan. Tanggapan kawalan yang dirasakan diukur menggunakan Perceived Control Scale for Children (PCSC) dan Secondary Control Scale for Children (SCSC) yang memeriksa persepsi individu terhadap kawalan yang berkaitan dengan persekitaran luaran mereka (kawalan persepsi utama) dan persepsi kawalan yang diarahkan pada proses dalaman (dirasakan sekunder kawalan). Pelajar daripada sekolah menengah tempatan dipilih untuk kajian ini telah menjalani sesi 2 jam yang disampaikan secara talian. Hasilnya menunjukkan bahawa pelajar mendapat manfaat daripada sesi tersebut yang telah dilihat oleh peningkatan tahap tanggapan kawalan. Remaja dilaporkan mempunyai rasa kawalan yang meningkat terhadap persekitaran mereka yang berkaitan dengan situasi sosial dan menyesuaikan diri sendiri agar sesuai dengan persekitaran luaran. Pendapatan kajian rintis ini meningkatkan kemungkinan manfaat penapatan minda tambahan sebagai kandungan terapi untuk meningkatkan tahap tanggapan kawalan untuk remaja-remaja.

kata kunci: penempatan minda, penempatan minda tambahan, remaja, tanggapan kawalan, intervensi sesi tunggal.

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LIST OF ABBREVIATIONS

BIC	Brief, Intensive and Comprehensive
NHMS (2017)	The National Health & Morbidity Survey 2017
PCSC	Perceived Control Scale for Children
SCSC	Secondary Control Scale for Children
SMK	Sekolah Menengah Kebangsaan
SPSS	Statistical Package for the Social Science
SSI	Single Session Intervention
PDF	Portable Document Format
QQ Plot	Quantile-Quantile Plot

CHAPTER 1:

INTRODUCTION

1.1 INTRODUCTION

Adolescence is a unique period where individuals experience transitioning from being a child to an adult. Along with this transition, they will undergo changes observed in their physical, psychological and social functioning. The current Covid-19 pandemic outbreak has exerted enormous pressure and impact on adolescents' mental health (Deolmi & Pisani, 2020). More specifically, the impact is observable in adolescents' lifestyle behaviour, psychological distress and social health (Deolmi & Pisani, 2020; Xiang, Zhang & Kuwahara, 2020; Lutijen et al., 2021). One of the many ways to ameliorate the negative outcomes of the pandemic outbreak upon adolescents' psychological well being is to strengthen their coping skills. The present study attempted to explore the effects of intervention targeting growth mindset in improving levels of perceived control.

This section will elaborate further on the background of the study, the rationale behind conducting the present study and the problem statement related to it. This is followed by the research question and objectives that are used to guide the present study. Furthermore, the conceptual and operational definitions are discussed here and the chapter closes with outlining the research hypotheses.

1.2 BACKGROUND OF STUDY

The concept of mindset was first introduced by Dweck (1995) which is defined as the beliefs that individuals hold with regards to their ability to carry out tasks in life. Individuals with growth mindset hold the belief that their innate ability is attributed to effort and practice. Whereas individuals with fixed mindset hold the belief that the origin of abilities is an innate or static traits that cannot be improve and developed in any meaningful way (Hogan & Larkin-Wong, 2013). Local research conducted by Farok & Mahmud (2020) and Khairuddin, Zamani, Halim and Kamaluddin (2020) exhibit that growth mindset has been strongly associated with academic achievement. Fixed mindset has shown to be associated with mental health problems (Schroder et al., 2017; Schleider & Weisz 2017a), loneliness (Mosanya, 2020), peer rejection (Yeager, Trzesniewski & Dweck 2013) and cyberbullying victimization (Niu et al., 2020). Whereas growth mindset has been strongly associated with self-efficacy, perceived control and motivation (Burnette et al., 2019; Schleider, Abel & Weisz, 2019).

Perceived control refers to the individual's perception of the resources related to control that are available to them. According to Skinner & Zimmer-Gembeck (2011), perceived control is made up of several types of facets such as an overall sense of control (e.g., expectancies of success, control beliefs), beliefs about available contingencies (e.g., locus of control, causal attributions, learned helplessness, strategy beliefs), or beliefs about an individual's access to effective means (e.g., self-efficacy, perceived competence, perceived ability, capacity beliefs). Perceived control is a psychological attribute that has been used in coping mechanism for adolescents with internalizing problems (Rapee et al., 1996; Magaro & Weisz, 2006). Having a greater sense of control over the outcomes of events and efficacy to perform certain skills set will allow individuals

to view negative events as challenges rather than threat therefore, equipping individuals with the appropriate coping skills to overcome the challenges.

Growth mindset assert the notion that individuals hold beliefs that their abilities, skills and resources can be nurtured and enhanced whereas perceived control is the individual's perception of the resources they have related to control. When both of these concepts are put together, growth mindset assist individuals in nurturing their belief that the resources, skills and abilities they are equipped with related to control can be enhanced and developed. According to Schleider & Weisz (2017a)'s study, their findings suggested that there is positive correlation between growth mindset and perceived control. Adolescents who received psychological treatment targeting growth mindset exhibited improvements in perceived control, anxiety and depression. The National Health & Morbidity Survey 2017 (NHMS 2017) published by the Institute for Public Health has shown that there is an increase in the reported number of cases where adolescents experience feelings of depression, anxiety and stress. This is alarming as it indicates that more adolescents are affected as previously shown in.

As such, this leads to an increased demand in the mental health services catering for the adolescents. However, Malaysia is currently lacking mental health professionals in hospital, educational and community setting (Chong, Mohamad, & Er, 2013). World Health Organization (WHO) guideline suggest that there needs to be a ratio of 26.7 mental health professionals per 100,000 population in middle income countries (Bruckner et al., 2011). A way to overcome shortage of mental health specialists and services in the country is to design intervention / programs that can be scaled up to identify and target youths at risk of developing psychopathology before full blown symptoms occur. One such approach concerns delivering easily accessible intervention to population who are at risk. In this paper, we examine the feasibility of adapting a mindset-based

intervention which focus on strengthening the adolescents' mindset in order to improve levels of perceived control. The delivery mode used is online-based with a single session format that has shown to offer a promising effect in early intervention and screening for adolescents at risk of developing psychopathology.

1.2 STUDY RATIONALE AND PROBLEM STATEMENT

Growth mindset is a psychological attribute that has been implicated in promoting psychological well-being and reduction of internalizing psychopathology for adolescents (Schleider & Weisz, 2018; Weisz, Southam-Gerow & McCarty, 2011). Transforming content of growth mindset into brief interventions can provide a great clinical utility for adolescents who are at risk of developing psychopathology. It provides opportunity for healthcare workers and clinicians to address mental health related problems at earlier stages by preventing the exacerbation of full-blown symptoms. The present study attempts to investigate the efficacy of growth mindset delivered in a single session format.

Firstly, there has been emerging evidence suggesting the relationship between adolescents' mental health and growth mindset. Adolescents who reported experiencing greater levels of depression and anxiety have shown to exhibit specific cognitive style known as fixed mindset. The principles behind fixed mindset have shown to provide great clinical utility as a basis for preventive strategies in adolescents at risk of developing psychopathology. Therefore, this current study aims to address the gap in local research by investigating the clinical utility of utilizing growth mindset as a psychological intervention.

Secondly, the concept of single session intervention is relatively new to Malaysia. The past studies that have utilized the design of brief intervention has applied to non-psychiatric problems

with co-morbidities in psychological symptoms such as smoking cessation, drug addiction and chronic illnesses (Awaisu et al., 2010; Utap, Tan, & Su, 2019; Vijay et al., 2015). This study will attempt to be one of the first study that looks into the effects of a single session intervention directly on psychological measures. The current study aims to do so by adapting an evidence-based intervention for local usage therefore the first problem statement to be addressed in this study looks into the efficacy of a single session intervention on psychological outcomes related to perceived control.

Lastly, this study aims to look at the efficacy of delivering intervention in online format. Considering the unprecedented pandemic that we are facing, looking into the effects of interventions delivered through digital format is worthwhile. It allows for possibility of scalability so that more adolescents can be reached. Whilst it is not meant as a form of replacement for traditional in person therapy format, it can be considered as an alternative approach for preventive strategies in strengthening adolescents' psychological wellbeing from worsening. The third problem statements aims to address the research gap of the feasibility for delivering mindset related intervention using digital format.

1.3 RESEARCH QUESTIONS

1. Is growth mindset intervention delivered in an online, single session format feasible and useful for adolescents in Malaysia?
2. Can growth mindset intervention delivered in an online, single session format improve level of primary and secondary perceived control for adolescents living in Malaysia?

1.4 RESEARCH OBJECTIVES

The general objective is to adapt and evaluate the efficacy and feasibility of online based single session intervention on the general well-being of adolescents aged 13 to 18 years old who attend a public secondary school in Malaysia. The specific objectives are:

1. To adapt and pilot an online, single session growth mindset intervention into local language (Bahasa Malaysia).
2. To investigate the effects of growth mindset intervention delivered in an online, single session format on primary perceived control and secondary perceived control for adolescents living in Malaysia.

1.5 SIGNIFICANCE OF STUDY

Local studies on growth mindset primarily focus on academic achievement, leadership potential (Fontaine, 2019; Farok & Mahmud., 2020; Khairuddin et al., 2020) whereas studies on perceived control is limited. Most journal articles focus on locus of control as compared to perceived control. According to Strudler Wallston & Wallston (1978) locus of control refers the perception that events occurring in daily lives are due to own's effort (internal locus of control) or due to other forces (external locus of control). On the other hand, perceived control refers to the belief that individuals are capable of modifying the environment around them (primary perceived control) or modifying their subjective emotions to fit the surrounding environment (secondary perceived control). The preset study aims to be the first paper to introduce the concept of growth mindset into psychological intervention and examine its effects on perceived control amongst local adolescents. Furthermore, it's delivery in single session format through digital format aims to

examine its potential for scalability. If such effectiveness is established, growth mindset can serve as a therapeutic intervention for adolescents' level of perceived control.

1.6 VARIABLE DEFINITIONS

1.6.1 Conceptual Definitions

The independent variable in this study is time with 2 levels which are baseline and postintervention. The dependent variables of this study are: (i) primary perceived control (ii) subdomains of primary perceived control (social, behavioral and academic) (iii) secondary perceived control.

1.6.2. Operational Definitions

Primary perceived control. The operational definition for perceived primary control is the overall scores obtained for the questionnaire PCSC. There are three subscales under PCSC which are academic, social and behavioral domains. The sums of all three subscales reflect the overall primary perceived control. In the present study, differences of scores observed at baseline and postintervention measures indicate changes in primary perceived control. Improvement in primary perceived control is indicated by higher scores obtained at post-intervention compared to baseline measures.

Social perceived control. The operational definition for social perceived control is the sum of eight items (item no 2, 5, 8, 11, 14, 17, 20, 23) that measure social subdomain under the questionnaire PCSC. In the present study, differences of scores observed at baseline and postintervention measures indicate changes in social perceived control. Improvement in social perceived control is indicated by higher scores obtained at post-intervention compared to baseline measures.

Academic perceived control. The operational definition for academic perceived control is the sum of eight items (item no 1, 4, 7, 10, 13, 16, 19, 22) that measure academic subdomain under the questionnaire PCSC. In the present study, differences of scores observed at baseline and postintervention measures indicate changes in academic perceived control. Improvement in academic perceived control is indicated by higher scores obtained at post-intervention compared to baseline measures.

Behavioural perceived control. The operational definition for behavioural perceived control is the sum of eight items (item 3, 6, 9, 12, 15, 18, 21, 24) that measure behavioural subdomain under the questionnaire PCSC. In the present study, differences of scores observed at baseline and postintervention measures indicate changes in behavioural perceived control. Improvement in behavioural perceived control is indicated by higher scores obtained at post-intervention compared to baseline measures.

Secondary perceived control. The operational definition for secondary perceived control is the overall scores obtained for SCSC. The sum of all 20 questions will give the overall total score of secondary perceived control. In the present study, the differences of overall scores observed at baseline and postintervention measures indicate changes in perceived secondary control. Improvement in secondary perceived control is indicated by higher overall scores obtained at postintervention compared to baseline measure.

Growth mindset intervention. The operational definition of growth mindset intervention is the delivery of a single session intervention named “Growth Mindset Project”. It comprises of 2 hours psychoeducational content focusing on the concept of brain neuroplasticity and its relations to social relationships. The exact content covered emphasis on the brain science behind implicit belief, teaching adolescents to view their role from

helper to expert, includes self-persuasion exercises to facilitate internalization and generalization, and testimonials from trusted others. The single session is delivered online via Zoom Video conference where participants were facilitated by the main researcher. The goal of the intervention involves training adolescents' on adopting a growth mindset in the face of adversity (Miu et al., 2015; Schleider & Weisz, 2016a) which would reflect on the levels of primary and secondary perceived control (measured by PCSC and SCSC).

1.7 RESEARCH HYPOTHESES

Hypothesis 1:

Ho: There are no changes in the scores for primary perceived control between baseline and post-intervention in all participants.

H1: There are significant changes in the scores for primary perceived control between baseline and post-intervention in all participants.

Hypothesis 2:

Ho: There are no changes in the scores for social subdomain of primary perceived control between baseline and post-intervention in all participants.

H1: There are significant changes in the scores for social subdomain of primary perceived control between baseline and post-intervention in all participants.

Hypothesis 3:

Ho: There are no changes in the scores for behavioural subdomain of primary perceived control between baseline and post-intervention in all participants.

H1: There are significant changes in the scores for behavioural subdomain of primary perceived control between baseline and post-intervention in all participants.

Hypothesis 4:

Ho: There are no changes in the scores for academic subdomain of primary perceived control between baseline and post-intervention in all participants.

H1: There are significant changes in the scores for academic subdomain of primary perceived control between baseline and post-intervention in all participants.

Hypothesis 5:

Ho: There are no changes in the scores for secondary perceived control between baseline and post-intervention in all participants.

H1: There are significant changes in the scores for perceived secondary control between baseline and post-intervention in all participants.

CHAPTER 2:

LITERATURE REVIEW

2.1 GROWTH MINDSET INTERVENTION

Conceptualization of growth mindset. Growth mindset was first conceptualized based on the implicit theory of personality (Chiu, Hong, & Dweck, 1997; Dweck, Chiu, & Hong, 1995). The implicit belief is guided by the assumptions of how individuals process and interpret information about self and other people. It's founded on the roots of social information processing and personality components (Chiu et al., 1997; Dweck et al., 1995). The origin of implicit theories have been largely linked to intelligence and academic performance where past researchers explore how implicit beliefs determine academic success (Yeager & Dweck, 2012). Over time, the concept has been adopted into personality and thus make up the implicit theory of personality. This paper will utilize the theoretical framework for growth mindset based upon two models which are the Implicit Theory of Personality and The Cognitive-Stress Vulnerability Model (Beck, 1987; Schneider, 1973). The implicit theory of personality refers to the individual's belief and perception of the malleability of personal attributes. It is the beliefs that individuals hold about the characteristics possess by themselves and others which are used to guide their perception and behavior (Mullarkey & Schleider, 2020; Schneider, 1973). In other words, individuals process information about individual traits and other people's traits based on their implicit belief. Which in turn will affect the mindset that they possess towards self and surrounding.

Implicit theory of personality. The implicit theory of personality consists of two categories known as entity theory and incremental theory. The entity theory refers to the belief that

one's own traits and others are fixed and permanent. Individuals operating under entity theory are more likely to form a fixed belief of how they perceive their own social attributes (I'm not likeable) and other people's attributes (he's a bad person). This fixed belief has been closely linked to predict future trend in prolonged psychosocial stress (Schroder, Callahan, Gornik, & Moser, 2019; Yeager et al., 2014) and psychopathology in adolescents (Miu & Yeager, 2015; Schleider, Abel, & Weisz, 2015). On the other hand, the incremental theory of personality refers to the belief that one's own traits and others are malleable; it can change over time. Individuals operating under this theory are more likely to attribute personal characteristics as malleable in the face of adversity. the incremental theory of personality has been closely linked to predicting greater recovery from stress-induced situation and increasing resilience in the face of interpersonal distress (Hans S. Schroder et al., 2017; Yeager, Lee, & Jamieson, 2016). This concept has been conceptualized and can be observed in the context of adolescents' resilience towards peer victimization, aggressive retaliation, academic-related anxiety and depression, alcohol misuse and specific phobias (Castellanos & Conrod, 2006; Miu & Yeager, 2015; Öst, Svensson, Hellström, & Lindwall, 2001; Yeager, Trzesniewski, & Dweck, 2013).

As demonstrated above, the implicit theory of personality provides a framework of how social judgment, perception and behavior are influenced. Implicit theory of personality shapes whether individuals adopt growth or fixed mindset. Which is hypothesized to play a role in their internalizing symptoms. This view is in line with cognitive vulnerability theory of psychopathology (Gibb & Coles, 2005). Beck's cognitive theory of anxiety and depression emphasize on the activation of schemata that influences bias expression in interpretation, memory, and attention of the surrounding. The cognitive vulnerability of depression is expressed in themes of helplessness and unlovability whereas the cognitive vulnerability of anxiety is expressed in

themes of threat or danger (Gibb & Coles, 2005). Both themes can be influenced by the implicit beliefs that individuals hold about themselves and others. These beliefs become the framework with which individuals use in reacting and responding to negative life experiences surrounding them such as peer victimization, academic stress, or family conflict. Therefore, fixed mindset or entity theories of personal attributes acts as a cognitive vulnerability to life adversity (Gibb & Coles, 2005; Schleider, Abel & Weisz, 2015).

Implicit theories have a significant influence in the self-regulatory processes by assisting individuals adjust to adverse events through adopting growth mindset (Howell, 2017). Growth mindsets equip individuals to view setbacks and adverse events as challenges that can be overcome by adjusting the external or internal environment to fit their desirable goals. This enable the individuals to find opportunities and means to improve existing skills so that the external or internal environment can be modified to fit their desirable goals. As such, growth mindset ameliorate internalizing psychopathology in adolescents. Schroder and colleagues (2019) conducted a study where university students who possess the mindset (belief) that anxiety is fixed and unchangeable reported higher levels of psychological distress across 5 weeks. Furthermore, cross sectional studies have shown that mindsets associated to anxiety can be domain specific and predict subsequent anxiety symptoms (Schroder et al., 2016). Schleider and Weisz (2016b) found that adolescents with fixed mindsets have relations with higher levels of depression and anxiety. The proposed mechanism behind this is that adolescents who believe people's traits are fixed and unchangeable have helpless responses to social stress which may exacerbate future internalizing problems. It has been seen that individuals with depression contribute more to entity theories (Schleider & Weisz, 2016a) whereas individuals who adopt fixed mindset has increased risk to developing depression (Howell, 2017).

Cognitive vulnerability stress model. The cognitive vulnerability stress model provides a framework with which implicit beliefs interact with adverse life events to form internalizing symptoms. Beck's cognitive model of depression highlights the importance of cognitive vulnerability in formation of internalizing problems (Beck, 1987). Dysfunctional thoughts about self and the world may interact with adverse life events to exacerbate depressive symptoms. The theory emphasizes on the role of cognition in the interpretation of the self and the world. The cognition is driven by several factors such as attributional style, schemata, interpretation bias and more (Gibb & Coles, 2005). Mindset serves as the belief that individuals hold towards specific situations and individuals and it can be categorized as one of the factors driving the cognition of individuals. Taken together into the context of entity theory, fixed mindset serves as a cognitive vulnerability that influences the negative impact of adverse life events (Schleider et al., 2015). Whereas incremental theory allows adolescents to adopt the mindset that the setbacks and challenges they are facing is a problem that can be solved rather than a permanent aspect of their lives. This is further supported by the cognitive vulnerability stress model where individuals adopting more adaptive schemata and attributional style are less likely to become susceptible to depressive symptoms (Gibb & Coles, 2005).

Furthermore, the concept of growth mindset can be used to improve the perceived efficacy of psychotherapy amongst adolescents. Schroder and colleagues (2017) found that growth mindset has significantly weaker associations with the number of stressful life events, post-traumatic stress symptoms, depression, substance use and motivations for non-suicidal self-injury. It was reported that growth mindset buffers the negative impact of challenging and demanding environments. This is because growth mindsets are associated with adaptive emotion-regulation strategies such as cognitive reappraisal which are good predictors for motivation to engage and succeed in

psychological therapy. A meta-analysis conducted by Schleider, Abel & Weisz (2015) revealed that there is significant relationship between fixed beliefs across general distress and psychiatric symptoms. This relationship was observed across both internalizing and externalizing problems in youth, including depression and anxiety. The same association was also reported by Schleider & Weisz (2017) whereby the study found that intervention targeting mindset beliefs delivered in SSI format hold the greatest effect size for adolescents with anxiety ($g = 0.58$).

2.2 SINGLE SESSION INTERVENTION (SSI)

Conceptualization of single session intervention (SSI). There is a relatively new wave of treatment format for treating adolescents with internalizing and externalizing psychopathology in a brief manner. Ost and Ollendick (2017) termed the new wave of treatment format as brief, intensive and concentrated (BIC) treatment. A brief treatment refers to the treatment format where the total number of sessions are reduced by at least half of the standard format. A concentrated treatments refers to equal number of treatment sessions but they are conducted in shorter period of time (e.g: daily sessions in 2 weeks instead of weekly sessions over 10 weeks). An intensive treatment consist of reduction in both number of treatment sessions and period of time taken to conduct the sessions (Ost & Ollendick, 2017). Single session interventions (SSI) would fall under the intensive treatment format. The rationale behind SSI is that clients have the resources to resolve their own problems and the minimal interaction with the therapist is to guide the clients to rely on their resources to overcome adversity.

According to Perkins (2006), SSI is treated as such that both the clients and therapist have the expectation that is the only or last session that they have together. SSI are goal-oriented and focus on specific ongoing concern. In another word, it is a cost-effective and mechanism targeted intervention. SSI provide opportunity for scalability in communities where sources and expertise

are scarce, requires less intensive professional training and address known risk factors (Schleider & Weisz, 2017). SSIs have been reported to have long lasting effects in addressing various psychopathology such as specific phobia (Öst et al., 2001), social anxiety (Parr & Cartwright-Hatton, 2009), post-traumatic stress symptoms (Sadeh, Hen-Gal, & Tikotzky, 2008), conduct problems (Joachim, Sanders, & Turner, 2009) and substance abuse (Gray, McCambridge, & Strang, 2005). Therefore, SSIs can be considered a suitable alternative for a cost effective and mechanism targeted intervention for adolescents. According to a review conducted by Campbell (2012), SSIs considers the view that “change is inevitable in life and clients often need the support and assistance of therapists on brief periods, to enable them to utilize their own resources to solve their problems.”

The general goal of SSIs isn't to immediately cure the client's problems right away nor is it expected that clients can recover completely based on one therapeutic session. The general goal that SSIs operate on is that clients would walk away from SSI with a plan on how to address their concerns, the confidence that they have the resources and skills available to resolve the concerns and the knowledge that they are welcome to seek for further psychological treatment should they need to (Campbell, 2012). This is a similar goal that is usually found in family and systemic therapy model as well as problem-oriented therapy. Although the general goal of SSI is to equip clients with the necessary self-sufficient skills, there has been attempts made to quantify the therapeutic effects of SSI outcomes. SSIs format has been utilized to address general mental health wellbeing as well as addressing clinical symptoms (Osborn et al., 2020; Schleider, Abel, & Weisz, 2019; Wasil et al., 2020; Yusoff, 2011).

A local research by Yusoff (2011) shows that SSI have therapeutic benefits in managing stress level amongst 1st year medical students. The author utilized an SSI format where the intervention

was delivered once for 3 – 4 hours. The results showed that anxiety and depression levels significantly reduced at 3 and 6 months post intervention suggesting that SSI format can have positive impact in the reduction of stress levels. Castellanos and Conrod (2006) investigated the effects of personality-targeted intervention on alcohol misuse and relevant comorbid psychological conditions such as panic attacks, depression, truancy, vandalism, reckless sexual behavior and shoplifting. The intervention runs for 2 sessions for either one of the four personality domains which are negative thinking, anxiety sensitivity, impulsivity and sensation seeking. The results showed that there is an overall intervention effect for panic attacks and shoplifting suggesting that utilizing specific types of personality domains as intervention sheds positive behavioural outcomes.

Growth mindset and SSI. Mindset-based interventions delivered in SSI format has shown utility in reduction and prevention of psychopathology (Ost & Ollendick, 2017; Schleider & Weisz, 2016b; Schleider & Weisz, 2017b) including depression and anxiety. The effect sizes observed in SSIs employing mindset based intervention has shown to be as similar as multi-session interventions implying that it can be equally effective for some cases (Mullarkey & Schleider, 2020). Miu and Yeager (2015) delivered a school-based intervention program utilizing growth mindset as their intervention element in a brief, self-administered format. The intervention was delivered in a single session and the outcomes were evaluated at post-intervention and 9 months later. The results showed favorable outcomes of self-reported depressive symptoms at 9 months post intervention compared to the control group. Other studies have also reported similar findings of growth mindset intervention delivered in single session format (Yeager, Trzesniewski & Dweck, 2013; Yeager et al., 2014).

This current study will employ growth mindset intervention utilizing the BEST concept developed by Schleider, Mullarkey, and Weisz (2019). *B* stands for the brain science that is used to normalize concepts in the program. This involves utilizing scientific studies in order to strengthen the validity of the message being delivered. It is followed by *E* which is to empower youths to a “helper” or “expert” role. The goal of growth mindset SSI is to drive adolescents to become the change-makers themselves. *S* is for saying-is-believing exercises in order to solidify learning. *T* is to provide testimonials and evidence from valued others. Taken all together, the BEST concept paved a way as the theoretical basis for the conceptualization of growth mindset as SSI. The following section will discuss the mechanism of how growth mindset targets internalizing problems in adolescents. The BEST concept has been utilized in other current studies (Orvidas et al., 2020; Osborn et al., 2020; Wasil et al., 2020)

2.3 PERCEIVED CONTROL

Conceptualization of perceived control. Perceived control refers to an individual’s belief about their own capability of exerting influence on internal states and behaviors, as well as their external environment (Lefcourt, 1966; Pearlin & Schooler, 1978; Wallston, Wallston, Smith, & Dobbins, 1987). This attributional belief is integral in the appraisal of and responses to stressful events (Schleider & Weisz, 2016). The sense of control that one can exert over life events is one of psychology’s most explored constructs. According to Pagnini, Bercovitz & Langer (2016), past studies have clearly shown that the effects of aversive events and distress could be mitigated by the perception of being in control (Glass, Siger, & Friedman, 1969; Langer & Saegert, 1977; Pervin, 1963). Following these original studies, researchers discovered that increasing perceived control facilitates general well being. Control related beliefs share roots and variance with helplessness and locus of control theories (Miller & Seligman, 1975; Rotter, 1966).

One of the most prominent theory cited in the literature of control beliefs and behaviour is the Social Learning Theory (SLT) proposed by Rotter (1954). The theory suggested that individual's personality and behavior is driven by the unique interaction of the individual themselves and their environment. In order to make reasonable predictions of an individual's behaviour, it is important to assess three constructs underlying the theory which are behaviour potential, expectancy and reinforcement value. Behaviour potential refers to the likeliness that an individual will engage in certain behaviour that produces greatest potential towards achievement. For example, an individual sitting for final year exams will more likely engage in behaviour that will produce greatest potential such as studying, attending extra classes and engaging in group discussions. Expectancy refers to the beliefs held by individuals that the favourable outcomes is followed by the chosen behaviour. In another words, individuals with high expectancies are more likely to believe that behaviors such as obtaining a job or asking someone out for a date were controlled by external factors rather than by any aspect of the individual themselves or their behavior (Phares, 1976). This theoretical foundation for external and internal locus of control emerged as the expectancy construct in Rotter (1954)'s social learning theory. The final construct for SLT is the reinforcement value which refers to desirability of the outcomes. The higher the outcome is desired, the more likely the individual will engage in the chosen behaviour.

Perceived control in adolescence. Adolescents are in the stage of development where they are susceptible to various risk factors. Among the most commonly cited in the literature of risk factors associated with depression among adolescents are exposure to psychosocial stress, family history of depression, cognitive factors (pessimism, attributional style, self-esteem), coping skills and social support (Lewinsohn et al., 1994; Lewinsohn, Rohde, & Seeley, 1998; MacPhee & Andrews, 2006; Thapar et al., 2012). Previous studies have shown that clinically anxious children

have been found to have lower levels of perceived control than non-clinical children (Weems, Silverman, Rapee, & Pina, 2003). The two process model has shown its utility in explaining symptoms observed in children with depression and anxiety (Muris et al., 2003). It was found that beliefs about self-competence was a significant predictor of both depressive and anxiety-related symptoms but beliefs about contingency wasn't as important as self-competence. This goes to show that internalizing psychopathology in childhood is largely linked to one's own (dysfunctional) beliefs of control over competence in various skills domains rather than beliefs about how much one exerts control over the outcomes (Muris et al., 2003; Weisz et al., 2001). The belief that one doesn't have control over the competency to exert changes through skills contribute to further experience of hopelessness and negative thoughts about the future which are centralized themes of internalizing symptoms such as depression. Perceived control plays a central role in the appraisal of and reactions to stressful events (Brown & Siegel, 1988; Cheng & Cheung, 2005). Individuals with greater cognitive flexibility are able to adopt suitable coping strategies that will lead to adaptive stress responses. Perceived control aids cognitive flexibility by reinforcing the belief that individuals are capable of overcoming adverse life situations through personal efforts and emotional regulation.

Correlational studies in youth psychopathology have exhibited perceived control as the mediating factor between depressive symptoms and perceived parental rejection, multiple stress domains and peer victimization (Deardorff, Gonzales, & Sandler, 2003; Hunter et al., 2010; Magaro & Weisz, 2006). These studies were tested on large sample of adolescents providing support for the role of perceived control in adolescents' internalizing symptoms. Furthermore, longitudinal studies have shown the role of perceived control as mediation factor between internalizing problems and interpersonal stressors, child maltreatment and experiences with racism

(Auerbach, Eberhart, & Abela, 2010; Bolger & Patterson, 2001; Lambert et al., 2009) amongst adolescents indicating the potential benefit of perceived control in ameliorating internalizing symptoms in adolescents over a period of time.

Primary perceived control. Primary perceived control can be defined as the objective control over the external environment. Objective control is further made up of two subcomponents which are contingency of outcomes and competence of skills. Contingency of outcomes refer to beliefs that individual's actions bring about direct consequences of the outcomes and competence of skills refer to individual's capabilities to execute behavior that will bring about desired outcomes (Weisz & Stipek, 1982). On the other hand, subjective control refer to the individual's perception and beliefs about the outcome contingency and competence that one possess (Skinner & Zimmer-Gembeck, 2011).

The current study focuses on this view which is outlined as the contingency-competence-control (CCC) model developed by Weisz and Stipek (1982). It incorporates the developmental aspect of control beliefs with concepts from locus of control and self-efficacy research. The authors have defined control as "the capacity to produce an intended outcome" and the underlying factors associated with it is outcome contingency and personal competence. Outcome contingency is defined as the degree to which an outcome is dependent on the behavior of the individual themselves. Personal competence is defined as the extent of the individual's ability to produce a given behavior of a desired outcome. For example, an individual's judgement on how well they can control academic performance is influenced by their perception of how the teachers will evaluate them (outcome contingency) and how competent they are to engage in behaviors that will produce good performance (personal competence). These two factors become the theoretical foundation for the perceived primary control as reflected in the scale developed by the authors that

is also used in the current study (Perceived Control Scale for Children, PCSC; (Weisz, Francis, & Bearman, 2010; Weisz, Southam-Gerow, & McCarty, 2001). The perceived primary control has implications in adolescents' belief of their own capability to exert control over behavioral and external factors through personal efforts.

Secondary perceived control. On the other hand, the CCC model has evolved to form the Two-Process Model whereby a second aspect of perceived control has been offered (Rothbaum, Weisz & Snyder, 1982). Perceived secondary control has received fewer attention in the literature but this study will attempt to explain its relevance towards youth psychopathology. Secondary control refers to the individual's ability to influence their own psychological impact towards situational factors by adjusting some aspects of themselves and accept the circumstances as they are (Rothbaum, Weisz, & Snyder, 1982; Weisz et al., 2010). Perceived secondary control involves making internal adjustment (eg: emotional control) in order to align self with the circumstances. Secondary control makes up the Two-Process Model of perceived control where it is hypothesized that depressive symptoms in adolescents is associated with low levels of both primary and secondary control (Weisz et al., 2010). The original concept of Two-Process Model proposed by Rothbaum et al. (1982) looks into the function of secondary control as a salient process over various sub-domains of control. This has become the theoretical foundation of defining secondary control as the adjustment; referring to the process of adjusting, adapting or changing some aspects of self and acceptance; referring to the process of accepting the existing circumstances (Morling & Evered, 2006).

According to the Two-Process Model proposed by Rothbaum, Weisz & Snyder's (1982), primary and secondary control exist within the subcomponents of predictive control, interpretive control, illusory control, vicarious control and interpretive control. Predictive control refers to the

ability to adjust one's own expectation in order to predict the outcomes and interpretive control refers to the ability for one to interpret the event in order to increase understanding and acceptance of the outcomes. Illusory control is the attributions made when one places the outcomes on chance and vicarious control refers to the attributions made when control is placed upon powerful others. The current study focuses on the conceptualization of secondary control as interpretive control where growth mindset equip adolescents with the understanding and meaning of the aversive events that are occurring in the surrounding.

Taken together, the perceived primary control and secondary control posit that adolescent are able to alleviate internalizing problems through the belief that they possess adequate skills to overcome the adversity (primary perceived control) and in circumstances where external changes are not possible, they are able to adjust themselves to the circumstances in an adaptive way via interpretive control (secondary perceived control). The following section will elaborate on the theoretical understanding and practicality of applying concepts of growth mindset and perceived control.

Effects of growth mindset on perceived control. Looking into literature, growth mindset and perceived control have been frequently implicated in the prediction of academic achievements. Adolescence with fixed mindsets (entity beliefs) have exhibited low perceived control over their surroundings. Based on this understanding, the current research attempts to investigate if the effects of running an intervention that targets growth mindset will have an effect on levels of perceived control in adolescence. Adolescents who believe people's traits are fixed and unchangeable have helpless responses to social stress and this can exacerbate future internalizing problems (Schleider & Weisz, 2016b). A study conducted by Orvidas and colleagues (2020) exhibit the utility of using growth mindset to improve self-efficacy, perceived control and reduce

self-blame, body dissatisfaction and blame of others. The study utilize design similar to current study and the result indicate that participants showed greater levels of perceived control at immediate posttreatment and follow up. The content of growth mindset has been turned into intervention that measures other variables such as motivation, locus of control, grit and cognitive ability. Drawing on these findings, the current study wishes to explore the effects of growth mindset on primary and secondary perceived control for adolescents in local Malaysian setting.

According to Yeager and Dweck (2012), the transition period for adolescents entering high school can be a stressful period due to peer victimization and exclusion. Adolescents treat social labels as fixed identities that cannot be changed therefore increasingly exposed to the threat of negative labels. Following a series of experiments conducted by Yeager and colleagues (2014), adolescents are exposed to brief intervention that introduce the concept of incremental theory of personality within 2 sessions. The immediate response to social adversity and 8 months post intervention revealed that these adolescents reported lower overall stress and greater physical health. The content of brief intervention teaches the students that social attributes can be developed thus instilling a sense of perceived control and improved stress response to peer victimization and exclusion.

2.4 THEORETICAL FRAMEWORK

