

GUIDED IMAGERY RELAXATION TECHNIQUE: ITS  
EFFECT ON STRESS AND WELL-BEING OF  
PRIMARY SCHOOL CHILDREN IN KUBANG  
KERIAN, KELANTAN

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## ABSTRACT

With the global pandemic of COVID-19 circling around the world population since the beginning of 2020, to learn effective coping with negative emotional and behavioural experiences is especially a concern to the children and adolescents, who face restrictions on their physical movement and to do virtual learning at home. Therefore, there is a crucial need to study the effect of mindfulness-based approach, guided imagery relaxation technique on stress and well-being of the elementary school children.

A randomized controlled trial study, pretest-posttest with a waitlist control group was designed to examine the objective stated above. Thirty-four Standard Five Al-Biruni and Al-Farabi students of Sekolah Kebangsaan Kubang Kerian II (SKKK-II) participated in current study and were randomly assigned to intervention ( $N=17$ ) or waitlist-control ( $N=17$ ) groups. The participants from intervention group were required to attend four consecutive weekly monitoring session and practise to the audio guided imagery relaxation technique on daily basis. The children and their caregivers successfully completed the Stress in Children (SiC) Questionnaire, Strengths and Difficulties Questionnaire - Parent Reported (SDQ-PR) and tracking form across pre- and post-intervention time points.

Result from mixed-model ANOVA indicated that there was no significant difference observed in stress and well-being between participants from treatment and waitlist-control groups across pre- and post-intervention time points, with both  $p$  values more than .05. The insignificance of result could possibly be discussed from four different factors: time availability, drop-out and adherence rates, Internet accessibility and connectivity, and differences in between making physical and virtual contact.

Several useful implications and limitations of current study as well as recommendations for future studies are being explored to gain insights about the result of present study and add up the mindfulness-based intervention-related experience to fill in the existing gap of knowledge.

*Keywords:* mindfulness, mindfulness-based interventions, guided imagery relaxation technique, stress, well-being, primary school children

## ABSTRAK

Apabila seluruh populasi manusia diselubungi oleh pandemik *COVID-19* sejak permulaan tahun 2020, ianya penting untuk kanak-kanak yang terpaksa terkurung di dalam rumah dan menjalankan pembelajaran sekolah secara atas talian untuk belajar cara yang berkesan dan menangani masalah emosi dan tingkah laku mereka yang negatif. Oleh demikian, kajian untuk menyelidik kesan teknik imaginasi terbimbing terhadap stres dan kesejahteraan kanak-kanak sekolah rendah telah diadakan.

Untuk mengkaji objektif yang dinyatakan di atas, kajian dalam bentuk *randomized controlled trial, pretest-posttest with waitlist-control groups* telah direka. Tiga puluh empat orang kanak-kanak dari kelas Lima Al-Biruni dan Al-Farani, Sekolah Kebangsaan Kubang Kerian II telah dipelawa untuk penyertaan dalam kajian ini dan dibahagikan kepada kumpulan intervensi ( $N=17$ ) atau kawalan ( $N=17$ ) secara rawak. Kanak-kanak dari kumpulan intervensi dikehendaki untuk menghadiri empat sesi pengawasan mingguan dan mendengar audio teknik imaginasi terbimbing setiap hari. Kanak-kanak dan penjaga mereka berjaya menghabiskan *Stress in Children (SiC) Questionnaire*, *Strengths and Difficulties Questionnaire – Parent Reported (SDQ-PR)* dan borang catatan sepanjang masa kajian penyelidikan ini dijalankan.

Berdasarkan keputusan *mixed-model ANOVA*, ia tidak menunjukkan perbezaan yang ketara terhadap tahap stres dan kesejahteraan antara kumpulan intervensi dan kawalan sepanjang masa empat minggu kajian penyelidikan, dengan kedua-dua nilai  $p$  lebih tinggi daripada .05. Keputusan yang berlainan daripada jangkaan sebelum intervensi akan dibincang dari segi empat faktor: kekurangan masa, kadar tarik diri dan kepatuhan kajian, kebolehcapaian dan penyambungan Internet, dan perbezaan antara

hubungan secara fizikal dan atas talian. Beberapa implikasi dan kelemahan bagi kajian penyelidikan ini serta cadangan yang berguna untuk kajian pada masa depan juga diterokai untuk memahami keputusan yang didapati dengan lebih mendalam dan menambah lagi pengalaman penggunaan teknik kesedaran minda ini untuk mengisikan jurang pengetahuan pada masa terkini.

*Kata kunci:* kesedaran minda, intervensi kesedaran minda, teknik imaginasi terbimbing, stres, kesejahteraan, kanak-kanak sekolah rendah

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## **LIST OF ABBREVIATIONS**

|          |                                                           |
|----------|-----------------------------------------------------------|
| ACT      | Acceptance and Commitment Therapy                         |
| ANOVA    | Analysis of Variance                                      |
| APA      | American Psychological Association                        |
| ASLEC    | Adolescents Self-Rating Life Events Checklist             |
| BMSLSS   | Brief Multidimensional Students' Life Satisfaction Scale  |
| CDSI     | Children's Daily Stress Inventory                         |
| CHS      | Children's Hassles Scale                                  |
| CLES-C   | Coddington Life Events Scale for Children                 |
| CMCO     | Conditional Movement Control Order                        |
| COVID-19 | Coronavirus Disease 2019                                  |
| CSQ-CA   | Chronic Stress Questionnaire for Children and Adolescents |
| DBT      | Dialectical Behavioural Therapy                           |
| EMCO     | Enhanced Movement Control Order                           |
| GAS      | General Adaptation Syndrome                               |
| GIR      | Guided imagery relaxation                                 |
| HPAA     | Hypothalamic-pituitary-adrenocortical axis                |
| ITC      | Item-total correlations                                   |
| KMO      | Kaiser-Meyer-Olkin                                        |
| KSED     | Kelantan State Education Department                       |
| LECI     | Life Events and Coping Inventory                          |
| MBCT     | Mindfulness-based cognitive therapy                       |
| MBIs     | Mindfulness-based interventions                           |
| MBSR     | Mindfulness-based stress reduction                        |

|         |                                                                      |
|---------|----------------------------------------------------------------------|
| MCO     | Movement Control Order                                               |
| MM      | Mindfulness-meditation                                               |
| MOE     | Ministry of Education                                                |
| PANAS-C | Positive and Negative Affect Scale for Children                      |
| PERMA   | Positive emotion, engagement, relationships, meaning, accomplishment |
| PSM-9   | Psychological Stress Measure-9                                       |
| PSS-C   | Perceived Stress Scale in Children                                   |
| PWI-SC  | Personal Wellbeing Index-School Children                             |
| RCT     | Randomized controlled trial                                          |
| RMCO    | Recovery Movement Control Order                                      |
| RSPWB   | Ryff's Scale of Psychological Well-Being                             |
| SAM     | Self-Assessment Manikin                                              |
| SDQ-PR  | Strengths and Difficulties Questionnaire-Parent Reported             |
| SES     | Socioeconomic status                                                 |
| SiC     | Stress in Children                                                   |
| SKKK-II | Sekolah Kebangsaan Kubang Kerian II                                  |
| SLES    | Stressful Life Events Scale                                          |
| SLSS    | Student's Life Satisfaction Scale                                    |
| SPSS    | Statistical Package of Social Science                                |
| SWLS-C  | Satisfaction with Life Scale adapted for Children                    |
| UPSI    | Universiti Pelajaran Sultan Idris                                    |
| USM     | Universiti Sains Malaysia                                            |
| VCS     | Video-Conferencing System                                            |

|        |                                           |
|--------|-------------------------------------------|
| VRSS   | Verbal Rating Scale for Stress            |
| WEMWBS | Warwick-Edinburgh Mental Well-Being Scale |

## LIST OF SYMBOLS

|           |                                                            |
|-----------|------------------------------------------------------------|
| =         | Equal                                                      |
| >         | Greater than                                               |
| <         | Lesser than                                                |
| ×         | And; Times                                                 |
| ()        | Bracket                                                    |
| *         | Asterisks; to indicate statistical significance            |
| %         | Percentage                                                 |
| <i>df</i> | Degree of freedom                                          |
| M         | Mean                                                       |
| MS        | Mean square                                                |
| SD        | Standard deviation                                         |
| SE        | Standard error                                             |
| SS        | Sum of squares                                             |
| <i>N</i>  | Total number                                               |
| $\alpha$  | Cronbach's alpha                                           |
| $\beta$   | Beta                                                       |
| F         | F-distribution test statistic                              |
| $\eta^2$  | Eta-square                                                 |
| <i>p</i>  | Probability value                                          |
| <i>r</i>  | Estimate of Pearson product-moment correlation coefficient |
| <i>t</i>  | T-test statistic                                           |
| $\chi^2$  | Chi-square                                                 |

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Introduction**

The chapter introduces what the research study was about. It discusses the background of the study. It also provides problem statement and study rationale. Subsequently, the chapter reveals about the conceptual and operational definition of variables involved. The latter part of the chapter discusses about the research questions, objectives and hypotheses made for the current study.

#### **1.2 Background of Study**

Emotional and behavioural problems are commonly found and affecting the children and adolescents in the contemporary society. They can be differentiated into two main

categories: internalizing and externalizing problems. Internalizing problems usually refer to the maladaptive responses generated to cope with abundant stressful life conditions include depression and anxiety disorders. Whilst externalizing problems is defined as the dysfunctional behavioural problems, which comprise of oppositional defiant disorder, conduct disorder and aggressive, injurious behaviours (Abd Rahman et al., 2013; Ogundele, 2018). The possible risk factors of these emotional and behavioural problems could be discussed from the aspects of the three-factor approach, biopsychosocial model, such as parenting style and temperament, relationship attachment, genetic influence, negative living environment and low family socioeconomic status (SES; Hannigan, Walaker, Waszczuk, McAdams, & Eley, 2017; Madigan, Brumariu, Villani, Atkinson, & Lyons-Ruth, 2016; Piquart, 2017; Pisano et al., 2017).

According to the statistics done from the emerging evidence, emotional and behavioural problems had affected 10 to 20% of the children from all over the world (Gupta, Mongia, & Garg, 2017; Ogundele, 2018). As reported by the latest official mental healthcare performance report released by Ministry of Health Malaysia, the prevalence rate of mental health problems among children was 12.1% (Malaysian Healthcare Performance Unit, 2017). This could be supported and further elaborated by another longitudinal study done by a team of researchers two years ago. The findings suggested that the prevalence rate of children emotional and behavioural problems was to be around 10% in Malaysia (Idris, Barlow, & Dolan, 2019). Although gradual improvements of children mental health problems can be seen, but it is still a major debilitating concern that could not be easily disregarded (Ahmad et al., 2015).

If the emotional and behavioural problems are left untreated, they may expose the children to the risk of different short or long-term consequences in their later stages of life. For example, the children may have doubts in their own abilities or perceived control in their daily lives. Many of them were reported to be dealing with sleeping disturbances at night (Bayes & Bullock, 2020; Ogundele, 2018). In school, they may face difficulties in accomplishing or maintaining good academic achievement and proper social relationships (Carroll, Houghton, Forrest, McCarthy, & Sanders-O'Connor, 2020; Martin, Cumming, O'Neill, & Strnadová, 2017; Sointu, Savolainen, Lappalainen, & Lambert, 2017; Taylor, Hanna, & McPhillips, 2019). This could be mostly associated with their dysfunctional abilities in recognizing emotion and intention of others (Wells, Hunnikin, Ash, & van Goozen, 2020). In consequence, the quality of life and subjective well-being of children will be compromised and negatively influenced (DePasquale & Gunnar, 2018; Idris, 2017).

The primary school children, especially those who age around eleven and twelve years old, are transitioning into adolescence in another one to two years. It is a period marked with simultaneous critical physical, psychological and social development that could affect their personal view of well-being and quality of life in later phases of life (Sukor, Mohamad Aun, & Zakaria, 2019). They need to deal with biological and cognitive changes that may cause them to challenge and question their own socio-emotional and identity development (Clark, Amar-Singh, & Hashim, 2014). Hence, an effective and socially appropriate coping strategy would be crucial to be introduced to the children in learning adaptive problem-solving behaviour and positive appraisals to deal with their negative affective and behavioural experiences (Bothe, Grignon, & Olness, 2014; Perry-Parrish, Copeland-Linder, Webb, & Sibinga, 2016; Rabenu, Yaniv,

& Elizur, 2017). Thereby, the children can be more resilient and well-prepared in managing adverse events in their adolescence or even later stages of adulthood in life (Ahmad et al., 2015; Idris, 2017).

From 2020 onwards, to learn effective coping with negative affective and behavioural experiences is especially a critical and important issue for the children ever since the initiation of Movement Control Order (MCO) in local nationwide by March 18 due to the COVID-19 pandemic that struck hard globally (Ariff, 2020). The restricted movement at home could impose negative and detrimental effects onto the children, such as anxiety, negative distress and other externalizing problematic behaviours (Liu, Bao, Huang, Shi, & Lu, 2020). All the negative consequences experienced were contributed by the economic downturn, emotionally dysregulated parents, sharp lifestyle changes, fear of infection and limited access to peer relationships (Brooks et al., 2020; Golberstein, Wen, & Miller, 2020; Wang, Zhang, Zhao, Zhang, & Jiang, 2020). If the children are able to master proper, healthy coping measures of psychological support for current challenges faced, this could potentially help them in reducing the stress and enhancing the psychological well-being (Dalton, Rapa, & Stein, 2020; Fegert, Vitiello, Plener, & Clemens, 2020).

### **1.3 Problem Statement & Study Rationale**

Mindfulness-based approaches had been widely practised globally to improve mental health and promote well-being within adult populations in the last thirty years (Gu, Strauss, Bond, & Cavanagh, 2015; Ramli, Hamizah, Alavi, Mehrinezhad, & Ahmadi,

2018). Despite the availability of abundant empirical support for mindfulness-based techniques across different adult population, the question of whether mindfulness exercise showed equivalent benefits for children still remained largely unanswered in today's world (Keng, Phang, & Oei, 2015; Schonert-Reichl et al., 2015; Sotardi, 2016). Nevertheless, some of the recent studies actually revealed promising results of practising mindfulness-based intervention in enhancing psychosocial, cognitive and behavioural aspects of elementary school children (Sibinga, Webb, Ghazarian, & Ellen, 2016; van de Weijer-Bergsma, Langenberg, Brandsma, Oort, & Bögels, 2014; Yoo et al., 2016). The development was predominantly in enhancing the children's psychological well-being, including their emotional functions, executive functions, attentional control, resilience, self-regulation and prosocial behaviour (Black & Fernando, Mindfulness training and classroom behavior among lower-income and ethnic minority elementary school children, 2014; Costello & Lawler, 2014; Crescentini, Capurso, Furlan, & Fabbro, 2016; Flook, Goldberg, Pinger, & Davidson, 2015; Greenberg & Harris, 2012).

Among the mindfulness-based interventions available, emergence of guided imagery relaxation (GIR) technique and its effectiveness had soon become the central focus of many researchers in recent years (Bigham, McDannel, Luciano, & Salgado-Lopez, 2014; Costa & Barnhofer, 2016; dos Santos Felix, Ferreira, da Cruz, & Barbosa, 2019; Tsitsi, Charalambous, Papastavrou, & Raftopoulos, 2017; Vagnoli, Bettini, Amore, De Masi, & Messeri, 2019). Although the current studies available on children are still rather scarce and limited in Malaysian context; however, there were already few studies revealing hopeful result of utilizing the guided imagery relaxation technique on clinical samples of children (Elias, Yaacob, Kadir, & Othman, 2015; Erwin &

Robinson, 2016; Othman, Buang, Taib, Mohamad, & Nasir, 2013). Thus, it may be feasible to conduct a study to further extend the knowledge in examining the effect of guided imagery relaxation technique on stress and psychosocial well-being of children from Malaysian mainstream primary school settings.

#### **1.4 Conceptual Definition**

A conceptual definition is a definition that cautiously designed to epitomize the abstract concepts evidently; not merely common sense as this could often result in measures with ambiguity or misunderstanding, then leading to “bad” theory that could not be confirmed. In other words, conceptual definitions are used for abstraction and “good” theory development. As stated by Hempel and agreed by many researchers about a good conceptual definition, it may be able to demonstrate “inclusivity, exclusivity, differentiability, clarity, communicability, consistency and parsimony” (1970, as cited in, Wacker, 2004).

*Mindfulness*: Traditionally, mindfulness could be defined as “an understanding of what is occurring before or beyond conceptual and emotional classification about what is or has taken place” (Chiesa, 2013). Mindfulness is not only by purposefully paying attention in a certain way, non-judgmentally at present moment, but also the ability of mind to recollect its content and not being drifted away from it (Creswell, 2017; Dreyfus, 2011; Hanley, Abell, Osborn, Roehrig, & Canto, 2016; Hussain, 2015).

*Stress*: Stress is a multidimensional concept which could be attributed to a broad range of phenomena and daily life experiences (Shahsavarani, Abadi, & Kalkhoran, Stress: Facts and theories through literature review, 2015). It is any influence exerted by internal and/or external surrounding environment on a living being which causes disruption of its homeostasis (Shahsavarani, Ashayeri, Lotfian, & Sattari, 2013). It could evoke damage but also provoke responses to avoid or restore damage (Kranner, Minibayeva, Beckett, & Seal, 2010).

*Well-Being*: In pursuit of defining well-being has always been complicated and difficult as it is an elusive and multi-faceted concept (Carter & Andersen, 2019; Kahn & Juster, 2002). It could encompass all the potential positive ways in which people experience and decipher their lives; it could be in the sense of happiness, prolonged state of contentment or wellness (Tov, 2018). It is not only putting emphasis in evaluating one's own life emotionally and cognitively, but also in fulfilling particular needs for one's complete psychological growth and development (Diener, Subjective well-being, 1984; Ryan & Deci, On happiness and human potentials: A review of research on hedonic and eudaimonic well-being, 2001).

## **1.5 Operational Definition**

An operational definition is the statement of protocols to be utilized to measure a specific variable by the researchers in a study. It is important to assess the validity, replicability, generalizability and information dissemination of a particular study. It

could display the exact and accurate meaning of what the researchers are trying to convey through the variables involved (Sokolov, 2018).

*Mindfulness:* In the current study, mindfulness is operationalized by the delivery of guided imagery relaxation technique. The mindfulness of an individual could be developed through the practice and application of guided imagery relaxation technique (Gutman, Sliwinski, Laird, & Nguyen, 2020).

*Stress:* In the present study, stress is operationally defined by the scores revealed from the Stress in Children (SiC) questionnaire. The scale will be used in present study to measure the level of stress of the elementary school children (Osika, Friberg, & Wahrborg, 2007).

*Well-Being:* In the current study, well-being is operationalized as the scores obtained from the parent-reported version of Strength and Difficulties Questionnaire (SDQ-PR). In the past journal articles, SDQ-PR was predominantly used for assessing psychopathological symptoms and mental health difficulties faced by children and adolescents (He, Burstein, Schmitz, & Merikangas, 2013; Muris, Meesters, & van den Berg, 2003; Ortuño-Sierra, Aritio-Solana, & Fonseca-Pedrero, 2018). The scale had also been used previously and to measure the level of psychosocial well-being of the primary school children in current study (Bohl, Dzino-Siladjic, & Ryan, 2018; Goodman & Goodman, 2009; Laurens et al., 2017; Vallejo-Slocker, Fresneda, & Vallejo, 2020).

## **1.6 Research Objectives**

The main objective of the current study is to examine the effects of guided imagery relaxation technique on stress and well-being of primary school children in Kubang Kerian, Kelantan. The two specific objectives are as below:

1. To examine the effect of guided imagery relaxation technique in affecting the stress level of primary school children in Kubang Kerian, Kelantan.
2. To examine the effect of guided imagery relaxation technique in affecting the well-being of primary school children in Kubang Kerian, Kelantan.

## **1.7 Research Questions**

There are two research questions derived from the problem statement to be answered through the study:

1. What is the effect of guided imagery relaxation technique on the level of stress of primary school children in Kubang Kerian, Kelantan?
2. What is the effect of guided imagery relaxation technique on the well-being of primary school children in Kubang Kerian, Kelantan?

## **1.8 Research Hypotheses**

The two hypotheses of the research study are made as below:

### **First hypothesis**

$H_0$  = Guided imagery relaxation technique has no significant effect on the stress level of primary school children in Kubang Kerian, Kelantan.

$H_1$  = Guided imagery relaxation technique reduces stress level of primary school children in Kubang Kerian, Kelantan.

### **Second hypothesis**

$H_0$  = Guided imagery relaxation technique has no significant effect on the well-being of primary school children in Kubang Kerian, Kelantan.

$H_1$  = Guided imagery relaxation technique improves the well-being of primary school children in Kubang Kerian, Kelantan.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The chapter focuses on the review of the past journal articles as the base support of current research study. It introduces and defines the concepts of well-being, stress, mindfulness, guided imagery relaxation technique and its effectiveness on stress and well-being within adults and children from different perspectives. Besides, it also addresses the gaps of knowledge that lead to the rationale and objectives of current research study. Subsequently, the chapter ends with the theoretical and conceptual framework as a structure demonstration for current study.

## 2.2 Well-Being

Well-being could be defined as the presence of optimal psychological health, functioning and experience; not only being well in everyday interpersonal enquiries, but also about the intense scientific studies (Belzak, Thrash, Yoon, & Wadsworth, 2017; Ryan & Deci, On happiness and human potentials: A review of research on hedonic and eudaimonic well-being, 2001). In summing up different explanations made by different researchers, well-being could be defined by using four sub-categories: (1) orientations, about what a person seeks for in life and reasons to it; (2) behaviours, about the physical activities that the individual involves in; (3) experiences, about the fleeting or distinctive subjective affect and emotions; as well as (4) functioning, about how well and how far an individual has been doing in his or her life (Huta & Waterman, Eudaimonia and its distinction from hedonia: Developing a classification and terminology for understanding conceptual and operational definitions, 2014). The first two explains the ways of living while the latter two represents the outcomes of well-being (Huta, 2016). To understand well-being as a whole, there are two relatively distinctive yet correlated models in explaining it in the field: (1) hedonic and (2) eudaimonic (Joshnloo, 2016).

The hedonic view, which can be also known as subjective well-being, is to maximize the amount of happiness, excitement and pleasant moments in life (Disabato, Goodman, Kashdan, Short, & Jarden, 2016; Ryan & Deci, 2001). It explains a wide range of phenomena, which encompasses people's emotional expressions, domain satisfactions and global evaluations of life satisfaction (Diener, 1984; Diener, Oishi, & Tay, 2018; Diener, Suh, Lucas, & Smith, 1999; Heintzelman et al., 2019). Thus, subjective well-being is a broad conceptualization of low level of negative emotion,

high levels of pleasant mood and life satisfaction (Diener, Oishi, & Lucas, 2002). According to the reviewed studies, elevated level of subjective well-being will bring upon abundant beneficial outcomes, for example good health and longevity, caring social relationships, high work productivity and citizenship (Diener et al., 2017).

For the eudaimonic view, which is also termed as psychological well-being, searches for true happiness through the expression of virtue, excellence or fullest potential (Disabato et al., 2016; Ryan & Deci, 2001). The contents of psychological well-being also involve meaning and value, personal growth and self-actualization, as well as authenticity and autonomy (Huta, 2016). Thus, eudaimonia occurs to someone when he or she deeply holds onto values or beliefs which are fully engaged in congruence (Waterman, 1993). Ryff (1989) described psychological well-being by using a six-dimensional model derived from philosophical, humanistic, existential and developmental theories: self-acceptance, environmental mastery, positive relations with others, autonomy, purpose in life and personal growth. Unlike hedonia, there is much lesser consensus among modern researchers about the composition of eudaimonia (Huta & Waterman, 2014).

Credited and widely recognized as the Father of Positive Psychology, Martin Seligman had also created his own PERMA acronym, an identification of five useful indicators in defining well-being and contributing to a human being's flourishing: positive emotion (P), engagement (E), relationships (R), meaning (M) and accomplishment (A; Seligman, 2018). In his conceptual model, Martin Seligman believed that each five domain in PERMA would be beneficial to facilitate an individual in searching for happiness, fulfilment and meaning in their lives, which could lead to a

result of human thriving (Slavin, Schindler, Chibnall, Fendell, & Shoss, 2012). He once argued that the previous models proposed by other scholars include only either hedonia or eudaimonia, but his model of well-being was able to encompass both components of hedonia and eudaimonia into a single model (Goodman, Disabato, Kashdan, & Kauffman, 2018).

First of all, the element of positive emotion (P) could be subjectively defined by using happiness, life satisfaction, pleasure or comfort. Next, engagement (E) brings the definition of a deeply-rooted psychological connection or fully absorption to an activity, system or cause; a full engagement could lead someone into a state of flow, which the individual may not be aware of the passing of time or their own positive cognition and affect (Nakamura & Csikszentmihalyi, 2002). Subsequently, relationships (R) refer to the feelings of being socially integrated, being embraced and cared by the social network or significant others in the surrounding. As the fourth component, meaning (M) describes an individual having a sense of purpose and future life pathway, as well as feeling associated with something beyond himself or herself. Across many cultures, attaining accomplishment is to progress toward one's goals or achieve great success for external recognition and personal sense of achievement. However, to Martin Seligman, pursuing accomplishment (A) is often something happened just for its own sake, even when it would not bring any positive emotion, meaning or relationships (Butler & Kern, 2016; Khaw & Kern, 2014; Seligman, 2011).

The individual, who possesses both hedonic and eudaimonic well-being, is said to be more well-rounded because both paradigms fill up different niches of well-being (Huta, 2016). Other than focus on the adults, it is also important to raise concern about

the well-being of elementary school children (Ruit, Korthagen, & Schoonenboom, 2019). According to the past studies done, the factors that may influence the well-being of primary school children were social relationships, bullying or violence, living condition, safety of living environment and settings, trust and worthiness (González-Carrasco, Casas, Ben-Arieh, Savahl, & Tiliouine, 2019; Kellock, 2020; Rees, 2019; Tomlinson, Keyfitz, Rawana, & Lumley, 2017). Through the successful development of well-being within primary school children, they will be more able to possess competence, autonomy and motivation throughout their years in higher academic institutions (Smedegaard, Christiansen, Lund-Cramer, Bredahl, & Skovgaard, 2016).

Since the beginning of 2020, the widest educational system disruption ever in the human history had been created by the COVID-19 global pandemic and greatly disturbing approximately 1.6 billion of school children from more than one hundred ninety countries all over the world (UNESCO, 2020). The well-being of school children was at stake and there was a need to safeguard them from the upsetting catastrophe; therefore, the importance of recognizing, studying and objectively measuring the children's well-being had become the pivot of many recent studies (Shoshani & Slone, 2017). To study and promote children's well-being, it was always something inseparable from health promotion about the socio-emotional development and their needs satisfaction (Gadermann et al., 2016; Mag, 2015). As for a good construct to assess the children's well-being and mental health, not only it shall be age-appropriate and theoretically relevant to their developmental stages, but also could be reflective of their present and future psychosocial and emotional functioning (Ben-Arieh, Casas, Frønes, & Korbin, 2014; Cheevers & O'Connell, 2013; Cho & Yu, 2020).

Often, well-being needs to be properly conceptualized with multi-dimensional notions and is difficult to be narrowed down to merely single aspect (Taris & Schaufeli, 2018). According to the emerging evidence, five structural theoretical axes could possibly be unfolded to make sense in studying and evaluating well-being: (1) positive versus negative, (2) objective versus subjective, (3) state versus process, (4) material versus spiritual and (5) individual versus community (Ben-Arieh et al., 2014). From the binary axes proposed, it could be further evidenced for the importance of taking different connotation into account for studying the term of “well-being” (Amerijckx & Humblet, 2014). In order to measure the different aspects and functions for well-being across environmental structure of an individual, abundant of different clinical instruments had been developed to measure from diverse conceptualizations of well-being, including wellness, quality of life as well as hedonic and eudaimonic approaches, rather than having a standard, multi-dimensional tool measure for the term (Cooke, Melchert, & Connor, 2016; Huppert & So, 2013; McDowell, 2010).

Although there were many available instruments to be used for assessing the well-being of adult; nevertheless, well-designed and suitable assessments to evaluate the well-being and mental health of children, especially twelve years old and below, were relatively limited. Some common scales utilized for measuring children and adolescents' different dimensions of well-being were Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS), Student's Life Satisfaction Scale (SLSS), Personal Wellbeing Index-School Children (PWI-SC), Ryff's Scales of Psychological Well-Being (RSPWB), WHO-5 and WHO-10 Well-Being Index, Positive and Negative Affect Scale for Children (PANAS-C), Satisfaction with Life Scale adapted for Children (SWLS-C), Warwick-Edinburgh Mental Well-Being Scale (WEMWBS),

Strengths and Difficulties Questionnaire (SDQ), EPOCH Measure of Adolescent Well-Being and KIDSCREEN (Casas, Bello, González, & Aligué, 2013; Cho & Yu, 2020; Gadermann et al., 2016; Kern, Waters, Adler, & White, 2015; McDowell, 2010; Shoshani & Slone, 2017). The internal reliability of aforementioned assessment tools was good and adequately acceptable in overall, with their reliability coefficients fell within the range of  $\alpha = .75$  and  $.94$  (Clarke et al., 2011; Cooke et al., 2016; De Wit, Pouwer, Gemke, Delemarre-Van De Waal, & Snoek, 2007; Gadermann, Schonert-Reichl, & Zumbo, 2010; Goodman, 2001; Huebner, 1991; Kern, Benson, Steinberg, & Steinberg, 2016; Laurent et al., 1999; Ravens-Sieberer et al., 2014; Ryff, 1989; Seligson, Huebner, & Valois, 2003; Tennant et al., 2007; Tomin, Tyszkiewicz, & Cummins, 2013).

### **2.3 Stress**

Stress could be defined in physics as the interaction between a force and the resistance to counter it; it is a “non-specific response of the body to any demand”, as according to the Father of Stress Research, Hans Selye (Tan & Yip, 2018). It appears to be correlated with numerous important conditions of the body: physiological, psychological and behavioural responses (Schuler, 1980). Physiologically, the body will respond to any change, threat or pressure put upon it, be it from within or external force, by trying to regain its normal state and safeguard itself from any potential harm (Selye, What is stress?, 1956). From the historical perspective, the conceptualization of stress focused on the changes in endocrine system. The initial changes could be related to the increase of catecholamines secretion or activation of pituitary-adrenal system (Levine, 1985).

Selye differentiated two main types of stress: eustress (pleasant stress) and distress (unpleasant stress; Selye, 1956). He termed the total response as a condition named General Adaptation Syndrome (GAS), which could be differentiated into three stages: alarm reaction, stage of resistance and stage of exhaustion. At the first stage, the individuals may find themselves caught off guard when they are first exposed to a stressor. The individuals may soon notice their heart rate increase and the natural reaction is a fight-or-flight response in responding to stress. In the subsequent stage, the body will start to resist the change, compensate and attempt to maintain homeostasis by “repairing” itself (Higuera, 2017; Tan & Yip, 2018). Most of the bodily feature manifestations diminished or reversed during the stage of resistance may reappear in the stage of exhaustion as if the stressors go beyond the endurance of body capacity (Selye, 1950). The vulnerability of body exhaustion will weaken the immune system and increase the susceptibility to illness (Higuera, 2017; Lucille, 2016).

To Selye, stress response is normally triggered by an internal or external stressor, which includes physical threats, a fight with significant others, tight deadlines or the loss of something or someone loved (Selye, 1956). As to Lazarus and Folkman, their transactional model of stress highlights that both environment and individual’s cognitive appraisal process contribute to the production of stress, rather than only readily explained by either one of them. The cognitive appraisals emphasize on an individual’s beliefs or capabilities to meet and alter the demands from the environment resources to serve the interests of well-being. The cognitive evaluation process generates emotions; when the stimuli are perceived as negative and threatening, the subsequent feeling of distress would then initiate coping strategies to acknowledge and

deal with the stressors (Biggs, Brough, & Drummond, 2017; Lazarus, DeLongis, Folkman, & Gruen, 1985).

When the coping strategies emerge, an outcome would be generated as a result, which would be re-evaluated as either favourable, unfavourable or unresolved. The favourable resolution of stressors would provoke positive emotions, while unfavourable and unresolved resolutions provoked negative emotions, prompting the individual to elicit other coping strategies for resolution of stressors. The importance of the theory is placed on the perception about a particular event, rather than the event itself, to examine whether any coping strategy is needed to be initiated to cope with stress or is the stressor successfully resolved or not. Thus, stress could be significantly influenced by both individual's cognitive appraisal and environmental factors and may cause immediate or even long-term effects from the aspects of affective, behavioural and cognitive (Biggs et al., 2017; Folkman, Lazarus, Pimley, & Novacek, 1987; Lazarus & Folkman, 1986; Lazarus et al., 1985).

While stress was found to be imposing adverse effects on the adults, the prepubescent children could be greatly affected by it as well, especially causing cognitive damage (Pellissier, 2014). Some of the stressors that could be associated with primary school children were low socioeconomic status, poverty, poor parenting style and family structure, high academic expectation, self-image management, physical abuse and violence (Dissing, Dich, Andersen, Lund, & Rod, 2017; Gershoff, 2016; Gupta, Rajeswaran, Bhattacharya, Ojha, & Bennett, 2018; McEwen & McEwen, 2017; Simons, Cillessen, & de Weerth, 2017; Theall, Shirtcliff, Dismukes, Wallace, & Drury, 2017). The children who exposed to chronic stress were at higher risk for behavioural

and cognitive problems, ranged from problematic decision making, substance abuse to other criminal acts (Birn, Roeber, & Pollak, 2017; Sotardi, 2016; van de Weijer-Bergsma et al., 2014). Hence, it is crucial to get the children well-equipped with adaptive coping techniques or approaches to manage the negative affective experiences (Bothe et al., 2014; Perry-Parrish et al., 2016; Rabenu et al., 2017).

Especially amidst the hard time of getting struck by COVID-19 pandemic globally, the children were confronted with reality changes to adhere to the novel preventive measures by staying indoor for home lockdown and maintaining social distancing to reduce the spreading of the contagious disease (Bruining, Bartels, Polderman, & Popma, 2021). The restriction on their physical freedom had prohibited them from engaging in their usual school life and social interaction beyond the household area (Andrews, Foulkes, & Blakemore, 2020). Although children and adolescents were less impacted in terms of infectious morbidity and mortality, as compared to the adults, the conundrums had still been manifested on them psychologically and behaviourally. Along the home lockdown period, they would have experienced distress and uncertainties as well as missing school over an extended period, which could induce long-term effects toward their well-being (Achterberg, Dobbelaar, Boer, & Crone, 2021). The children shall be spoken to and their emotions shall be addressed by giving proper explanation and further declarations on the present situation so that they would not be stressed up by the confusion or lack of confidence in dealing with the unknown in the future (de Miranda, da Silva Athanasio, de Sena Oliveira, & Silva, 2020; Green, 2020; Jiao, et al., 2020).

What makes it important to assess the stress level within children and adolescents? According to the emerging studies, limitation on the children's physical activity and having peer interaction within the home lockdown period may increase their distress and irritation; those with sensitive temperament may come to term with the difficulties in regulating their own emotions and cognition in an irrational way (Liu & Doan, 2020; Zhang et al., 2020). When the children were being exposed to stress response and maintaining a lower level of physical activity at the same time, they may not be able to regulate the hypothalamic-pituitary-adrenocortical axis (HPAA) due to the dysregulated negative feedback (Martikainen et al., 2013). They would tend to possess negative appraisals in perceiving threat and data-driven processing (Meiser-Stedman et al., 2019).

Subsequently, the extended period of activation on HPAA could trigger the releasing of stress-induced hormones and catecholamines, which may contribute to the compromised nervous, endocrine and immune systems (Jiao et al., 2020; McEwen, 2006; Price, 2021; Tsigos & Chrousos, 2002). In terms of longitudinal effects, a dysregulated HPAA could be associated with behavioural changes and cognitive impairments, such as poor executive functioning abilities, deterioration in memory and learning skills or being conditioned to fear and hypervigilance (Cerqueira, Mailliet, Almeida, Jay, & Sousa, 2007). The alterations on multiple organ systems could expose the children to the risk of chronic physical illnesses and negative psychological outcomes, such as cardiovascular disease, obesity, asthma and depression, when they were transitioning into adulthood at later stage (Bucci, Marques, Oh, & Harris, 2016; Compas, Jaser, Dunn, & Rodriguez, 2012; Djavad Mowafaghian Centre for Brain Health, 2020; Johnson, Riley, Granger, & Riis, 2013).

It was revealed to be substantially crucial to construct a measuring tool from the perspective of children and adolescents so that the researchers could obtain clearer meaning and comprehensibility from those whoever answered the instrument (Casas, González, Navarro, & Aligué, 2013). Moreover, increasing concern in understanding the stressors and stress perception within children and adolescents could be noticed in recent years. Hence, some psychometrically-sound psychological instruments examining the perceived stress of children and adolescents were created, although many scales were still being designed age-appropriately for children above twelve years old. These scales used and included in the past journal articles were as following: Coddington Life Events Scale for Children (CLES-C), Stressful Life Events Scale (SLES), Children's Hassles Scale (CHS), Life Events and Coping Inventory (LECI), Adolescents Self-Rating Life Events Checklist (ASLEC), Stress in Children Questionnaire (SiC), Children's Daily Stress Inventory (CDSI), Chronic Stress Questionnaire for Children and Adolescents (CSQ-CA), Perceived Stress Scale in Children (PSS-C), Self-Assessment Manikin (SAM), Psychological Stress Measure-9 (PSM-9), Verbal Rating Scale for Stress (VRSS) and Perceived Stress Questionnaire 8-11 (Allwood, Gaffey, Vergara-Lopez, & Stroud, 2017; Gokkaya & Kargul, 2020; Kertes et al., 2017; Flynn, Jones, & Ausderau, 2016; Nilsson, Forsner, Finnström, & Mörelius, 2015; Turner-Cobb, 2014; Ouyang et al., 2021; Vanaelst, De Vriendt, Huybrechts, Rinaldi, & De Henauw, 2012; Villalonga-Olives et al., 2010).

The psychological measures of perceived stress for children and adolescents were found to be having acceptable and adequately good internal reliabilities, with their correlation coefficients ranged within the range of  $\alpha = .62$  and  $.95$  (Bradley & Lang,

1994; De Bruin, Sieh, Zijlstra, & Meijer, 2018; Dise-Lewis, 1988; Lemyre & Tessier, 2003; Liu et al., 1997; Osika et al., 2007; Parfenoff & Jose, 1989; Snoeren & Hoefnagels, 2014; Torres, Mena, Baena, Espejo, & Sánchez, 2009). Other than using the psychological measuring tools, it is also important and practical to utilize the biological approach, which is measuring the children's cortisol level as a stress biomarker, to overcome the weaknesses intrinsic to subjective nature of an assessment tool. Even if it is to develop cortisol analysis, it could be evaluated through different biological samples, such as blood, urine, saliva and hair (Allwood et al., 2017; Kertes et al., 2017; Michels et al., 2013; Nilsson et al., 2015; van Andel, Jansen, Grietens, Knorth, & van der Gaag, 2014). Each type of biological specimen possesses their respective strengths and weaknesses; however, measurement through salivary cortisol, out of all of the aforementioned types of biological specimen, could be considered as a more standard and well-developed practice within children stress research studies due to its cost effectiveness and non-invasiveness (Keil, 2012; Vanaelst et al., 2012).

## **2.4 Mindfulness**

Mindfulness is a process of becoming aware and openly attending to one's experience in the present moment with accepting stance (Creswell, 2017; Greenberg & Harris, 2012; Sutcliffe, Vogus, & Dane, 2016). It is also "a trainable skill of intentionally remembering to pay attention without habitual reaction" (Black & Fernando, Mindfulness training and classroom behavior among lower-income and ethnic minority elementary school children, 2014). Being in the state of mindfulness can help an individual in generating new perception of one's actions as well as the interpretation

toward environment or the world (Capel, 2012; Jayaraja, Tan, & Ramasamy, 2017). All definitions of mindfulness are originated in certain scholastic, practice and cultural traditions; hence, it must be understood from within those contexts (Quaglia, Braun, Freeman, McDaniel, & Brown, 2016).

Mindfulness has always been an essential element of Buddhism mental training for centuries as the classical Buddhism emphasizes on holding clear-minded attention and awareness of what is perceived in the present (Brown & Ryan, 2003; Good, et al., 2016; Quaglia, Brown, Lindsay, Creswell, & Goodman, 2015). Although Buddhism serves as a great information base of the psychological research on mindfulness and its related interventions; however, mindfulness is not merely exclusive to Buddhism or Buddhist contemplative practices (Creswell, 2017). As a product of the contemporary “third wave” approaches, mindfulness-based interventions (MBIs) have experienced a marked increase in becoming the focus to improve mental health and promote well-being within adult populations in the past thirty years (Churchill et al., 2010; Gu et al., 2015; Ramli et al., 2018; van de Weijer-Bergsma et al., 2014).

In the contemporary society, MBIs and techniques are on the rise in becoming topic of interest for researchers in applying and evaluating their effectiveness on individuals across various settings or contexts: organizational (Sutcliffe et al., 2016), school (Gouda, Luong, Schmidt, & Bauer, 2016), hospital (Wang, et al., 2017), physical rehabilitation (Hardison & Roll, 2016), prison (Auty, Cope, & Liebling, 2017), military (van Tilborg, Bijlsma, & Muis, 2019) and online-based (Jayawardene, Lohrmann, Erbe, & Torabi, 2017). The practice of mindfulness-based approaches not merely improve on mental health and well-being of the individuals, but also enhance their productivity and