



UNIVERSITI PUTRA MALAYSIA

***EFFECTIVENESS OF GROUP COGNITIVE BEHAVIOURAL THERAPY
ON DEPRESSION, NEGATIVE AUTOMATIC THOUGHTS, ANXIETY,
SELF-ESTEEM AND ANGER AMONG ADOLESCENTS IN SHELTERED
HOMES***

DING WAI ENG

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SHELTERED HOMES**

By

DING WAI ENG

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in the Fulfilment of the Requirements for the Degree of Doctor of Philosophy**

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment
of the requirement for the Degree of Doctor of Philosophy

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May 2021

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Literature on adolescents residing at sheltered homes and the effectiveness on group cognitive behavioural therapy (gCBT) for treating adolescent emotional distress are scarce in Malaysia. In Phase 1, this study aimed to determine the prevalence and associated factors of depression, anxiety, negative automatic thoughts, self-esteem, and anger among adolescents residing at Malay-operated non-government-run sheltered homes in Selangor, Malaysia. In Phase 2, a randomised controlled trial (RCT) aimed to examine the effectiveness of gCBT (SAHABAT programme) compared to waitlist control on depression, anxiety, negative automatic thoughts, self-esteem, and anger in orphaned adolescents residing at sheltered homes di Selangor.

Phase 1. Six hundred thirty-two adolescents aged 13 to 17 years from 17 out of 417 Malay-operated non-government-run sheltered homes completed a set of questionnaires ($n = 281$ from non-*tahfiz*-based sheltered homes; $n = 351$ from *tahfiz*-based sheltered homes). Data analysis involved descriptive statistics, t-tests, and generalised linear mixed model (GLMM). The number of non-orphans ($n = 335$; 53%) and orphans ($n = 297$; 47%) were almost equal. The prevalence from mild to severe symptomatology of depression and anxiety in this study were 70.9% and 82.3% respectively, with 64.1% for comorbidity of both symptomatology. Next, the prevalence of having negative automatic thoughts from sometimes to very often was 100.0%. Meanwhile, the prevalence of low and high self-esteem were 22.6% and 77.4% respectively. The prevalence of anger symptomatology from mild to extremely elevated anger was 37.4%. Age, anxiety, negative automatic thoughts, self-esteem and anger were significantly associated with depression. Depression, negative automatic thoughts, and anger were significantly associated with anxiety. In addition, depression, anxiety, self-esteem, and anger were significantly associated with negative automatic

thoughts. Meanwhile, self-esteem was not significantly related to anxiety and anger. When depression, anxiety, and anger increased, more frequent negative automatic thoughts were reported. Adolescents who had low self-esteem had higher scores for depression, anxiety, negative automatic thoughts and anger than those who had high self-esteem. The prevalence of depression, anxiety, and negative automatic thoughts are high among adolescents residing at sheltered homes. Modifying negative thoughts in therapy is crucial as it is associated with most psychological variables.

Phase 2. Nine out of 17 sheltered homes were allocated to either the intervention group (4 homes, $n = 71$) or waitlist control group (5 homes, $n = 68$). The participants of the RCT consisted of orphaned adolescents only. The intervention group attended 8 bi-weekly sessions of SAHABAT programme over one month. Data were measured across 6 time-points, namely, pre-, mid-, and immediate post-intervention, and 1-month, 3-month, and 6-month post-intervention. Data analysis involved descriptive statistics, t-tests, and generalised linear mixed model (GLMM). SAHABAT programme was superior to waitlist control in reducing symptomatology of depression, anxiety, negative automatic thoughts, and anger, and increasing self-esteem across time from pre-intervention to 6-month post-intervention. These findings have bridged the research gap in providing evidence-based for gCBT in treating adolescent emotional distress in Malaysia.

These findings signal the outreach for identifying emotional distress in adolescents residing at sheltered homes and psychological services for this population.

Keywords: Adolescents, anxiety, depression, group cognitive behavioural therapy, negative automatic thoughts, self-esteem

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk Ijazah Doktor Falsafah

**KEBERKESANAN TERAPI KOGNITIF TINGKAHLAKU BERKUMPULAN
TERHADAP KEMURUNGAN, FIKIRAN NEGATIF AUTOMATIK,
KERESAHAN, HARGA DIRI DAN KEMARAHAHAN REMAJA DI RUMAH-
RUMAH TERLINDUNG**

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Kajian lepas tentang kalangan remaja yang tinggal di rumah-rumah terlindung dan keberkesanan terapi kognitif tingkahlaku berkumpulan (gCBT) merawat remaja yang mengalami tekanan emosi adalah terhad di Malaysia. Pada Fasa 1, kajian ini menentukan prevalens dan faktor-faktor yang berkaitan dengan kemurungan, keresahan, pemikiran negatif automatik, harga diri dan kemarahan di kalangan remaja yang tinggal di rumah-rumah terlindung bukan kerajaan yang diuruskan oleh Melayu di Selangor, Malaysia. Pada Fasa 2, kajian percubaan terkawal rawak (RCT) ini menentukan keberkesanan gCBT (program SAHABAT) berbanding dengan kawalan senarai tunggu terhadap kemurungan, keresahan, pemikiran negatif automatik, harga diri dan kemarahan di kalangan remaja yatim yang tinggal di rumah-rumah terlindung di Selangor.

Fasa 1. Sebanyak 632 remaja berumur 13 hingga 17 tahun daripada 17 daripada jumlah 417 buah rumah-rumah terlindung bukan kerajaan yang diuruskan oleh Melayu menjawab satu set borang-borang soal selidik ($n = 281$ daripada rumah-rumah terlindung bukan tahfiz; $n = 351$ daripada rumah-rumah terlindung bukan tahfiz). Analisis data melibatkan statistik deskriptif, ujian t, dan *generalised linear mixed model* (GLMM). Bilangan anak-anak yatim ($n = 335$; 53%) dan bukan anak-anak yatim $n = 297$; 47%) di rumah-rumah terlindung adalah lebih kurang sama. Prevalens simptomatologi kemurungan dan keresahan daripada ringan hingga teruk adalah 70.9% dan 82.3% masing-masing, di mana 64.1% mengalami kedua-dua simptomatologi. Umur, keresahan, pemikiran negatif automatik, harga diri dan kemarahan adalah secara signifikan berkaitan dengan kemurungan. Kemurungan, pemikiran negatif automatik, dan kemarahan adalah secara signifikan berkaitan dengan keresahan. Tambahan lagi, hubungan-hubungan di antara kemurungan,

keresahan, harga diri, dan kemarahan dengan pemikiran negatif automatik adalah signifikan. Sementara itu, harga diri tidak secara signifikan berkaitan dengan kemurungan dan kemarahan. Pemikiran negatif automatik yang lebih kerap dilaporkan apabila kemurungan, keresahan dan kemarahan semakin meningkat. Remaja yang mempunyai harga diri yang rendah memberi skor yang lebih tinggi untuk kemurungan, keresahan, pemikiran negatif automatik dan kemarahan berbanding dengan mereka yang mempunyai harga diri yang tinggi. Prevalens kemurungan, keresahan dan pemikiran negatif automatik adalah tinggi di kalangan remaja yang tinggal di rumah-rumah terlindung. Pengubahsuaian pemikiran negatif automatik adalah penting semasa terapi kerana ia berkaitan dengan kebanyakan pembolehubah psikologi.

Fasa 2. Sembilan daripada jumlah 17 rumah terlindung Melayu yang dipilih untuk kumpulan SAHABAT (4 rumah, $n = 71$) atau kawalan senarai tunggu (5 rumah, $n = 68$). Peserta-peserta RCT hanya terdiri daripada remaja yatim sahaja. Kumpulan intervensi mengikuti lapan sesi terapi program SAHABAT dua kali seminggu dalam jangkamasa sebulan. Data diukur pada 6 masa-selang: pra-, pertengahan-, pasca pos-intervensi, dan 1-bulan, 3-bulan dan 6-bulan pos-intervensi. Analisis data melibatkan statistik deskriptif, ujian t, dan *generalised linear mixed model* (GLMM). Program SAHABAT adalah berkesan mengurangkan simptom kemurungan, keresahan, pemikiran negatif automatik dan kemarahan, dan meningkatkan harga diri berbanding dengan kawalan senarai tunggu pada selang masa dari pra-intervensi hingga 6-bulan pos-intervensi. Penemuan ini telah merapatkan jurang penyelidikan dan memberikan bukti berdasarkan gCBT dalam menangani tekanan emosi remaja di Malaysia.

Penemuan ini menandakan jangkauan untuk mengenal pasti tekanan emosi remaja-remaja yang tinggal di rumah-rumah terlindung, dan menyediakan perkhidmatan psikologi untuk populasi ini.

Kata kunci: Remaja, keresahan, kemurungan, terapi kognitif tingkah laku berkumpulan, pemikiran negatif automatik, harga diri

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This thesis was submitted to the Senate of the Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follow:

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LIST OF ABBREVIATIONS

AIC	Aikake Corrected
ATQ-Malay	Malay version of Automatic Thought Inventory
BAI-Malay	Malay version of Beck Anxiety Inventory
BAI-Y Malay	Malay version of Beck Anxiety Inventory for Youth
BANI-Y Malay	Malay version of Beck Anger Inventory for Youth
BDBI-Y Malay	Malay version of Beck Disruptive Behaviours for Youth
BDI-Malay	Malay version of Beck Depression Inventory
BDI-Y Malay	Malay version of Beck Depression Inventory for Youth
BSCI-Y Malay	Malay version of Beck Self-Concept Inventory for Youth
BYI-2 Malay	Malay version of Beck Youth Inventories Second Edition
CES-D	Centre for Epidemiology Studies Depression Scale
CFI	Comparative Fit Index
CI	confidence interval
Deff	design effect
<i>df</i>	degree of freedom
<i>F</i>	<i>F</i> -value
HoCA	history of counselling attendance
ICC	intra-class correlation
IFI	Incremental Fit Index
<i>LL</i>	lower limit
NAT	negative automatic thought
NFI	Normed Fit Index
RSES-Malay	Malay version of Rosenberg Self-Esteem Scale

RMSEA	Root Mean Square Error of Approximation
<i>SE</i>	standard error
<i>t</i>	<i>t</i> -test
TLI	Tucker Lewis Index
<i>UL</i>	upper limit



LIST OF SYMBOLS

$>$	greater than
$<$	less than
\geq	greater than or equals to
χ^2	Chi-square
η^2	eta-squared
χ^2/df	relative chi-square



CHAPTER 1

INTRODUCTION

1.1 Background

The World Health Organization (WHO, 2019) has reported that one in six children and adolescents aged 10 to 19 years old has mental health problems. In the United States of America (USA), an investigation conducted from 1994–2011 showed that 13% to 20% of children aged 12–17 years old experienced at least one mental disorder and this condition showed an increasing trend (Perou et al., 2013). A similar trend was reported in Malaysia, whereby the prevalence of mental health issues among children and adolescents aged 5 to 15 years old increased from 13.0% in 1996 to 20.0% in 2011 (criterion: RQC¹), with socially and economically disadvantaged children being particularly affected (Ahmad et al., 2015).

The United Nations International Children's Emergency Fund (UNICEF, 2017) reported that there were approximately 140 million orphans globally in 2015. Out of 140 million orphans, 15.1 million had lost both parents. Being an orphan can have strong psychosocial impacts.

Limited literature and empirical studies on the well-being of adolescents and orphans in sheltered homes in Malaysia. Yaacob, Ahmad and Wan Kamalhuarifin (2020) proposed the first comprehensive social well-being index for orphans which includes the socio-economic, psycho-social, interpersonal relationship, environment and education aspects as a reference source for governmental agencies acting on the well-being policy for the orphans.

In the psychology field, theoretical models have delineated that negative thoughts could lead to depression (Beck, 1967), anxiety (Beck, Emery, & Greenberg, 1985), low self-esteem (Fennell, 1998), and anger (Novaco, 1994). As for treatment, meta-analysis and systematic review on psychotherapies have reported that cognitive behavioural therapy (CBT), particularly in randomised controlled trial (RCT), is effective to treat children and adolescents with depression (García-Escalera, Chorot, Valiente, Reales, & Sandín, 2017; Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012; Keles & Idsoe, 2018; Klein, Jacobs, & Reinecke, 2007; Paixão, 2013; Soares, Camargo, & Pizzinato, 2013; Weisz, McCarty, & Valeri, 2006; Zhou et al., 2015), and

¹ Reporting Questionnaire for Children

anxiety (Cartwright-Hatton, Roberts, Chitsabesan, Fothergill, & Harrington, 2004; Davis, Souza, Rigatti, & Heldt, 2014; García-Escalera et al., 2017; Hofmann et al., 2012; Ishikawa, 2015; Kreuze, Pijnenborg, de Jonge, & Nauta, 2018; Olsson et al., 2021; Soares et al., 2013). Studies have also shown that CBT was effective in changing negative automatic thoughts of adolescents to be more positive (Asarnow, Scott, & Mintz, 2002; Prins & Ollendick, 2003; Saw, Tam, Thanzami, & Bonn, 2020), improving their self-esteem (Dobson, Ahnberg Hopkins, Fata, Scherrer, & Allan, 2010; Stallard et al., 2005; Taylor & Montgomery, 2007), and controlling their anger (Hofmann et al., 2012; Hoogsteder et al., 2015; Sukhodolsky, Kassinove, & Gorman, 2004).

Meanwhile, CBT is the current gold standard of psychotherapy because it is the most researched form of psychotherapy and other forms of psychotherapies have not been shown to be systematically superior to CBT (David, Cristea, & Hofmann, 2018). A Malaysian-adapted CBT programme, i.e., SAHABAT, is used in this study. It incorporates Malaysian culturally-specific psychopathological conditions.

1.2 Problem Statement

In Malaysia, 18% out of 31 millions population are adolescents (Othman & Essau, 2019). Adolescence is a critical developmental phase because there are significant changes in physical, behaviours, emotions, and cognition. Also, a crucial need to address adolescence depression and anxiety. Adolescent depression and anxiety are progressive, relapsing, and persisting through adulthood (Bohman et al., 2010; Kessler et al., 2012). Moreover, adolescent depression and anxiety have short-term and long-term sequelae such as academic underachievement, nicotine and substance abuse, poor relationships, suicidality, crimes, poor coping and stress, relapsed depression and anxiety, and unemployment (Fergusson & Woodward, 2002; Essau, Lewinsohn, Olaya, & Seeley, 2014; Anderson, Cesur, & Tekin, 2015; Benjamin, Harrison, Settupani, Brodman, & Kendall, 2013; Dabkowska & Dabkowska-Mika, 2015). Adolescent depression and anxiety can cause functional impairments to the sufferers and increase healthcare cost.

Prevalence rates of emotional distress including depression, anxiety, and low self-esteem were often high among orphans living in institutionalised care (Fawzy & Fouad, 2010; Mohammadzadeh, Awang, Kadir Shahar, & Ismail, 2018; Ramagopal, Narasimhan, & Devi, 2016). The potential harm caused by institutionalised care setting on children is available, however, there appears scarce published research literature on orphans in the institutionalised care settings across Southeast Asia (Rogers, Whitelaw, Karunan, & Ketnim, 2021).

Orphans who are residing at sheltered homes in Malaysia need more attention. For example, in Malaysia, Mohammadzadeh et al. (2018) explored the emotional health, well-being and self-esteem of adolescents living in orphanages, but there is no

disaggregated data by type or quality care received as the context and background of each orphanage is not documented. Lacking these empirical data, it can risk the mitigation process of improving care for orphans in Malaysia (Yaacob et al., 2020).

Moreover, the number of adolescents including orphans living in sheltered homes is unclear because there are many unregistered institutions for underprivileged children and adolescents in Malaysia (Yaacob et al., 2020). Most sheltered homes are called as institutionalised care setting, residential homes or orphanages, and inhabitants in these homes consist of orphans and non-orphans of heterogeneous familial background (Cheng, 2016; Mohammadzadeh et al., 2018; Ram, 2015; Yaacob et al., 2020).

There are no official statistics for orphans and orphanages in Malaysia. Cheng (2016) had reported that there were nearly 410,000 orphans in Malaysia, and only 969 of them lived in 12 government sheltered homes nationwide. Furthermore, the adoption rate by foster families was generally low; there were only 1,144 applications for adoptions in 2017 (Ministry of Women, Family and Community Development, 2017). Cheng (2016) reported that orphans are not the only inhabitants of registered government-run and non-government-run sheltered homes in Malaysia, and among the reasons children and adolescents reside in sheltered homes are their single parents have financial constraint, their parents are remarried and have new family, imprisoned parents, parents' disabilities, neglect, and under legal protection against abuse and violence. Nonetheless, both government-run and non-government-run sheltered homes, and foster care are inadequate in Malaysia (Cheng, 2016; Ministry of Women Family and Community Development, 2017). The number of government-run sheltered homes is small. Sheltered homes are mainly run by non-governmental organisations, and some of them are not registered with the Department of Social Welfare Malaysia (Cheng, 2016; Yaacob et al., 2020). Sadly, children and adolescents residing in sheltered homes lacked educational resources and necessities (Wanat et al., 2010). Moreover, some sheltered homes do not follow physical safety and welfare standards (Sofian, Arffin, & Yasir, 2013). There was no specific allocation for orphans in the National Budget 2019 (cited in Yaacob et al., 2020). Well-being programmes for poor and neglected children had inadequately met a good standard for nutrition, housing and education in Malaysia, especially involving orphans (Yaacob et al., 2020). Giving the above-mentioned reasons, it was timely to conduct research on this population.

Although worldwide studies on the prevalence and associated factors on adolescents from residing in the sheltered homes are available, but past studies specifically measured variables such as depression, anxiety, negative automatic thoughts, self-esteem and anger are still scarce. Also, some studies were fairly outdated (Chisholm, 1998), and the research methodology employed was weak (Ibrahim, El-Bilsha, El-Gilany, & Khater, 2012). Instead, past studies targeted on measuring other disorders such as nocturnal enuresis, attention deficit hyperkinetic disorder, and oppositional defiant disorder (El Koumi et al., 2012), and other variables such as behavioural problems (Lassi, Mahmud, Syed, & Janjua, 2011; Şimşek, Erol, Öztıp, & Özcan, 2008) and quality of life (Yendork & Somhlaba, 2014). Other measured protective factors against emotional and behavioural problems in adolescents in the orphanages

that were studied including regular contact with parents or relatives, appropriate task involvement, perceived social support and competency and (Simsek, Erol, Öztop, & Münird, 2007).

Generally, most Malaysian studies depicted prevalence and associated factors of depression, anxiety, self-esteem, and anger in adolescents in normative population (Abdul Latiff et al., 2015; Amit, Ibrahim, Mohd Jaladin & Che Din, 2017; Ibrahim, Amit, & Wong, 2014; Ibrahim et al., 2017; Kaur et al., 2014). Specifically, high quality empirical studies on adolescents and orphans residing in sheltered homes in Malaysia are scarce (Yaacob et al., 2020). There are some studies related to the well-being of orphans in Malaysia, but the research methodologies are weak (Chong & Khodabakhsh, 2016; Zakaria & Mohd Jamil, 2008).

There are two local studies on children and adolescents in the sheltered homes in Kota Bahru, Kelantan; one reported the prevalence of depression in children and adolescents but the sampling was without randomisation and the questionnaire used was not validated (Ramli, Yahaya, Yahaya, & Mohd Lazin, 2014), and another study examined the factors associated with behavioural difficulties (Zakaria & Yaacob, 2008) instead of specifically measuring depression and anxiety. However, these negative impacts being orphans, and the studies on the association between orphanhood and psychological variables is still scarce in Malaysia. In a more recent study, Mohammadzadeh et al.'s (2018) reported the prevalence of depression and anxiety symptoms of adolescents residing at non-Malay operated and Malay-operated non-government-run sheltered homes. The global data showed that prevalence of anxiety appeared to be higher than the prevalence of depression (Institute for Public Health, 2018; Merikangas et al., 2010; Public Health England, 2016). However, in the study by Mohammadzadeh et al.'s (2018), the prevalence of depression was reported to be slightly higher than the prevalence of anxiety in adolescents residing at sheltered homes. Not only that, Mohammadzadeh et al. (2018) reported that parental status such as lost one parent, lost both parents, and not living with parents was not associated with depression and anxiety of adolescents residing at sheltered homes in Malaysia. Consequently, despite Mohammadzadeh et al.'s (2018) study, a more in-depth information yet to be established so that the overall emotional distress of adolescents particularly the orphans residing in the sheltered homes in Malaysia.

Although low self-esteem is not a psychiatric disorder, it is associated with school dropout, depression, chronic pain, psychosis, eating disorders, obsessive-compulsive disorder, substance abuse, self-harm, teenage pregnancy, suicidal behaviour, low income, and unemployment (Waite, Mcmanus, & Shafran, 2012, p. 1049). On the other hand, depressed adolescents were less capable in regulating and managing their anger in their social environment (Jackson, Kuppens, Sheeber, & Allen, 2011). Additionally, Fernandez and Johnson (2015) and Novaco (2010) have expressed that uncontrollable anger becomes pathological when it leads to aggression and violence. Besides, problems associated with inappropriate expression of anger in Malaysian adolescents such as an increase of juvenile cases and violence has become a public health concern (Fauzi, Zulkefli, & Baharom, 2020). Alarmingly, Nasir and Abd Ghani

(2013) reported almost all Malaysian secondary students in their study experienced anger. In term of gender difference, Ng and Khor (2018) reported that Malaysian secondary students with high personality trait anger showed relatively high state anger especially among boys. Alternatively, Ayub, Joseph Kimong and Megat Ahmad (2020) reported that anger was positively related to aggression in drug-dependent Malaysian adult males. Hence, implementing an effective anger management programme for adolescents is needed.

Research on CBT is advanced and evidenced-based that supports the CBT models. However, more high standard CBT research is still needed particularly on Malaysian adolescents in general, and orphans per se. Weisz et al. (2013) have emphasised that evidence-based psychotherapies for children and adolescents, such as CBT, outperformed usual care, and the efficacy of evidence-based psychotherapies are moderated by location and assessment characteristics. CBT was introduced at least five decades ago; however, very few RCT studies examining the effectiveness of CBT on the Malaysian adolescent population in general and orphaned adolescents per se are available. To date, only one RCT study on the effectiveness of STAR CBT programme for Malaysian adolescents with depression available (Saw et al., 2020). However, the selection of participants was limited to the state of Pahang, and the STAR programme was new and the research resource of this programme was lacking. So far, only a handful of RCT studies that examined the effectiveness of CBT on adults with depression in Malaysia exists (Liang et al., 2017; Mohd Zain, Naing, & Osman, 2007; Mukhtar, Oei, & Yaacob, 2011). Also, to the researcher's best knowledge, there is no study available about the effectiveness of CBT treating Malaysian adolescents with anxiety.

Although the effectiveness of CBT on negative automatic thoughts, anger, and low self-esteem has been investigated, research in this area is generally lesser than research on the effectiveness of CBT on depression and anxiety. Several studies reported the significance of CBT in reducing negative automatic thoughts in children and adolescents (Asarnow et al., 2002; Ishikawa et al., 2019; Kaufman, Rohde, Seeley, Clarke, & Stice, 2005). Of course, some of these aforesaid studies are outdated (Asarnow et al., 2002; Kaufman et al., 2005), and there were differences in baseline scores between conditions (Ishikawa et al., 2019). Also, several systematic reviews and meta-analysis studies on the use of CBT to treat anger in adolescents are available (Hofmann et al., 2012; Hoogsteder et al., 2015; Sukhodolsky et al., 2004), but only a handful research available on the use of CBT to enhance self-esteem in children and adolescents (Dobson et al., 2010; Taylor & Montgomery, 2007). Interestingly, in most CBT studies on children and adolescents, self-esteem and anger were the secondary targets of CBT even though anger management skills and self-esteem enhancement were included in the treatment modalities (Barrett, Sonderegger, & Xenos, 2003; Gallegos-Guajardo, Ruvalcaba-Romero, Langley, & Villegas-Guinea, 2015; Hofmann et al., 2012; Stallard et al., 2005; Tolin, 2010). Although CBT could effectively enhance low self-esteem (Taylor & Montgomery, 2007) and reduce anger (Hofmann et al., 2012; Sukhodolsky, Smith, McCauley, Ibrahim, & Piasecka, 2016) in clinical practice, more evidence-based research such as RCT comparing CBT with controls or other treatment modalities is yet to be established.

Likewise, there are limited RCT studies on the effectiveness of CBT in modifying negative automatic thoughts, enhancing self-esteem, and reducing anger among adolescents in Malaysia. In a RCT study, Saw et al. (2020) tested the effectiveness of STAR CBT programme on reducing negative automatic thoughts in Malaysian secondary school students, but such efficacy study for vulnerable orphans in the sheltered homes is not available. Another local RCT study also used the sample Malaysian secondary school students, where it compared three CBT groups with a control group to enhance the students' self-concept (Mohamed Arip, Yusoooff, Jusoh, Syed Salim, & Abd. Samad, 2011). The sample size for each group of CBT group was, however, small. Other less quality local studies included a quasi-experiment examining the effectiveness of CBT in increasing self-esteem among drug users (Hussin, Othman, Hussin, & Alias, 2014), and a CBT case study in reducing anger of a child orphan (Chong & Khodabakhsh, 2016), a non-RCT CBT study that aimed to reduce anger in secondary school students (Lee & Ahmad, 2017), and a non-RCT CBT study that aimed to reduce anger in male adult prisoners (Ayub, Nasir, Abdul Kadir, & Mohamad, 2015).

Overall, given the lack of RCT studies on the effectiveness of CBT on depression, anxiety, negative automatic thoughts, self-esteem, and anger, it was timely to conduct this study. This investigation used a high standard RCT research protocol to examine the effectiveness of group CBT on depression, anxiety, negative automatic thoughts, self-esteem, and anger in orphaned adolescents residing at sheltered homes.

Children with anxiety disorder often meet the diagnostic criteria more one disorder clinically (Rapee, 2018). SAHABAT programme is a 8-session group CBT programme (gCBT) for adolescents that aims to alleviate their depression and anxiety symptoms (Mukhtar, 2014). It has been used in several community projects involving different groups of adolescents in Malaysia but data was not published. This study intended to document the effectiveness of transdiagnostic SAHABAT programme for Malaysian orphaned adolescents. In this study, the effect of SAHABAT was tested on five dependent variables – depression, anxiety, negative automatic thoughts, self-esteem and anger.

1.3 Rationale of the Study

The underprivileged adolescents particularly orphans in institutionalised care settings are reported to have more emotional distress, externalising behaviour, peers problems and low self-esteem than the normative population (Cluver, Orkin, Gardner, & Boyes, 2012; Fawzy & Fouad, 2010; Puffer et al., 2012; Mohammadzadeh et al., 2018; Nalugya-Serunjogi et al., 2016; Prem Kumar, Anil Kumar, Ramgopal, Venkata Srinivas, & Dandona, 2016; Ruiz-Casares, Thombs, & Rousseau 2009; Ramagopal et al., 2016; Yendork & Somhlaba, 2015). In Malaysia, research on depression, anxiety, negative automatic thoughts, self-esteem and anger in adolescents, particularly orphans, in residing the sheltered homes is still scarce.

Orphans who do not have foster care are mostly sheltered in government-run and non-government-run sheltered homes together with poor and neglected children and adolescents. However, there are no reliable, comprehensive, and published statistics

for orphans and non-orphans residing in non-government-run sheltered homes in Malaysia.

The official statistics of non-government-run sheltered homes are not available too, but they can be accessible through reliable sources from the Registrar of Society and Social and Welfare Department of Malaysia. Non-government-run sheltered homes are divided by ethnicity and religious affiliation. For example, most inhabitants in Malay-operated non-government-run sheltered homes are Malays and all of them are Muslims. On the other hand, non-Malay-operated non-government-run sheltered homes included non-Malays such as Chinese, Indians, and other races who are all non-Muslims. Cognitive and linguistic competency as well as verbal reasoning of a child is required for CBT (Halder & Mahato, 2019). Non-Malay-operated non-government-run sheltered homes were also excluded in this study due to language barrier that might lead to treatment outcome biasness.

Government-run sheltered homes were excluded in this study because of the differences in governance and facilities between non-government-run and government-run sheltered homes, which might affect the outcomes of the study. Furthermore, the number of government-run sheltered homes that shelter orphans are small in Malaysia, which might not meet the requirement of sample size in this study. This study adhered the selection criteria for sheltered homes that strictly screened the sheltered homes before recruitment. In a way, it aimed to reduce cluster variances among the sheltered homes as much as possible.

CBT has been deduced more suitable for older children (Halder & Mahato, 2019). This study recruited adolescents of aged 13 to 17 years.

Intrapersonal variables such as depression, anxiety, negative automatic thoughts, and anger were the main focus in this study. Several inevitable reasons for not being able to consider other important contributing factors to emotional distress such as parental loss, adverse experiences, resilience, attachment, abuse/neglect, unstable living conditions, education, physical health needs, institutionalised care, and so forth are as follows: Firstly, the influences of adversity, resilience and attachment might not be able to measure precisely because of difficulty to access to heterogeneous and complex familial background of the participants at the sheltered homes. The children and adolescent inhabitants are sheltered due to multiple factors such as neglect/abuse, poverty/financial constraints, parents are divorced/ remarried, loss of single/both parents, ill-stricken/disabled parents, imprisoned parents, parents have to attend to work, parents want their children to study religion at sheltered homes, and so forth. Secondly, lack of assistance from medical team including doctors and nurses had hindered the ability of the researcher to collect data on physical health and a formal psychiatric evaluation of the participants. Thirdly, impacts of orphanhood was actually examined in this study. Instead of using the terminology of parental loss, this study examined emotional distress between orphans and non-orphans. Lastly, the education variable was actually part of this study in which the psychological variables of

participants from the sheltered homes who attended religious classes only (*tahfiz*) and public schools were compared.

The state of Selangor was chosen for this study because the prevalence of Malaysian adolescents' mental health by state showed that Selangor had the highest depression (22.6%) and second-highest anxiety (43.2%) levels (Institute for Public Health, 2018). Selangor is the most populous state in Malaysia. Out of the 6.47 million population in Selangor, 1.79 million (27.6%) are children under 18 years of age (Department of Statistics Malaysia, 2018). This state has almost an equal percentage of urban (56%) and rural (44%) locality (Institute for Public Health, 2015).

As mentioned earlier, CBT is the current gold standard of psychotherapy because it is extensively researched and other forms of psychotherapies have not been shown systematically better to CBT (David et al., 2018). Since research on CBT has begun five decades ago, the recent published research articles on the CBT in the conventional context often from developed countries. Moreover, the western developed approach may not be applicable in Asians because of language barriers and cultural differences. Rogers et al. (2021) reported that scarce literature that examined the historical context, purpose, or culture of the residential care settings in Southeast Asia including Malaysia as well the subjective socio-emotional well-beings of aspirations the children and adolescents in the institutionalised care setting.

Furthermore, systematic reviews indicated that there was no difference between individual, group or family format of CBT as these were efficacious during short-term and long-term treatment for childhood depression (Klein et al., 2007; Weisz et al., 2006; Zhou et al., 2015) and childhood anxiety (Davis et al., 2014; Ishikawa, Okajima, Matsuoka, & Sakano, 2007; Saavedra, Silverman, Morgan-Lopez, & Kurtines, 2010). In regard to gCBT approach, SAHABAT programme is a Malaysian CBT-based programme in Malay language that particularly targets on treating adolescents with depression and anxiety. SAHABAT programme is also suitable to test its effectiveness for other emotional distress from various socio-economic groups provided they understand Malay language. In this study, SAHABAT programme was suitable to test its effectiveness in treating depression, anxiety, negative automatic thoughts, self-esteem and anger in adolescents.

Worldwide studies showed that CBT programmes are effective to reduce emotional distress in children and adolescents from underprivileged socio-economic groups and in Asia. For instance, FRIENDS CBT programme had been successfully implemented for Irish children and adolescents from low socio-economic background (Rodgers & Dunsmuir, 2015), and the adaptability of the Spanish version of FRIENDS CBT programme was proven in Mexican children and adolescents from the orphanages (Gallegos-Guajardo et al., 2015). Also, the Japanese-adapted CBT programme that included both context and content cultural adaptations that had been proven useful in Japan (Ishikawa et al., 2019). Locally, the STAR CBT programme showed significant positive treatment outcomes in Malaysian adolescents (Saw et al., 2020).

Quantitative research design is more preferred over qualitative research in this study because it is more scientific, objective, fast, focused and acceptable. The cross-sectional prevalence study, the correlational study and the RCT study design in this study permit as much as possible accurate assessments of studied variables, and the cause and effect relationships between independent and dependent variables, respectively. These study designs were intended (a) to answer the research questions being investigated; (b) to minimize and control extraneous factors, and (c) to obtain valid generalizations as much as possible.

1.4 Significance of the Study

The findings of this study would contribute more information about the prevalence of depression, anxiety, negative automatic thoughts, self-esteem, and anger, and their associated factors, among adolescents residing at sheltered homes in the state of Selangor, Malaysia. Not only that, the findings in this study would also contribute to evidence-based RCT research literature of CBT in treating emotional distress of orphaned adolescents residing at sheltered homes in Selangor per se, and Malaysia in general.

In addition, since SAHABAT programme has not been tested empirically, this study would provide an empirical evidence for SAHABAT programme. Also, the transdiagnostic aspect of SAHABAT programme would be tested its effectiveness in reducing negative automatic thoughts and anger, as well as in increasing self-esteem. Overall, this study benefits, firstly, to the respondents in term of improvement in their psychological well-being. Secondly, to the researchers as it contributes to scarce literature and evidence-based research data about adolescents residing at sheltered homes, orphans and CBT in Malaysia. Thirdly, to the relevant authorities, organisations and agencies, and policymakers for improvement of the national policy for adolescents at residing sheltered homes in general and orphans per se in Malaysia.

1.5 Phase 1 The Studies of Prevalence and Associated Factors

1.5.1 Scope of the study

Firstly, the scope of this study was to investigate the prevalence of depression, anxiety, negative automatic thoughts, self-esteem, and anger for orphaned and non-orphaned adolescents residing in Malay-operated non-government-run sheltered homes in Selangor. Secondly, the scope of this study was to investigate the associated factors of depression, anxiety, negative automatic thoughts, self-esteem, and anger for orphaned and non-orphaned adolescents residing in Malay-operated non-government-run sheltered homes in Selangor.

1.5.2 Objectives of the study

1.5.2.1 General objectives

In Phase 1, firstly, the general objective of the study was to determine the prevalence of depression, anxiety, negative automatic thoughts, self-esteem, and anger of adolescents residing in Malay-operated non-government-run sheltered homes in Selangor, comprising orphaned and non-orphaned adolescents. Secondly, the general objective of the study was to determine the significant associated factors of depression, anxiety, negative automatic thoughts, self-esteem, and anger of orphaned and non-orphaned adolescents residing in Malay-operated non-government-run sheltered homes in Selangor.

1.5.2.2 Specific objectives

For the study of prevalence, the specific objectives were as follows:

1. To determine the sociodemographic characteristics of all the adolescents such as age, age group, gender, ethnicity, religious affiliation, type of education ((i.e., public school (non-*tahfiz*) and *tahfiz*)), type of orphan (i.e., orphans and non-orphans), and history of counselling attendance.
2. To determine the sociodemographic distribution of all the adolescents by home and district.
3. To determine the prevalence (i.e., the proportions) of depression, anxiety, negative automatic thoughts, self-esteem, and anger in all the adolescents.

For the study of associated factors, the specific objectives were as follows:

1. To compare the significant differences in depression, anxiety, negative automatic thoughts, self-esteem, and anger in all the adolescents by sociodemographic characteristics.
2. To compare the significant differences in sociodemographic characteristics, depression, anxiety, negative automatic thoughts, self-esteem, and anger between adolescents attending conventional education public schools (non-*tahfiz*) and adolescents attending only Islamic religious classes at their sheltered homes (*tahfiz*).
3. To compare the significant differences in sociodemographic characteristics, depression, anxiety, negative automatic thoughts, self-esteem, and anger between non-orphaned adolescents and orphaned adolescents.
4. To compare the significant differences in negative automatic thoughts of all the adolescents at varying severity of depression, anxiety, and anger.

5. To compare the significant differences in depression, anxiety, negative automatic thoughts, and anger between adolescents with low self-esteem and adolescents with high self-esteem.
6. To determine the factors that are significantly associated with depression such as sociodemographic characteristics, anxiety, negative automatic thoughts, self-esteem, and anger in all the adolescents.
7. To determine the factors that are significantly associated with anxiety such as sociodemographic characteristics, depression, negative automatic thoughts, self-esteem, and anger in all the adolescents.
8. To determine the factors that are significantly associated with negative automatic thoughts such as sociodemographic characteristics, depression, anxiety, self-esteem, and anger in all the adolescents.
9. To determine the factors that are significantly associated with self-esteem such as sociodemographic characteristics, depression, anxiety, negative automatic thoughts, and anger in all the adolescents.
10. To determine the factors that are significantly associated with anger such as sociodemographic characteristics, depression, anxiety, negative automatic thoughts, and self-esteem in all the adolescents.

1.5.3 Research hypotheses

1.5.3.1 Research hypothesis for the prevalence

The prevalence rates of depression, anxiety, negative automatic thoughts, low self-esteem and anger were more than 50% among Malay adolescents residing in the non-government-run sheltered homes in Selangor.

1.5.3.2 Research hypotheses for the associated factors

The research hypotheses for the study of associated factors were as follows:

1. Depression, anxiety, negative automatic thoughts, self-esteem, and anger of all the adolescents are not significantly different by sociodemographic characteristics.
2. Sociodemographic characteristics, depression, anxiety, negative automatic thoughts, self-esteem, and anger are not significantly different between adolescents attending conventional education at public schools (*non-tahfiz*) and adolescents attending only Islamic religious classes at their sheltered homes (*tahfiz*).
3. Sociodemographic characteristics are not significantly different between non-orphaned adolescents and orphaned adolescents.
4. Orphaned adolescents have significantly higher depression, anxiety, negative automatic thoughts, self-esteem, and anger than non-orphaned adolescents.

5. As depression, anxiety, and anger increase, negative automatic thoughts significantly increase among the adolescents
6. Depression, anxiety, negative automatic thoughts, and anger are significantly higher among adolescents with low self-esteem than adolescents with high self-esteem.
7. Sociodemographic characteristics are not significantly associated with depression, anxiety, negative automatic thoughts, self-esteem and anger in all the adolescents.
8. Anxiety, negative automatic thoughts, self-esteem, and anger are significantly associated with depression in all the adolescents.
9. Depression, negative automatic thoughts, self-esteem, and anger are significantly associated with anxiety in all the adolescents.
10. Depression, anxiety, self-esteem, and anger are significantly associated with negative automatic thoughts in all the adolescents.
11. Depression, anxiety, negative automatic thoughts, and anger are significantly associated with self-esteem in all the adolescents.
12. Depression, anxiety, negative automatic thoughts, and self-esteem are significantly associated with anger in all the adolescents.

1.6 Phase 2 The RCT Study of the Effectiveness of SAHABAT

1.6.1 Scope of the study

The scope of this RCT study was to determine the effectiveness of the SAHABAT programme on orphaned adolescents with depression and/or anxiety residing in Malay-operated non-government-run sheltered homes in Selangor.

1.6.2 Objectives of the study

1.6.2.1 General objectives

In Phase 2, the general objective of the RCT study was to determine the effectiveness of the SAHABAT programme on depression, anxiety, negative automatic thoughts, self-esteem, and anger of orphaned adolescents residing in Malay-operated non-government-run sheltered homes in Selangor.

1.6.2.2 Specific objectives

For the RCT study that examined the effectiveness of the SAHABAT programme, the specific objectives were as follows:

1. To determine the distribution of the orphaned adolescents by home, district, and intervention group.
2. To compare the significant differences of sociodemographic characteristics of the orphaned adolescents such as age, age group, gender, type of orphan (i.e., single orphan and double orphan), and history of counselling attendance between SAHABAT group and waitlist control group at pre-intervention (T1).
3. To compare the significant differences in depression, anxiety, negative automatic thoughts, self-esteem, and anger of the orphaned adolescents between SAHABAT group and waitlist control group at pre-intervention (T1).
4. To compare the effectiveness of the SAHABAT programme and waitlist control on depression, anxiety, negative automatic thoughts, self-esteem and anger of the orphaned adolescents across six time-points of measurement at pre-intervention (T1), mid-intervention (T2), immediate post-intervention (T3), 1-month post-intervention (T4), 3-month post-intervention (T5), and 6-month post-intervention (T6), after controlling for covariates.

1.6.3 Research hypotheses for the RCT

The research hypotheses for the effectiveness of SAHABAT programme in the RCT study were as follows:

1. Sociodemographic characteristics of the orphaned adolescents such as age group, type of orphan (i.e., single orphan and double orphan), and history of counselling attendance are not significantly different between SAHABAT group and waitlist control group at T1.
2. Depression, anxiety, negative automatic thoughts, self-esteem, and anger are not significantly different between SAHABAT group and waitlist control group in orphaned adolescents at T1.
3. SAHABAT programme is significantly more effective than waitlist control in reducing depression, anxiety, negative automatic thoughts and anger, and increasing self-esteem, of the orphaned adolescents across six time-points of measurement at pre-intervention (T1), mid-intervention (T2), immediate post-intervention (T3), 1-month post-intervention (T4), 3-month post-intervention (T5), and 6-month post-intervention (T6) after controlling the variates.

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