EFFECTS OF COGNITIVE BEHAVIOUR THERAPY AND ACCEPTANCE AND COMMITMENT THERAPY ON DEPRESSION, ANXIETY, AND QUALITY OF LIFE AMONG EMERGING ADULTS IN SELANGOR, MALAYSIA

By

AKMARINA BINTI AHMAD OTHMAN

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

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DEDICATIONS

This thesis is dedicated to my daughters, Ammara Aishah and Ameera Aufa who have been my source of inspiration, my husband Anhar who never left my side and my motivator, and my mother Hasnah for believing in me.

Also my deepest appreciation goes to other family members and friends who have supported me throughout the journey.

I am also deeply grateful to my supervisory committee for the guidance, pearls of wisdom, and the assistance during the course of my PhD degree.

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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Adults between 18 and 29 years old experience more mental health problems, such as depression (a major local and global public health issue) compared to other age populations. Despite the safety and efficacy of cognitive behaviour therapy (CBT), comparisons between CBT and the newer acceptance and commitment therapy (ACT) among emerging adults in Malaysia remain scarce. Most local and global works generally emphasised university or college students rather than emerging adults in general, hence creating a population gap in current literature. Consequently, this study compared the CBT and ACT effects on emerging adults' depression and anxiety symptoms and quality of life.

This study utilised an experimental design with a pre-test, post-test, and three-month follow-up. Specifically, 102 emerging adults between 18 and 29 years old who fulfilled the inclusion criteria were recruited from two study locations in Selangor, Malaysia and randomly stratified into two experimental groups (CBT and ACT) and one control group. The experimental groups underwent CBT or ACT, whereas the control group received psychoeducation. As the data collection tools employed in this study, Beck Depression Inventory-II (BDI-II), Beck Anxiety Inventory (BAI), and The World Health Organization Quality of Life: Brief Version (WHOQL-BREF) were completed thrice by the participants.

Notably, 81 participants completed the study until the follow-up stage. The elicited data were analysed using one-way ANOVA, Kruskal-Wallis test,

paired sample t-test, and Wilcoxon signed rank test. A statistically significant difference was identified in depression symptoms post-test among the three groups (p = 0.012). The post-hoc test demonstrated a significant difference between ACT and control group (p = 0.009), albeit with no significant difference between (i) CBT and control group (p = 0.427) and (ii) CBT and ACT (p = 0.389). Meanwhile, a significant difference was identified in depression scores in the follow-up stage between (i) CBT and control group (p = .033) and (ii) ACT and control group (p = .000). No statistically significant difference was highlighted between CBT and ACT (p = .218) during follow-up. Additionally, this study demonstrated no significant difference among the three groups in anxiety symptoms, total quality of life, and the four associated domains (physical, psychological, social relationship, and environment) at post-test and follow-up.

The CBT demonstrated a significant difference in depression, anxiety, total quality of life, and its four domains post-test, thus implying significant improvement post-intervention. Regardless, the absence of a significant difference during follow-up indicated score maintenance. The ACT, which denoted a significant difference in anxiety scores and both physical and psychological domains at post-test and follow-up, implied a significant improvement post-treatment and during the follow-up. In terms of depression, total quality of life, social relationship, and environment domain, the ACT showed a significant difference post-test, albeit with no significant difference during the follow-up.

The aforementioned outcomes imply the ACT is effective in reducing depression symptoms compared to the control group. Despite being non-significant, the CBT demonstrated a higher reduction in depression scores post-test compared to the control group. The CBT continues to reflect improvement in depression at follow-up compared to the control. Both CBT and ACT denoted a similar effectiveness post-test with regards to anxiety and quality of life. Notwithstanding, ACT proved more effective to lower anxiety and to increase physical, and psychological health at follow-up compared to CBT.

The current study findings complemented both CBT and ACT effectiveness in terms of reducing depression and anxiety symptoms and improving the quality of life among emerging adults in Malaysia. Furthermore, the ACT appeared more effective in depression, anxiety, and physical and psychological domains compared to CBT. These results would benefit emerging adults between 18 and 29 years old and counsellors or mental health professionals who frequently manage emerging adults with depression and aspects involving quality of life. Future works should test a longer period of follow-up and perform similar studies at different locations as emerging adulthood (EA) is culture-specific.

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

KESAN TERAPI TINGKAH LAKU KOGNITIF DAN TERAPI PENERIMAAN DAN KOMITMEN TERHADAP KEMURUNGAN, KEBIMBANGAN, DAN KUALITI HIDUP DALAM KALANGAN PERALIHAN DEWASA DI SELANGOR, MALAYSIA.

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Golongan dewasa berumur 18 hingga 29 tahun mengalami lebih banyak masalah kesihatan mental seperti kemurungan (isu kesihatan awam tempatan dan global utama) berbanding kumpulan umur yang lain. Walaupun keselamatan dan keberkesanan terapi tingkah laku kognitif (CBT) sudah terbukti, perbandingan antara CBT dan terapi yang lebih baharu iaitu terapi penerimaan dan komitmen (ACT) dalam kalangan peralihan dewasa di Malaysia masih lagi terhad. Kebanyakan kajian tempatan dan global memfokuskan kepada pelajar universiti atau kolej berbanding golongan peralihan dewasa secara keseluruhan, di mana ia mewujudkan jurang populasi dalam kesusasteraan semasa. Oleh itu, kajian ini membuat perbandingan kesan-kesan CBT dan ACT terhadap gejala kemurungan dan kebimbangan serta kualiti hidup dalam kalangan peralihan dewasa.

Kajian ini menggunakan reka bentuk eksperimen iaitu ujian pra, ujian pasca, dan susulan selepas tiga bulan. Secara khususnya, seramai 102 orang peralihan dewasa berumur 18 sehingga 29 tahun yang memenuhi kriteria kemasukan telah dipilih dari dua lokasi kajian di Selangor, Malaysia, dan dibahagikan secara rawak berstrata kepada dua kumpulan eksperimen (CBT dan ACT) dan satu kumpulan kawalan. Kumpulan eksperimen menjalani CBT atau ACT, manakala kumpulan kawalan menjalani sesi psikopendidikan. Bagi alat pengumpulan data kajian, *Beck Depression Inventory–II (BDI-II), Beck Anxiety Inventory (BAI),* dan *The World Health Organization Quality of Life: Brief Version (WHOQL-BREF)* telah dilengkapkan sebanyak tiga kali oleh para peserta kajian.

Seramai 81 peserta berjaya menyelesaikan kajian ini sehingga peringkat susulan. Data telah dianalisis menggunakan ANOVA sehala, ujian Kruskal-Wallis, ujian-t sampel berpasangan, dan ujian pangkat bertanda Wilcoxon. Perbezaan yang signifikan secara statistik telah dikenal pasti dalam ujian pasca gejala kemurungan dalam ketiga-tiga kumpulan (p – 0.012). Ujian post-hoc menunjukkan perbezaan yang signifikan antara ACT dan kumpulan kawalan (p = 0.009), namun tiada perbezaan signifikan antara (i) CBT dan kumpulan kawalan (p = 0.427) dan (ii) CBT dan ACT (p = 0.389). Sementara itu, perbezaan signifikan dapat dilihat pada markah kemurungan dalam peringkat susulan antara (i) CBT dan kumpulan kawalan (p = 0.033) dan (ii) ACT dan kumpulan kawalan (p = 0.000). Tiada perbezaan yang signifikan secara statistik dapat dilihat antara CBT dan ACT (p = 0.218) semasa peringkat susulan. Di samping itu, kajian ini mendapati tiada perbezaan yang signifikan antara tiga kumpulan dalam aspek gejala kebimbangan, keseluruhan kualiti hidup, dan empat domain berkaitan (fizikal, psikologi, hubungan sosial, dan persekitaran) dalam ujian pasca dan susulan.

CBT menunjukkan perbezaan yang signifikan dalam aspek kemurungan, kebimbangan, keseluruhan kualiti hidup, dan empat domain ujian pasca. Oleh itu, ia menggambarkan penambahbaikan yang signifikan selepas intervensi. Walau bagaiamanapun, ketiadaan perbezaan yang signifikan semasa peringkat susulan menunjukkan pengekalan markah. ACT yang menunjukkan perbezaan signifikan pada markah kebimbangan dan kedua-dua domain fizikal dan psikologi dalam ujian pasca dan susulan menggambarkan peningkatan selepas rawatan dan peringkat susulan yang signifikan. Dari segi gejala kemurungan, keseluruhan kualiti hidup, domain hubungan sosial, dan domain persekitaran, ACT menunjukkan perbezaan yang signifikan dalam ujian pasca, walaupun tiada perbezaan yang signifikan semasa peringkat susulan.

Keputusan yang dinyatakan menunjukkan keberkesanan ACT dalam mengurangkan gejala kemurungan berbanding kumpulan kawalan. Sungguhpun didapati tidak signifikan, CBT menunjukkan pengurangan markah kemurungan yang lebih tinggi semasa ujian pasca berbanding kumpulan kawalan. CBT terus menunjukkan penambahbaikan dalam kemurungan pada peringkat susulan berbanding kumpulan kawalan. Kedua-dua CBT dan ACT menunjukkan keberkesanan ujian pasca yang sama menerusi aspek kebimbangan dan kualiti hidup. Namun begitu, ACT terbukti lebih berkesan untuk mengurangkan kebimbangan dan meningkatkan kesihatan fizikal dan psikologi pada peringkat susulan berbanding CBT.

Kajian ini menunjukkan kedua-dua CBT dan ACT berkesan dalam mengurangkan gejala kemurungan dan kebimbangan serta peningkatan kualiti hidup dalam kalangan peralihan dewasa di Malaysia. Tambahan pula, ACT dilhat lebih berkesan dalam aspek kemurungan, kebimbangan, domain fizikal dan psikologi berbanding CBT. Penemuan kajian ini akan memberi

manfaat kepada peralihan dewasa berusia antara 18 dan 29 tahun, serta kaunselor atau pakar kesihatan mental yang sering mengendalikan golongan ini yang mengalami kemurungan, serta implikasi terhadap kualiti hidup. Kajian pada masa hadapan diperlukan untuk menguji tempoh susulan yang lebih lama dan menjalankan kajian di lokasi yang berbeza, memandangkan golongan peralihan dewasa bersifat khusus kepada budaya.

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LIST OF ABBREVIATIONS

CBT	Cognitive Behaviour Therapy
ACT	Acceptance and Commitment Therapy
EA	Emerging Adulthood
BDI-II	Beck Depression Inventory – II
BAI	Beck Anxiety Inventory
WHOQOL-BREF	The World Health Organization Quality of Life: Brief Version
MDD	Major Depressive Disorder
RFT	Relational Frame Theory
WHO	World Health Organization
UPM	Universiti Putra Malaysia
MIASA	Mental Illness Awareness and Support Association

CHAPTER 1

INTRODUCTION

1.1 Research Background

Depression is a mental disorder that has impacted over 280 million people worldwide (World Health Organization, 2021). The number of adults with mental health issues in Malaysia has increased from 10.7% in 1996 to 29.2% in 2015 (Institute for Public Health, 2015). Reportedly, females, younger adults, other Bumiputras, and adults from low-income families are highly susceptible to mental health problems. The rising number of depressed young adults has garnered much scholarly interest as this issue could induce poor functioning at work and home (World Health Organization, 2021), chronic health ailments, and low productivity and living standards (Gibb et al., 2010; Gili et al., 2018). Additionally, depression adversely impacts the national economy following the high usage of healthcare resources: comorbidity, workplace, and suicide-related costs (Greenberg et al., 2021). This rising trend necessitates prevention, early screening, and awareness of depression for timely and appropriate treatments.

Depression is clinically diagnosed provided the patient fulfils the criteria listed in the Diagnostic and Statistical Manual of Mental Disorders 5th Edition (DSM-V) or International Classification of Diseases 11th Revision (ICD-11). Based on the American Psychiatric Association (2013), major depressive disorder (MDD) is characterised by five or more of the nine following symptoms: depressed mood, lack of interest, significant weight loss or gain, insomnia or hypersomnia, psychomotor agitation, fatigue, sense of worthlessness, poor focus, and recurrent thoughts of death or suicide. An individual is diagnosed when these symptoms (with one of them either being a depressed mood or lack of interest) persist for at least two weeks. Despite the reportedly high prevalence of depression, Ng (2014) indicated the existence of undiagnosed cases in Malaysia. Some individuals refuse to be treated for multiple reasons, such as low awareness, cultural stigmatization, and reluctance to seek alternative treatment (Ng, 2014). Globally, the World Health Organization (2021) highlighted that only a few individuals with depression receive effective treatments following the barriers to effective care: insufficient resources, inexperienced healthcare professionals, and social stigma. Young adults' mental health accounts for 16% of the diseases and injuries in the world (World Health Organization, 2021). Locally, the prevalence of mental health problems among adults above 16 years old reflected 29.2%. A survey by the Institute for Public Health (2015) depicted the rising pattern of adults' mental health problems from 10.7% in 1996 to 29.2% in 2015. Specifically, 20,940 out of the 29,460 respondents were 16 years and above, with the majority aged from 20 to 24 years old. The survey

outcome implied that younger adults between 16 to 29 years old experienced more mental health problems compared to other age populations. The current study referred to the depression symptoms in the DSM-V. Only individuals with elevated depression symptoms (BDI-II scored 14 and above), excluding those already diagnosed with MDD, were included in the study.

Several cross-sectional studies were performed in Malaysia to determine the prevalence and associated factors of mental health problems among university students, the majority of whom represent young adults (Amir Hamzah et al., 2019; Latiff et al., 2014; Mohammed et al., 2016; Shamsuddin et al., 2013). Most young adults suffer from mental health issues given their hesitance to seek assistance compared to older age groups (Merikangas et al., 2009). Other barriers involve stigma, treatment costs, low awareness of mental health issues, and negative attitudes towards seeking professional help (Coles et al., 2016; Collins et al., 2004). Research on Malaysian young adults primarily emphasised university students following their transition from secondary to tertiary education, which could be new, unfamiliar, strenuous, and emotionally taxing (Kulig & Persky, 2017).

This study focused on young adults, who are specifically termed as emerging adults. Arnett's (2000) new theory of development elaborated on a young adult's development between 18 and 29 years old, with an emphasis on those from 18 to 25. Despite this distinction, Arnett (2000) occasionally placed emerging adulthood between the 18-29 range, with the end of it varying based on the secondary school completion age or bigger life commitments: marriage, parenthood, and long-term employment. Thus, the aforementioned age range applies to emerging adulthood, specifically in countries where one only attains adulthood at the age of 30 (Arnett, 2014).

Arnett (2014) defined emerging adulthood (EA) based on its demographic outline. For example, individuals in this age group undergo longer and broader education, commit to marriage and parenthood much later, and experience changeable and inconsistent employment. Such variations distinguish emerging adulthood from adolescence and young adulthood. Regardless, EA can be culture-specific with no universal applicability (similar to adolescence) as not all adults could use their living years to explore independently (Arnett, 2000).

The youths in Malaysia and most countries are legally recognised as adults at the age of 18. These individuals encounter novel challenges and explore various possibilities in love, work, education, or worldviews during this period, such as being employed in their first full-time job, pursuing tertiary education, and committing to relationships (Erikson, 1968). Modern young adults with more opportunities are expected to pursue their tertiary education compared to past generations (Kok, 2015). The number of Malaysians with tertiary

education has increased from 212,304 in 2007 to 306,808 in 2017, which approximates a 44% increment (Ministry of Higher Education, 2018). This statistic parallels Arnett's definition of EA as individuals with a broader education background and opportunities to explore various avenues between secondary school completion and marriage or long-term relationship.

Marriage is one of the changes encountered by most young people when embarking on a new stage of life. Following the Department of Statistics Malaysia (2011), the mean age of (first) marriage among females increased from 25.1 years in 2000 to 25.7 in 2010, while those of males decreased from 28.6 in 2000 to 28.0 in 2010. In this vein, the highest number of marriages in 2017 and 2020 belonged to the 25-29 age group (Department of Statistics Malaysia, 2021; Department of Statistics Malaysia, 2018). The same study also summarised the perception of marriage as a new stage of life in the Malay culture. Nevertheless, many individuals remained single due to financial issues, career prospects, and difficulties in finding suitable partners (Mahmud et al., 2016). As the highest number of marriages occurred between the age of 25 and 29, the 18-29 age range proposed by Arnett (2014) is deemed suitable to define age in EA in this study. Five features distinguish emerging adults from other life stages: identity explorations, instability, self-focus, feeling in-between, and possibilities (Arnett, 2014). Instability and self-focus could render these adults vulnerable to developing negative emotions, such as depression and anxiety symptoms (Arnett et al., 2014) as presented in Chapter 2.

Counselling is a profession that involves client welfare and development that facilitates people with low work and social functioning. As stated in the Malaysian Counsellor Act 1998 – Act 580, a counsellor denotes an individual who offers counselling services in return for a fee or other payment methods. A qualified counsellor is registered under Section 26 or 27 in accordance with the Act. Notably, counsellors would only manage clients that are cooperative and communicative without severe mental and cognitive problems, such as psychotic or delirium patients (Utusan Borneo, 2019). Thus, people with depression symptoms sans psychotic symptoms or delirium could be managed by counsellors, who are expected to be relatively knowledgeable on DSM-V. In this vein, counsellors would know the appropriate circumstances to refer clients to psychiatrists for further treatment when meeting those never diagnosed with depression disorders or other mental ailments.

Psychotherapy or talk therapy enables individuals to gain emotional relief, identify solutions to personal issues, and modify their behaviours and thought processes for optimal functioning (American Psychological Association, n.d.). The multiple psychotherapy approaches involve psychoanalysis and psychodynamic therapies, behaviour therapy, cognitive therapy, humanistic

therapy, and integrative or holistic therapy (American Psychological Association, 2009). Psychotherapy could be performed by different mental health professionals, such as licensed counsellors, psychiatrists, psychologists, and other counterparts with specialised psychotherapy training.

The Malaysian Clinical Practice Guideline (CPG) for the Management of MDD (Clinical Practice Guideline, 2019) recommends both psychotherapy (CBT) and pharmacotherapy for mild to moderate MDD. Both CBT and cognitive therapy (CT) are often used interchangeably (Driessen & Hollon, 2010; Lorenzo-Luaces et al., 2016). Following Driessen and Hollon (2010), both interventions are inextricably linked despite specific interventions that differ between the CBT and CT components. Lorenzo-Luaces et al. (2016) further emphasised CT as an intervention within the broader family of CBTs, which is 'purely' cognitive in nature. Hence, the term CBT is used for this study. As a systematic process to assist the counsellor-client relationship following psychological principles, counselling is practised in compliance with counselling ethical codes to attain changes, progress, and adaptation that are holistic, good, and volunteered by the client for all aspect continuance throughout the client's life (Counsellors Act 1998 – Act 580). Counsellors may use CBT and ACT as the psychotherapy of choice under psychological principles for assistance during counselling sessions.

The CBT effectively treats different mental disorders (Butler et al., 2006; Lovato et al., 2014). As a well-established and popular therapy for depression and anxiety developed by Aaron T. Beck in the 1960s, CBT implies a structured, active, and directive treatment used to treat various mental health disorders, such as depression, anxiety, and phobias (Beck et al., 1979). Likewise, Björgvinsson et al. (2014) disclosed the significance of CBT in mitigating depression symptoms and improving personal well-being and interpersonal relationships. The National Institute for Health and Care Excellence (2022) guideline also reported CBT to have the largest evidence-based body of literature in depression treatments with 46 studies. Depressed people who underwent CBT were less likely to relapse compared to counterparts treated with antidepressants alone (National Institute for Health and Clinical Excellence, 2022). Regarding young adults' depression and anxiety, CBT proved to be effective in several studies (Araki et al., 2019; Dear et al., 2018; Dickson & Gullo, 2015; Ezegbe et al., 2019; Farabaugh et al., 2018; Konradt et al., 2018; Saigo et al., 2018; Staples et al., 2019) and led to significant improvements in one's quality of life (Oei & McAlinden, 2014) based on mental and physical health functioning, social relationships, and engagement in daily activities (Kolovos et al., 2016). Young adults must maintain good mental health since poor psychological health may lead to suicidal behaviour (Kay et al., 2009) and poor academic achievement (Puskar & Bernardo, 2007).

The ACT, a psychotherapy intervention following the relational frame theory (RFT), constitutes part of the so-called 'third wave' of behavioural therapies (Hayes et al., 2001). Rather than emphasising symptom reduction (e.g., anxiety and negative thoughts), ACT encourages participants to perform value-based actions regardless of whether they are experiencing symptoms or otherwise (Harris, 2019). Hence, ACT enables people to achieve an enriched and meaningful life while efficiently managing the associated pain. ACT has shown to be effective in treating different types of disorder (Far et al., 2017; Khoramnia et al., 2019; Vakili et al., 2014; van Aubel et al., 2020). Notably, ACT works with depressed individuals to encourage their psychological flexibility rather than eliminating depression (Hayes et al., 2004). Self-as context, defusion, acceptance, contact with the present moment, values, and committed action are the six core therapeutic processes or known as hexaflex that contribute to psychological flexibility: the ability to "be present, open up, and do what matters."

Techniques in different therapies could be used interchangeably. Regardless, the objectives of the techniques in CBT and ACT differ significantly. For example, the mindfulness exercise taught in CBT emphasises on symptom reduction, which is the primary aim of CBT. Meanwhile, mindfulness in ACT is a way to reflect on the thoughts without eliminating them (Harris, 2019). Another example is the behavioural activation commonly performed in CBT to energise people with depression (Beck, 2011) and reduce their symptoms. In ACT, behavioural goal establishment is among the first technique taught in session despite not being known as behavioural activation (Harris, 2019). Participants are facilitated to validate their behavioural goals and taught to act and behave according to their aims and values. The individuals are constantly reminded of the ACT techniques for value-added living through mindfulness skills to effectively manage difficult thoughts and emotions (Harris, 2019; Lewin, 2022).

Past literature has compared ACT with CBT (A-Tjak et al., 2018; Forman et al., 2007; Pleger et al., 2018; Samaan et al., 2021). Regardless, these researches focused on inpatients' psychiatric wards (Pleger et al., 2018; Samaan et al., 2021) and outpatients diagnosed with MDD (Tamannaeifar et al., 2014) rather than those with sub-clinical depression. Brown et al. (2011), Forman et al. (2007), and Forman et al. (2012) were generally interested in university students rather than emerging adults (students or non-students). As such, it is deemed important to study the effects of different therapies across age groups. Cuijpers et al. (2020) disclosed that effect sizes vary in people of different ages, with young adults between 18 and 24 years old demonstrating the highest effect size compared to children, adolescents, or other adult categories. Hence, the therapy outcomes differ when performed in a different age population. This study proves noteworthy in its aim to observe any difference between the two treatments type on emerging adults with depressive symptoms.

1.2 Problem Statement

Depression, which is clinically known as MDD, is characterised by depressed mood, loss of interest, and other criteria that necessitate an individual to be clinically diagnosed. People with MDD may experience internal suffering that subsequently induces poor work and home functioning (World Health Organization, 2021). In Malaysia, MDD is listed as one of the top 10 illnesses that increases Disability-adjusted Life Years (DALYs) in 2019 (Institute for Health Metrics and Evaluation, 2018) (see Figure 1.1). Depression-oriented treatments also incur substantial costs. Specifically, the annual economic burden of MDD in the USA increased from $236.6 billion in 2010 to $326.2 billion in 2018. A significant amount was spent on indirect MDD-related costs involving work and suicide and direct and indirect comorbidity expenses (Greenberg et al., 2021). Overall, depression significantly depletes healthcare resources and undermines work productivity (Brody et al., 2018; Egede et al., 2016; Greenberg et al., 2021).

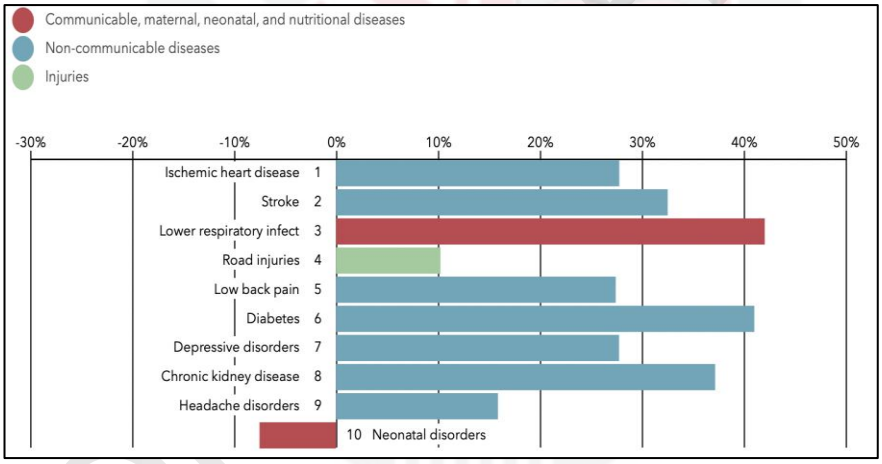

Figure 1.1 : Top 10 Causes of Death and Disability (DALYs) in 2019 and Percent Change 2009–2019, All Ages Combined

Psychological intervention is locally used apart from pharmacological treatments to manage depression (Clinical Practice Guideline, 2019). Regardless, the increasing number of people with depression from 10.7% in 1996 to 29.2% in 2015 (Institute for Public Health, 2015) has caused much concern about depression-oriented implications in Malaysia. The survey also revealed that females and younger adults are more vulnerable to mental health risks. Psychological problems are commonly higher among adolescents from 16 to 19 years old (34.7%), followed by those from 20 to 24 (32.1%), and 25 to 29 (30.5%). This young adult population is considered

emerging adults as the latter includes those between 18 and 29 years old (Arnett, 2014). The EA is the most volatile life stage compared to other phases (Arnett, 2000) following fluctuations in love and relationships, which leads to instability. This instability inevitably instigates pervasive emotions, such as depression and anxiety (Arnett et al., 2014). In Gustavson et al. (2018), major depression and anxiety disorders are highly prevalent among young adults from 18 to 29 years old. This prevalence subsides in their 30s and 40s. Furthermore, an individual's risk of developing another mental condition a decade later is increased if they were already diagnosed in their 20s. Such occurrences could impact emerging adults' capacity to pursue education, establish a family, and become employed.

Despite much research on emerging adults' mental health issues, most of the studies emphasised young adults in university compared to those who are not in one. Reportedly, depression, anxiety, and stress are the most common mental health issues among university students (Merikangas et al., 2009; Mustaffa et al., 2014; Nigatu et al., 2016). Cuijpers et al. (2016) concurred with this report as university and college students are highly vulnerable to developing mental health problems. Such students, who fall in the age range when common mental health problems are at a developmental peak, frequently encounter high stress levels. Timely and appropriate interventions prove necessary given the high susceptibility of emerging adults to develop mental health problems. The current work emphasised individuals who suffer from depression and anxiety symptoms, with no previous diagnosis of mental illness for early intervention before regression into mental disorders.

Depression and anxiety in Malaysia have increased from 2013 to 2019. Empirical works have examined the prevalence of depression and anxiety among university students. Parallel to Amir Hamzah et al. (2019), 21% of undergraduate students experienced moderate to severe depression, 50% suffered from anxiety, and 12% were stressed. Other local studies similarly found a high prevalence rate of these psychological symptoms among university students (Balami et al., 2014; Latiff et al., 2014; Mohammed et al., 2016; Shamsuddin et al., 2013).

Research involving the psychological intervention efficacy on Malaysian emerging adults' depression and anxiety symptoms remains lacking. To date, most randomised controlled trials were conducted to observe the CBT effectiveness on university students' and young adults' psychological symptoms, such as in the United Kingdom (Dickson & Gullo, 2015), Nigeria (Ezegbe et al., 2019), the United States of America (Farabaugh et al., 2018; Lattie et al., 2019), Japan (Araki et al., 2019; Saigo et al., 2018), Australia (Dear et al., 2018; Staples et al., 2019), and Brazil (Konradt et al., 2018). Following past works, a population gap exists in examining psychological intervention towards EA, specifically in Malaysia. It is deemed vital to

investigate this group as features entailing instability and self-focus render them susceptible to depression and anxiety (Arnett et al., 2014; Kulig & Persky, 2017; Pettit et al., 2011). Moreover, their high identity exploration and negativity levels also render them vulnerable to psychological stress (Baggio et al., 2017).

Past empirical works primarily emphasised college and university students as the study sample. Local and global emerging adults would pursue tertiary education from the age of 18. Despite being intentional, such a focus creates a population gap in current literature. Emerging adults encompass a crucial age population in the Malaysian political context, where those who are 18 years old can legally vote (Laws of Malaysia, 2014). Most other countries similarly declare the age of 18 as the minimum voting age (Batchgeo, n.d.). This age is also the start of transitioning to tertiary education settings and it is the legal marriage age for Malaysian men (Nik Wajis et al., 2020). Given the significant life events occurring at this age, and the subsequent rise of depression in this age group (Institute for Public Health, 2015), further examination on treating emerging adults with depression symptoms in general settings is necessary. It is critical to broaden the sampling frame beyond college or university students as some of the emerging adults between 18 and 29 years old may have already found employment or forgone attending university (Abdul Kadir & Mohd, 2021). Emerging adults in university settings may have access to various mental health services (Eisernberg et al., 2012), but such facilities may not be available to those belonging to the general community. Hence, this study emphasised emerging adults in general settings.

The current study also focused on the effects of CBT on quality of life apart from its impacts on emerging adults' depression and anxiety symptoms. The WHOQOL Group (1995) defines the quality of life as a multidimensional construct containing physical, psychological and social health dimensions. It also comprises of life domains, such as social relationship, physical and mental functioning, and engagement in daily activities (Papakostas et al., 2004). Empirically, the emergence of depression and anxiety symptoms in early adulthood is associated with chronic health ailments, low productivity, and poor living standards in the future (Gibb et al., 2010; Gili et al., 2018). This subsequently impacts people's quality of life as psychological distress could lower their physical and mental health. Regardless, the absence or decrease in depression symptoms does not necessarily imply improved quality of life or vice versa, since quality of life and depression symptoms are two distinct constructs (Kolovos et al., 2016). Following Craigie and Nathan (2009), the improvement in depression and anxiety symptoms was significantly higher for individual CBT compared to group CBT. Nevertheless, this difference was not observed in quality of life. Perceivably, quality of life is independent of symptom alleviation. Kamenov et al. (2017) and Kolovos et al. (2016) highlighted the paucity of studies on depression symptoms in association with quality of life. As a growing and evolving psychotherapy,

CBT may have room for further improvement as few patients are unable to benefit from it or even relapse (David et al., 2018).

The ACT effectively treats various behaviour problems and it is equal to CBT in reducing depression symptoms (Forman et al., 2007; Tamannaeifar et al., 2014). Several studies documented the finding between CBT and ACT involving adults aged 18 years old and above. Resultantly, the participants in both groups reflected significant reductions in depression symptoms and improved quality of life (A-Tjak et al., 2020; A-Tjak et al., 2018). This improvement was sustained over a one-year follow-up (A-Tjak et al., 2021). Past comparative studies between CBT and ACT among adults aged 18 years old and above demonstrated the equal effectiveness of both treatments in reducing depression symptoms (Arch et al., 2012; Far et al., 2017; Losada et al., 2015; Pleger et al., 2018; Samaan et al., 2021; Wetherell et al., 2011). Nevertheless, A-Tjak et al. (2021) conceded to the need for further examination if ACT and CBT operate differently for different groups of depressed individuals. Cuijpers et al.'s (2020) recent study revealed that different age groups implied different effect sizes in psychotherapies, with young adults being the highest.

Summarily, this study selected emerging adults as the research population following the statistical evidence on high mental health risks and mental disorder symptoms among younger adults (Gustavson et al., 2018; Institute for Public Health, 2015). This life stage is also a highly volatile period compared to other phases, which increases the risk of developing depression or anxiety (Arnett et al., 2014). Much research emphasised emerging adults in tertiary education settings (Bishop et al., 2019; Cuijpers et al., 2020; Germani et al., 2020; Reed-Fitzke, 2020), which might not represent the overall age group. Furthermore, the current study emphasised on this age group in Malaysia culture since the multitude of studies were performed in Western, educated, industrialised, rich, democratic (WEIRD) populations (Cuijpers et al., 2021; Farabaugh et al., 2018; Germani et al., 2020; Konradt et al., 2018; Lattie et al., 2019), thus restricting the outcome generalisability across people living in developing and non-western countries (Malaysia). As a culture-specific rather than universal period (Arnett, 2000), the use of emerging adults in Malaysia as the study population is duly justified.

1.3 Research Objectives

General Objective:

To compare the effects of CBT and ACT on depression and anxiety symptoms, as well as quality of life among emerging adults in Selangor.

Specific Objectives:

1. To compare the effects of CBT, ACT, and control group on depression symptoms among emerging adults in Selangor.
2. To compare the effects of CBT, ACT, and control group on anxiety symptoms among emerging adults in Selangor.
3. To compare the effects of CBT, ACT, and control group on total quality of life among emerging adults in Selangor.
4. To compare the effects of CBT, ACT, and control group on the four domains of quality of life among emerging adults in Selangor.
5. To determine the effects of CBT in reducing depression symptoms among emerging adults in Selangor.
6. To determine the effects of CBT in reducing anxiety symptoms among emerging adults in Selangor.
7. To determine the effects of CBT in increasing quality of life among emerging adults in Selangor.
8. To determine the effects of CBT in improving the four domains of quality of life among emerging adults in Selangor.
9. To determine the effects of ACT in reducing depression symptoms among emerging adults in Selangor.
10. To determine the effects of ACT in reducing anxiety symptoms among emerging adults in Selangor.
11. To determine the effects of ACT in increasing quality of life among emerging adults in Selangor.
12. To determine the effects of ACT in improving the four domains of quality of life among emerging adults in Selangor.

1.4 Research Questions

The following research questions guide the study process:

1. Is there a significant difference in post-test and follow-up level of depression symptoms among CBT, ACT, and control group?
2. Is there a significant difference in post-test and follow-up level of anxiety symptoms among CBT, ACT, and control group?
3. Is there a significant difference in post-test and follow-up level of quality of life among CBT, ACT, and control group?
4. Is there a significant difference in post-test and follow-up level in the four domains of quality of life among CBT, ACT, and control group?
5. Is CBT effective in reducing depression symptoms among emerging adults?
6. Is CBT effective in reducing anxiety symptoms among emerging adults?
7. Is CBT effective in improving quality of life among emerging adults?
8. Is CBT effective in improving the four domains of quality of life among emerging adults?

9. Is ACT effective in reducing depression symptoms among emerging adults?
10. Is ACT effective in reducing anxiety symptoms among emerging adults?
11. Is ACT effective in improving quality of life among emerging adults?
12. Is ACT effective in improving the four domains of quality of life among emerging adults?

1.5 Research Hypotheses

The following research hypotheses were proposed to address the research questions based on the conceptual study framework. The hypotheses were recommended based on past empirical outcomes that support them. Alternative hypotheses were used as previous works supported the CBT and ACT effectiveness on dependent variables.

RQ1: Is there a significant difference in post-test and follow-up level of depression symptoms among CBT, ACT, and control group?

H_a1: There is a significant difference among CBT, ACT, and control group on depression symptoms at post-test.

H_a2: There is a significant difference among CBT, ACT, and control group on depression symptoms at follow-up.

RQ2: Is there a significant difference in post-test and follow-up level of anxiety symptoms among CBT, ACT, and control group?

H_a3: There is a significant difference among CBT, ACT, and control group on anxiety symptoms at post-test.

H_a4: There is a significant difference among CBT, ACT, and control group on anxiety symptoms at follow-up.

RQ3: Is there a significant difference in post-test and follow-up level of quality of life among CBT, ACT, and control group?

H_a5: There is a significant difference among CBT, ACT, and control group on total quality of life at post-test.

H_a6: There is a significant difference among CBT, ACT and control group on total quality of life at follow-up.

RQ4: Is there a significant difference in post-test and follow-up level of the four domains of quality of life among CBT, ACT, and control group?

H_a7: There is a significant difference among CBT, ACT, and control group in physical domain at post-test.

H_a8: There is a significant difference among CBT, ACT, and control group in physical domain at follow-up.

H_a9: There is a significant difference among CBT, ACT, and control group in psychological domain at post-test.

H_a10: There is a significant difference among CBT, ACT, and control group in psychological domain at follow-up.

H_a11: There is a significant difference among CBT, ACT, and control group in social relationship domain at post-test.

H_a12: There is a significant difference among CBT, ACT, and control group in social relationship domain at follow-up.

H_a13: There is a significant difference among CBT, ACT, and control group in environment domain at post-test.

H_a14: There is a significant difference among CBT, ACT, and control group in environment domain at follow-up.

RQ5: Is CBT effective in reducing depression symptoms among emerging adults?

H_a15: There is a significant difference in depression score at pre- and post-test in CBT.

H_a16: There is a significant difference in depression score at post-test and follow-up in CBT.

RQ6: Is CBT effective in reducing anxiety symptoms among emerging adults?

H_a17: There is a significant difference in anxiety score at pre- and post-test in CBT.

H_a18: There is a significant difference in anxiety score at post-test and follow-up in CBT.

RQ7: Is CBT effective in improving quality of life among emerging adults?

H_a19: There is a significant difference in total quality of life at pre- and post-test in CBT.

H_a20: There is a significant difference in total quality of life at post-test and follow-up in CBT.

RQ8: Is CBT effective in improving the four domains of quality of life among emerging adults?

H_a21: There is a significant difference in physical score at pre- and post-test in CBT.

H_a22: There is a significant difference in physical score at post-test and follow-up in CBT.

H_a23: There is a significant difference in psychological score at pre- and post-test in CBT.

H_a24: There is a significant difference in psychological score at post-test and follow-up in CBT.

H_a25: There is a significant difference in social relationship score at pre- and post-test in CBT.

H_a26: There is a significant difference in social relationship score at post-test and follow-up in CBT.

H_a27: There is a significant difference in environment score at pre- and post-test in CBT.

H_a28: There is a significant difference in environment score at post-test and follow-up in CBT.

RQ9: Is ACT effective in reducing depression symptoms among emerging adults?

H_a29: There is a significant difference in depression score at pre- and post-test in ACT.

H_a30: There is a significant difference in depression score at post-test and follow-up in ACT.

RQ10: Is ACT effective in reducing anxiety symptoms among emerging adults?

H_a31: There is a significant difference in anxiety score at pre- and post-test in ACT.

H_a32: There is a significant difference in anxiety score at post-test and follow-up in ACT.

RQ11: Is ACT effective in improving quality of life among emerging adults?

H_a33: There is a significant difference in total quality of life score at pre- and post-test in ACT.

H_a34: There is a significant difference in total quality of life score at post-test and follow-up in ACT.

RQ12: Is ACT effective in improving the four domains of quality of life among emerging adults?

H_a35: There is a significant difference in physical score at pre- and post-test in ACT.

H_a36: There is a significant difference in physical score at post-test and follow-up in ACT.

H_a37: There is a significant difference in psychological score at pre- and post-test in ACT.

H_a38: There is a significant difference in psychological score at post-test and follow-up in ACT.

H_a39: There is a significant difference in social relationship score at pre- and post-test in ACT.

H_a40: There is a significant difference in social relationship score at post-test and follow-up in ACT.

H_a41: There is a significant difference in environment score at pre- and post-test in ACT.

H_a42: There is a significant difference in environment score at post-test and follow-up in ACT.

1.6 Significance of the Study

The research significance elaborates on how the empirical findings would benefit emerging adults and mental health professionals. Essentially, this work examined the CBT and ACT effects on depression and anxiety symptoms and quality of life among emerging adults in Selangor, Malaysia. As depression could impair multiple vital functions (Gustavson et al., 2018), early treatment for these symptoms may benefit emerging adults in the general community through optimal mental health, high productivity, and low healthcare service costs. The study outcomes could be advantageous to emerging adults, who constitute most of the young adult and undergraduate student population with vulnerability to depression symptoms (Boyne & Hamza, 2022). Locally, depression is prevalent among emerging adults in the 20-29 age group (Institute for Public Health, 2020). Besides, a survey by the American College Health Association (2019) highlighted the rise of depression and anxiety symptoms and stress among many emerging adults (college students), which could instigate poor academic performance.

Post-secondary education is deemed challenging for emerging adults following the transition from being students to workers and the need to independently confront life conflicts and obstacles. Sound mental health enables these adults to face the aforementioned complexities. Additionally, emerging adults with higher depression symptoms may become the risk factor for nonsuicidal self-injury (Boyne & Hamza, 2022; Liu et al., 2016). Such behaviour is associated with increased suicidal thoughts and attempts among emerging adults (Kiekens et al., 2018). The current empirical findings would provide Malaysian emerging adults with ideal interventions that emphasise both depression symptoms and disorders given the substantial number of people with undiagnosed depression (Ng, 2014).

This study would also significantly contribute to mental health professionals in Malaysia. The ACT, which primarily consists of mindfulness interventions, may be an alternative to traditional CBT or other psychotherapy when psychiatric care is not available or affordable among emerging adults with mild-to-moderate depression (Reangsing et al., 2022). Since the study focuses on nonclinical depression, this will help health policymakers to use ACT as supplementary treatment for self-reported depression among emerging adults (Reangsing et al., 2022). The present study may also aid the policymakers to view which treatment is more effective in non-clinical depression and emphasize on that treatment particularly when dealing with emerging adults (e.g., in universities where most undergraduate students comprise of emerging adults).

1.7 Definitions of Terms

Cognitive Behaviour Therapy

Conceptual definition:
Dr Aaron T. Beck developed CBT in the 1960s based on the view that depressed patients experienced streams of spontaneously arising automatic thoughts. Cognitive therapy for depression is based on the cognitive theory of depression (Beck et al., 1979). In line with Beck et al. (1979), the term behavioural in CBT implies immediate therapeutic attention based on patients' overt behaviour, where the therapist prescribes goal-directed activities. The behavioural techniques in CBT, such as activities scheduling, graded-task assignment, and role-playing aim to produce a change in negative attitudes for improved patient performance.

Operational definition:
In the current study, CBT was delivered in individual format based on Beck and Beck's (2011) CBT structure and format. The CBT intervention was arranged in 10 weekly sessions, with 45 to 60 minutes per session.

Acceptance and Commitment Therapy

Conceptual definition:
The ACT is a third-generation behaviour therapy following RFT: a functional contextual programme of basic research on language and cognition (Hayes et al., 2001). Notably, the ACT process and techniques constitute six core therapeutic processes, namely defusion, acceptance, present moment, values, committed action, and self-as-context. All six processes created psychological flexibility or the ability to be present, open up, and do what matters (Harris, 2019).

Operational definition:
In this study, ACT was delivered in individual format with the intervention based on Harris's (2019) and Zettle's (2007) ACT structure and format. The ACT intervention was arranged in 10 weekly sessions, with 45 to 60 minutes per session.

Emerging Adults

Conceptual definition:
Adults aged 18 years old and above depict the age of majority following the Age of Majority Act 1971 (Laws of Malaysia, 2014). Meanwhile, emerging adults imply those aged from 18 to 29 years old based on Arnett's (2000) theory of development. The five key features of emerging adulthood are

presented as follows: identity exploration, self-focus, instability, feeling in-between, and possibilities (Arnett, 2000).

Operational definition:
In this study, emerging adults denoted Malaysian aged 18 to 29 years old, regardless of their employment status (student, worker, or others).

Depression symptoms

Conceptual definition:
Depression, which is clinically known as MDD, is a common and serious mental disorder characterised by discrete episodes involving distinct changes in cognition, affect, and neurovegetative functions and inter-episode remissions spanning at least two weeks (American Psychiatric Association, 2013).

Operational definition:
In this study, depression implied mild-to-severe symptoms with a score of 14 and above on Beck Depression Inventory-II. People who have already been diagnosed with MDD or other psychiatric illnesses were excluded from the study. The BDI-II (Beck et al., 1996) contains 21 items, each of which encompasses four response options presented on a scale of 0 to 3.

Anxiety symptoms

Conceptual definition:
Anxiety is the anticipation of future threats, which is frequently associated with muscle tension and vigilance in preparation for future dangers (American Psychiatric Association, 2013). Anxiety symptoms differ from anxiety disorders. The latter is excessive and persists beyond appropriate periods, which must be diagnosed with specific criteria based on DSM-V.

Operational definition:
In this study, anxiety denotes the anxiety symptoms measured using BAI (Beck et al., 1988). This inventory contains 21 items, each of which encompasses four response options presented on a scale of 0 to 3.

Quality of Life

Conceptual definition:
Quality of life, which includes physical health, psychological state, personal beliefs, and social relationships implies how individuals perceive their position in life based on culture and value system (WHOQOL Group, 1995).

Operational definition:
In this study, the WHOQOL-BREF (WHOQOL Group, 1995) instrument served to measure the quality of life. This instrument, which is a summarised version of the WHOQOL-100, contains 26 items and measures four domains of quality of life: physical, psychological, social relationship, and the environment.

1.8 Limitation of Study

This research encountered several limitations. For example, the involvement of emerging adults between 18 and 29 years old in this study may limit the outcome generalisability across individuals above or below this age range. Cuijpers et al. (2020) added that the distinctiveness of therapy outcomes in different age groups could facilitate mental health professionals' understanding of potential and appropriate treatment across age groups for optimal treatment selection.

The current work was conducted in two different places, Universiti Putra Malaysia (UPM) and Mental Illness Awareness and Support Association (MIASA), following the limited number of cooperative participants. As both locations are situated in Selangor, the outcome may differ in different states, such as those within rural areas. The Institute for Public Health (2020) also emphasised a more vulnerable sub-population and high prevalence of depression among those in rural areas and Bumiputera Sabah. Performing studies in other sub-populations, such as rural-area Bumiputera Sabah may provide a holistic comprehension of the treatment effects on Malaysian emerging adults.

The control group is another study limitation. Specifically, the control group participants underwent one psychoeducation session and were placed on the waiting list until the end of the study to receive the same treatment. Due to unstable mood, these individuals may feel disadvantaged and not cooperate well, which may impact the dropout rate. Alternatively, they may remain depressed during the study to receive the treatment, thus impacting the study outcomes (Furukawa et al., 2014). Increased contact or more perceived social support rather than intervention components could cause outcome differences between treatment and control groups (Roth et al., 2005). Regardless, Kinser and Robins (2013) proposed waitlist control as a control group in order to investigate the treatment effects. Waitlist control was employed in this study to comply with ethical reasons and to retain the study participants.

1.9 Chapter Summary

This chapter outlined the study background, problem statement, objectives, research questions, hypotheses, significance of the study, the definition of terms, and research limitations on the CBT and ACT effects on depression, anxiety, and quality of life among Malaysian emerging adults. The chapter elaborated on the significance of depression symptom treatments among Malaysian emerging adults following the increased prevalence of depression and vulnerability in this age group, as well as emphasising on the differences of therapeutic interventions in different age populations. Chapter 2 discusses the theories and past literature associated with this study.

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