



NATURE CONNECTEDNESS, PERCEIVED SOCIAL SUPPORT, AND DEATH
ANXIETY: THE MEDIATING ROLE OF PERCEIVED STRESS IN MALAYSIAN
YOUNG ADULTS

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Nature Connectedness, Perceived Social Support, and Death Anxiety: The Mediating Role of
Perceived Stress in Malaysian Young Adults

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This research project is submitted in partial fulfilment of the requirements for the Bachelor of Social Science (Hons) Psychology, Faculty of Arts and Social Science, Universiti Tunku Abdul Rahman. Submitted on April 2026.

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APPROVAL FORM

This research paper attached hereto, entitled “Nature Connectedness, Perceived Social Support, And Death Anxiety: The Mediating Role of Perceived Stress in Malaysian Young Adults” prepared and submitted by Lim Hwee San, Ng Jou En and Yeong Yixing in partial fulfillment of the requirements for the Bachelor of Social Science (Hons) Psychology is hereby accepted.

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Abstract

Death anxiety is growing yet underexplored mental health concern among young adults. The study explored how perceived stress serves a mediating role within the relationships between nature connectedness, perceived social support, and death anxiety among Malaysian young adults. The research was grounded in Terror Management Theory (TMT) and Transactional Model of Stress and Coping (TMSC) in conceptualising existential fear management through cultural worldviews and cognitive stress appraisal. A quantitative design with convenience sampling was used to collect data from 132 Malaysian young adults aged 18 to 30 years via online platform. Death Anxiety Questionnaire (DAQ), Nature Relatedness Scale (NR-6), Multidimensional Scale of Perceived Social Support (MSPSS) alongside Perceived Stress Scale (PSS-10) were utilized to measure the variables. Findings revealed that perceived social support negatively predicted perceived stress, whereas perceived stress positively predicted death anxiety. Neither nature connectedness nor perceived social support significantly predicted death anxiety, and perceived stress did not significantly mediate either relationship. These findings extend the literature on TMT and TMSC in the young adult Malaysian context by offering a foundation for developing psychological interventions combining social support systems with nature-related activities. These findings suggest that stress management may play a more important role than external factors in addressing death anxiety among young adults. Thus, mental health interventions should prioritize stress-management techniques to reduce death anxiety. Future research is recommended to explore stress reduction interventions integrating nature-based activities and group-based therapeutic approaches as potential strategies to deal with death anxiety among this population.

Keywords: death anxiety, nature connectedness, perceived social support, perceived stress, young adults

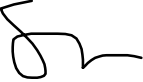
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DECLARATION

We declare that the material contained in this paper is the end result of our own work and that due acknowledgement has been given in the bibliography and references to ALL sources be they printed, electronic or personal.

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List of Abbreviations

COVID-19	Coronavirus Disease 2019
DAQ	Death Anxiety Questionnaire
IBM	International Business Machines
K-S	Kolmogorov-Smirnov
MBIs	Mindfulness-based Interventions
MSPSS	Multidimensional Scale of Perceived Social Support
NR-6	Nature Relatedness Scale
PSS-10	Perceived Stress Scale
Q-Q	Quantile-Quantile
QR	Quick Response
RQ	Research Question
SERC	Scientific and Ethical Review Committee
SPSS	Statistical Package for Social Sciences
SRT	Stress Recovery Theory
TMSC	Transactional Model of Stress and Coping
TMT	Terror Management Theory
UTAR	Universiti Tunku Abdul Rahman
VR	Virtual Reality
α	Cronbach's Alpha
β	Standardised regression coefficient
b	Unstandardised regression coefficient
CI	Confidence Interval
D	Cohen's d (effect size)
f^2	Effect size

H	Hypothesis
M	Mean
n	Sample size
p	Probability value
r	Correlation coefficient
SD	Standard Deviation
SE	Standard Error
t	t-statistic

Chapter I

Introduction

1.1 Background of the Study

Death is defined as the permanent termination of physical and mental processes in an organism (American Psychological Association, 2014). Death anxiety means the fear or worries about one's own mortality that triggered in situations when individual senses threat. It can develop into a persistent condition by overwhelming preoccupation with death, particularly among young and middle-aged adults or those with mental health difficulties (Balaji et al., 2024). Over time, the concept of death anxiety has been expanded beyond fear of one's own death. Now, it includes fear of loss, the process of dying, and fear of the unknown (Sims et al., 2023). Death anxiety is also known as thanatophobia.

It is essential to examine how developmental challenges contribute to the population's vulnerability. Young adults are experiencing identity exploration, career growth, intimate relationship formation, and future planning in this critical developmental stage (Mannerström et al., 2019). All of these uncertainties make them exceptionally vulnerable to existential stress and can affect their psychological well-being. Research by Bass (2021) also shows that younger individuals tend to feel more negative toward death and have greater fear of it. It is partly because they have limited exposure to death and causes them not to know how to cope with it. Moreover, the fear of losing loved ones can lead to prolonged grief disorder and result in dysregulated cortisol, depression, stress, and disrupted daily routines (Holland et al., 2013; Rubin et al., 2022). Together, developmental instability and limited death-related experience lead to young adults' sensitivity to stressors that trigger concerns about mortality and make death anxiety very noticeable in this group.

The prevalence of anxiety among young adults highlights the extent of this vulnerability. Research indicates that 52.71% of young adults are experiencing mild anxiety,

and 30.99% of them have minimal anxiety (UNICEF, 2023). This makes more than half of the population, and the anxiety levels are notably high. Although not specific to death anxiety, a study by Matić et al. (2022) found that severe depression rose by 19.3%, anxiety by 17.1%, and stress by 9.3% during the COVID-19 pandemic. Suicidal ideation also showed a major surge, increasing double to 28.4%. Exposure to mass death during the pandemic likely increased mortality salience among the population as individuals became more aware of the inevitability of death.

Other than that, data from Malaysia shows that young adults face a higher risk of sudden and external causes of death. Transport accidents are the leading cause of death for the age group covering young adulthood from 18 to 40 years old in 2023 (Department of Statistics Malaysia, 2024). This can increase feelings of vulnerability among young adults as the statistic indicates that death is unpredictable regardless of age and health condition.

The fear of death is also closely linked to negative mental health outcomes. Research shows individuals with stronger fear of death tend to have lower mental well-being (Gupta & Singh, 2019), and higher death anxiety contributes to worsening mental health symptoms (Jazaieri et al., 2022; Menzies et al., 2019). Fear of death can create feelings of helplessness and meaninglessness that undermine emotional stability and happiness. It may also lead individuals to rely on maladaptive coping behaviours (Sims et al., 2023). This suggests a vicious cycle that is worth emphasizing during young adulthood.

Death anxiety among young adults may lead to serious consequences across multiple domains. Biologically, death anxiety has been shown to increase blood pressure and heart rate, weaken immune response, and impair physical functioning (Bidgol et al., 2020). Furthermore, death anxiety has positive associations with a range of psychopathologies, including depression, anxiety, stress, clinical impairment, and higher lifetime diagnoses (Menzies et al., 2019). A study by Chahda et al. (2018) shows that risky behaviour is one of

the ways young adults respond when facing fear of death. In the social domain, death anxiety causes exhaustion and reduced work motivation that results in poorer job performance (Ogbonnaya et al., 2022). If this issue remains unaddressed among young adults, these risks may intensify over time and worsen their vulnerability to physical and mental health problems, as well as worsen their social performance.

Protective factors such as nature connectedness and social support have been shown to reduce perceived stress, which means one's subjective evaluation of one's own stress in daily life (Amin et al., 2024; Ma et al., 2025). Nature connectedness helps reduce stress, anxiety, and depression levels, as well as promotes resilience by increasing feelings of mindfulness and awe (Büssing et al., 2025; Kang et al., 2023; Zhou et al., 2025). Additionally, strong social support lowers perceived stress and improves emotional regulation that reduces the intensity of death anxiety (Acoba, 2024; Chukwuorji et al., 2019; Obara-Gołębiowska, 2025).

According to stress and coping theory, psychological outcomes are shaped by how individuals perceive and utilise resources to respond to stressors, not just on the events that they experienced (Biggs et al., 2017). Protective factors like social support or nature connectedness can serve as a resource that influences how stress is appraised. The way stress is evaluated further impacts psychological outcomes like death anxiety (Acoba, 2024; Schony & Mischkowski, 2024).

Given the prevalence of anxiety among young adults and the vulnerabilities they face during this developmental stage, it is crucial to understand the factors that influence death anxiety. This study aims to examine perceived stress as the mediator between nature connectedness, perceived social support, and death anxiety among young adults in Malaysia. By exploring these relationships, the study seeks to identify protective factors that may help mitigate death anxiety and its associated consequences in this population.

1.2 Statement of the Problem

Death anxiety is an emerging but underexamined mental health concern among young adults in Malaysia, typically between 18 and 30 years old. They are considered more susceptible because of the sudden encounter of mortality events. For example, road traffic accidents claim approximately 6,000 lives every year in Malaysia (Malaysia Road Safety Profile 2025, 2025). Within this number, young adults aged 15–44 form the majority of fatalities, whereas minors (<14 years) and seniors (>65 years) make up only a small part (Malaysia Road Safety Profile 2025, 2025; Mohamad, 2025). In addition, dramatic crises like the COVID-19 period have made people more aware of facing death, contributing to an increase in death anxiety and associated mental health challenges (Shukri et al., 2023). Moreover, young adulthood involves critical life tasks like identity formation, career and academic planning, and forming independent social roles. When these challenges combined with emotional sensitivity and existential reflection, it increases young adults' risk of stress and death anxiety (Siaw et al., 2025; Yu et al., 2025). Recent studies show that young adults experiencing mortality reminders report higher levels of anxiety and depression. This suggests that death anxiety may function as an underlying driver of broader psychological distress (Hughes & Jones, 2022; Yu et al., 2025).

Despite this, the current policy on mental health and the services within Malaysia mainly address general symptoms and with less concern for existential fears or unique developmental vulnerabilities of young adults, leaving them underrecognized and with inadequate intervention (Samsudin et al., 2024; Shukri et al., 2023; Yu et al., 2025). Cultural stigma around discussing death further suppresses help-seeking, leaving a critical gap in mental health support for this population (Samsudin et al., 2024; Shukri et al., 2023; Yu et al., 2025).

Among the various mental health issues affecting young adults, death anxiety remains an underexplored but potentially important contributor to psychological distress. Also, there is relatively limited research examining death anxiety among young adults (Chahda et al., 2018), whereas the majority of studies have concentrated on older adults (Bidgol et al., 2020; Zhang et al., 2019) and cancer patients (Bibi & Khalid, 2019; Grossman et al., 2017).

In the Malaysian context, the significance of death anxiety is further shaped by cultural factors. The discussion of death in Malaysia is often considered taboo and not openly discussed, thus making death-related concerns an emerging social problem. This cultural reluctance to address mortality openly may leave young adults without adequate frameworks for processing death-related anxieties, therefore potentially worsening their psychological distress (Foong & Aziz, 2022). Despite its potential impact on well-being, there is still limited research on death anxiety among Malaysian young adults, particularly in relation to protective factors that might mitigate its effects.

1.2.1 Knowledge Gap

Although nature connectedness and perceived social support have been widely studied against psychological distress and common mental health problems, there are several gaps in understanding their relationship with death anxiety.

First, no integrative conceptual framework has simultaneously associated both nature connectedness and perceived social support as contributing factors on death anxiety with perceived stress as mediation. Existing models examine each variable separately or with more general psychological outcomes (Baceviciene & Jankauskiene, 2022; Gawrych, 2024), with the comprehensive relationships with death anxiety remaining unexplored.

Second, the mediating mechanism of perceived stress influence death anxiety remains largely unexamined. While some studies have tested stress-mediation models (Acoba, 2024),

none have tested perceived stress as a mediator in the relationships between nature connectedness, perceived social support, and death anxiety.

Third, much of the existing work on death anxiety examines older age groups or clinical populations (Bergman et al., 2025; Gui et al., 2025), with relatively few studies addressing young adults. This limits understanding of how death-related fears manifest in early adulthood, a period marked by unique developmental, social, and existential challenges.

Fourth, there is an important contextual gap. Almost all previous studies on these relationships have been conducted in countries with relatively similar or more homogeneous cultural and religious backgrounds (Bibi & Khalid, 2019; Chhajer & Bapat, 2025; Chukwuorji et al., 2019). In contrast, Malaysia is a highly multicultural and multi-religious society where Malays, Chinese, Indians, and indigenous groups hold very different beliefs and norms about death and the afterlife. Because of these major cultural and religious differences, findings from those countries cannot be directly applied to the Malaysian context.

Together, these gaps highlight the need for a comprehensive study investigating how nature connectedness and perceived social support influence death anxiety through perceived stress as a mediator among Malaysian young adults.

1.3 General Objective

To determine whether perceived stress mediates the relationship between nature connectedness, perceived social support, and death anxiety among young adults in Malaysia.

1.4 Research Objectives

1. To determine the relationship between nature connectedness and death anxiety among young adults in Malaysia.

2. To determine the relationship between perceived social support and death anxiety among young adults in Malaysia.
3. To determine the relationship between perceived stress and death anxiety among young adults in Malaysia.
4. To determine the relationship between nature connectedness and perceived stress among young adults in Malaysia.
5. To determine the relationship between perceived social support and perceived stress among young adults in Malaysia.
6. To determine whether perceived stress mediates the relationship between nature connectedness and death anxiety among young adults in Malaysia.
7. To study whether perceived stress mediates the relationship between perceived social support and death anxiety among young adults in Malaysia.

1.5 Research Questions

1. What is the relationship between nature connectedness and death anxiety among young adults in Malaysia?
2. What is the relationship between perceived social support and death anxiety among young adults in Malaysia?
3. What is the relationship between perceived stress and death anxiety among young adults in Malaysia?
4. What is the relationship between nature connectedness and perceived stress among young adults in Malaysia?
5. What is the relationship between perceived social support and perceived stress among young adults in Malaysia?

6. Does perceived stress mediate the relationship between nature connectedness and death anxiety among young adults in Malaysia?
7. Does perceived stress mediate the relationship between perceived social support and death anxiety among young adults in Malaysia?

1.6 Research Hypotheses

H1: Nature connectedness is negatively associated with death anxiety among young adults in Malaysia.

H2: Perceived social support is negatively associated with death anxiety among young adults in Malaysia.

H3: Perceived stress is positively associated with death anxiety among young adults in Malaysia.

H4: Nature connectedness is negatively associated with perceived stress among young adults in Malaysia.

H5: Perceived social support is negatively associated with perceived stress among young adults in Malaysia.

H6: Perceived stress mediates the relationship between nature connectedness and death anxiety among young adults in Malaysia.

H7: Perceived stress mediates the relationship between perceived social support and death anxiety among young adults in Malaysia.

1.7 Significance of Study

This study is important because it represents an investigation of death anxiety among Malaysian young adults. With the rapid development of technology and the economy, today's young adults spend much more time engaging with digital devices and social media than with

the surrounding natural environment outside. While the use of social media has increased social support from online life (Riehm et al., 2019), it is still a contributing factor to loneliness among young people. Studies show that longer-term social media exposure is associated with greater loneliness (Islam et al., 2021; Jun et al., 2023). Those students who report low levels of nature connectedness say that this is often because they have less experience of going outdoors and because they prefer indoor digital activities (Bezeljak et al., 2023). This avoidance of nature is also depriving them of a resource that can be used to regulate their emotions (Jimenez et al., 2021). The present study combines two protective factors, nature connectedness and perceived social support, to explore how they reduce death anxiety by decreasing perceived stress. This approach helps clarify which protective factors most effectively enhance the psychological well-being of young people.

There are several studies on death anxiety in Malaysia on healthcare workers, end-of-life caregivers, and university students (Azhar et al., 2021; Chow et al., 2021; Hoesni et al., 2021). However, no study seems to have connected nature connectedness and death anxiety in young people. Thus, this study addresses the gap by concentrating on Malaysian young people and integrating social support and nature connectivity into a single model. By investigating how these variables influence death anxiety through perceived stress, the study provides localized empirical data that can inform future cross-cultural research and mental health interventions.

The result of this study is expected to provide practical support for mental health initiatives. The findings could help psychologists and counselling facilities in creating stress-reduction and anxiety-prevention programs by investigating whether experienced stress is correlated to nature and perceived social support among young adults in Malaysia.

1.8 Conceptual Definition

1.8.1 *Death Anxiety*

A typical definition of death anxiety is an emotional reaction based on the perception of imminent mortality (Sims et al., 2023). When faced with thoughts, pictures, or anticipations of death, people who suffer from death anxiety frequently experience fear, distress, or apprehension.

1.8.2 *Nature Connectedness*

Nature connectedness is defined as a concept with several components, covering mental, emotional, and experiential processes (Zylstra et al., 2014). Cognitively, it involves the belief that humans are part of the natural world rather than separate from it. Affectively, it reflects feelings of closeness, belonging, and emotional affinity toward nature. Experientially, nature connectedness includes direct engagement with natural environments and immersion in nature-based activities. Scholars also describe it as a sense of merging or oneness with nature, where individuals perceive the natural world as an extension of themselves.

1.8.3 *Perceived Social Support*

Perceived social support is a psychological construct that captures a person's own perception of how much support they can access and whether it meets their needs (Dutta et al., 2025).

1.8.4 *Perceived Stress*

A person's subjective assessment of life's demands as beyond their own coping mechanisms is known as perceived stress. The likelihood of experiencing mental health issues, especially depressive symptoms, is greatly increased by higher perceived stress levels (Ram et al., 2025).

1.8.5 *Young Adults*

Young adults in this study refer to Malaysian citizens or permanent residents with the age group from 18 to 30 years inclusive at the time of data collection. This age range adheres to the federal policy shift under the Youth Societies and Youth Development (Amendment) Act 2019 (The Star, 2023).

1.9 Operational Definition

1.9.1 *Death Anxiety*

The Death Anxiety Questionnaire is used to assess death anxiety (DAQ; Conte et al., 1982). Participant's overall ratings range from 15 to 75, the higher scores representing higher levels of death anxiety.

1.9.2 *Nature Connectedness*

In this study, nature connectedness is measured using a shortened six-item form of the Nature Relatedness Scale known as the NR-6, developed by Nisbet and Zelenski (2013). Higher scores reflect a stronger sense of connection to nature.

1.9.3 *Perceived Social Support*

Perceived social support is assessed with the Multidimensional Scale of Perceived Social Support (MSPSS), which was developed by Zimet et al. (1988) to evaluate how supported, valued, and cared for individuals feel within their close social networks. Scores are calculated by summing the items or averaging the subscale scores. A greater score reflects a stronger sense of social support.

1.9.4 *Perceived Stress*

The 10-item Perceived Stress Scale (PSS-10), created by Cohen et al. (1983), is used in this study to measure perceived stress. Higher scores reflect greater levels of perceived stress.

1.9.5 Young Adults

Young adults in this study refer to Malaysian citizens or permanent residents with the age group from 18 to 30 years inclusive at the time of data collection.

Chapter II

Literature Review

2.1 Death Anxiety

Death anxiety deserves attention among young people because they experience significant discomfort regarding death, as it is not abstract for them, and exposure to real-life mortality risks can increase this anxiety (Li et al., 2025). The COVID-19 pandemic served as a societal reminder to the threat of mortality and increased death anxiety among young people (Doğan & Şirin, 2022; Hughes & Jones, 2022; Li et al., 2025). This rising on fear of death was associated with an increase in perceived stress (Doğan & Şirin, 2022) and further magnified pre-existing mental health problems in young adults (Hughes & Jones, 2022). Menzies and Menzies (2020) also note that the crisis has strengthened the causal linkage between death anxiety and psychological distress.

Parents of children with disabilities report moderate to high levels of death anxiety, while older adults also report the same, in comparison to young adults. In parents, this is influenced by gender, employment status, lack of external support, and the child's comorbid conditions. This fear among older adults is tied to their concerns regarding financial or caregiving burdens that may be placed on their families once they are gone (Laguilles-Villafuerte & De Guzman, 2020). Those who were unemployed also had higher psychological distress and stronger death anxiety than their employed counterparts during the pandemic (Shakil et al., 2021). These findings show that death anxiety does indeed bear significance as a psychological concern across different groups.

Personality traits and cognitive factors are significant contributors to death anxiety. Indeed, Husain et al. (2024) noted that death anxiety was strongly associated with various maladaptive personality disorders, while only a few adaptive traits acted as protective factors. This asymmetry suggests that vulnerability factors may have stronger influences than

protective personality characteristics on death anxiety. Conversely, Pradhan et al. (2020) evidence that high neuroticism increases death anxiety indirectly through perceived stress. It further indicates that the influence of personality on death anxiety is better comprehended through mediating processes rather than direct effects. Similarly, individuals without a well-defined sense of identity may have increased death anxiety when attempting to find meaning in life (Maffly-Kipp et al., 2023).

Death anxiety is further influenced by the beliefs about death. Parents who treat death as part of nature reported low anxiety (Kaçan et al., 2021), and research has pointed out that continued stress or social isolation might cause spirals of anxiety to occur (Pradhan et al., 2020). Emotional and social loneliness due to a lack of support predicts higher death anxiety (Guner et al., 2021). Comparing these findings across contexts, one may thus note that personal beliefs, social environments, and psychological vulnerabilities jointly contribute to death anxiety, but their relative weight may vary depending on population and situational factors.

Although death anxiety has been studied in several international studies (Doğan & Şirin, 2022; Pradhan et al., 2020; Qayyum et al., 2023; Yang et al., 2025) and in Malaysia (Azhar et al., 2021; Hoesni et al., 2021), no known study has examined perceived stress as a mediator between protective factors of nature connectedness and perceived social support on death anxiety among non-clinical Malaysian young adults aged 18–30. The current study fills this specific gap by testing this mediation model within the Malaysian context.

2.2 Nature Connectedness and Death Anxiety

Nature connectedness, the subjective sense of being connected to the natural world, has been linked to enhanced well-being and adaptive coping strategies (Garza-Terán et al., 2022; Vowinckel et al., 2025). Individuals can strengthen their sense of connection through

sensory contact, emotional engagement, meaning-making, appreciation of nature's beauty, and compassion (Barragan-Jason et al., 2021). Positive psychology interventions and environmental education programs further enhance mindfulness, gratitude, well-being, resilience, and a sense of belonging, which reduce stress and support mental health (Asher, 2023; Büssing et al., 2025; Garip et al., 2020; Kang et al., 2023; Zhou et al., 2025).

A small body of research suggests that nature connectedness may reduce death anxiety. Das et al. (2024) found a reduction in death-related anxiety by using a short-term experimental meditation to induce a sense of connection to a larger whole. In contrast, Vowinckel et al. (2025) observed that higher nature connectedness correlated with lower fear and avoidance of death by examining the stable and culturally shaped attitudes toward nature across Canadian, Japanese, and Russian university students. Das et al. (2024) capture short-term and induced effects, whereas Vowinckel et al. (2025) reflect long-term and culturally mediated patterns.

Comparing the highlights of these studies suggests that a sense of connection to a larger whole-whether through direct engagement with nature or culturally embedded attitudes-can buffer death anxiety. However, the mechanisms and generalizability differ: Das et al. (2024) capture short-term and induced effects, whereas Vowinckel et al. (2025) reflect long-term and culturally mediated patterns. The interpretation is further complicated by cultural factors, as responses to nature and death vary across societies.

From the perspective of Terror Management Theory, these findings align with the notion that existential threats and death anxiety can be mitigated by searching for meaning in life, enhancing psychological resilience, and developing a positive perspective on death (Earl, 2022; Rana & Jain, 2018). Moreover, the Transactional Model of Stress and Coping emphasise that contact with natural cycles may reduce stress when thinking about death and, in turn, diminish one's anxiety regarding death (Ghaffari et al., 2021). Although theories do

exist to explain the nature of the relationship between natural connectivity and death anxiety, the measures are indirect. Additionally, no publically available research directly investigates this relationship. To fill the gap in the literature, research will directly investigate whether high levels of natural connectivity are associated with reduced death anxiety.

2.3 Perceived Social Support and Death Anxiety

Research across various populations consistently demonstrates that perceived social support functions as a psychological buffer against death-related distress. Evidence from non-clinical young populations suggests that this pattern extends beyond clinical or high-risk groups. For example, Yu et al. (2025) found that Chinese young adults with lower perceived social support reported higher death anxiety, suggesting that limited interpersonal resources may intensify mortality-related fears. Although cultural differences may influence how support is expressed or valued, the study reinforces the broader mechanism proposed by Terror Management Theory, which supportive relationships provide meaning, belonging, and psychological security that buffer against fear of death (Pyszczynski et al., 2021).

Beyond young populations, the elderly or work in clinical and high-risk contexts further illustrate the protective role of social support (Hamidi et al., 2024; Gui et al., 2025; Kisomi et al., 2024; Qayyum et al., 2023). Yet these findings reflect substantial contextual variation. For example, research involving elderly COVID-19 survivors showed that individuals who perceived greater social support reported significantly lower death anxiety (Hamidi et al., 2024). Although this population differs in age and health status, the mechanism is theoretically relevant, as social support enhances psychological security, thereby reducing death-related fear, which is a core TMT proposition (Pyszczynski et al., 2021).

Clinical populations provide additional evidence. Studies involving cancer patients show that strong family support is associated with reduced death anxiety, likely because familial closeness helps individuals manage the heightened existential threat posed by life-threatening illness (Gui et al., 2025). Similarly, Kisomi et al. (2024) found that social support moderated the relationship between death anxiety and resilience among dialysis patients. In addition to direct links between support and lower death anxiety, social support strengthened emotional resilience, suggesting that interpersonal resources may help individuals reinterpret life-threatening situations with greater psychological stability. This reinforces theoretical explanations that social support contributes not only to stress reduction but also to existential reassurance, especially among individuals facing chronic health challenges (Pyszczynski et al., 2021).

Evidence from occupational settings offers additional support. Qayyum et al. (2023) reported that healthcare workers with higher social support experienced lower death anxiety and that support weakened the impact of secondary traumatic stress. This pattern aligns with the Stress-Buffering Hypothesis, which proposes that social support helps individuals manage psychological strain and reduce vulnerability to anxiety, including death anxiety, in stressful or high-risk environments (Maffei et al., 2025).

Despite these consistent associations, several methodological limitations require cautious interpretation. Much of the existing evidence relies on cross-sectional designs that restrict causal inference and make it unclear whether perceived social support reduces death anxiety or whether individuals with higher anxiety simply perceive less support (Gui et al., 2025; Kisomi et al., 2024; Yu et al., 2025). Many studies also rely on single-region or single-hospital samples, which limit generalisability across different cultural or demographic contexts (Hamidi et al., 2024; Gui et al., 2025; Kisomi et al., 2024; Yu et al., 2025). Additionally, few studies adequately control for confounders such as socioeconomic status,

personality traits, or prior trauma exposure, factors that may independently influence both social support and death anxiety (Hamidi et al., 2024; Gui et al., 2025; Kisomi et al., 2024; Yu et al., 2025). These limitations highlight the need for more diverse and methodologically rigorous research, particularly among non-clinical young adults, including those in multicultural settings such as Malaysia, who remain largely understudied compared to elderly or clinical populations.

Taken together, existing literature demonstrates a consistent pattern between perceived social support and death anxiety, but the mechanisms through which support reduces existential distress differ across populations. These variations imply that the effectiveness of perceived social support depends on the types of psychological resources most relevant to each group's vulnerabilities. While most prior studies have been conducted outside Malaysia and focus heavily on clinical or older adult samples, Terror Management Theory offers a theoretical basis for expecting similar anxiety-buffering effects among young adults in Malaysia. This mechanism may operate even more strongly in the Malaysian context, where close social ties often serve as a central coping resource. Therefore, understanding this relationship is particularly important for explaining how social support may help reduce death anxiety among young adults (Siaw et al., 2025). Together, these perspectives provide a strong theoretical foundation for the current study's hypothesis that greater perceived support from one's social network is associated with reduced death anxiety among young adults in Malaysia.

2.4 Perceived Stress and Death Anxiety

Several research show a positive relationship between perceived stress and death anxiety (Eren et al., 2023; Gelen et al., 2022; Genç, 2023; Koç & Başgöl, 2022). Different forms of stress contribute to death concerns. For example, secondary traumatic stress among

healthcare staff (Qayyum et al., 2023) and work-related stress in police officers (Nayab & Sana, 2024) is associated with higher death anxiety. These findings highlight the need of studying perceived stress in young adults as occupational and situational stressors can influence how individuals perceive mortality.

However, the relationship is not consistent across populations. Among clinical samples, perceived stress increased death anxiety in patients with Chronic Obstructive Pulmonary Disease (Genç, 2023) and in individuals diagnosed with COVID-19, particularly those with chronic illnesses (Eren et al., 2023). In contrast, Yang et al. (2025) found that perceived stress did not predict death anxiety in a more severe clinical population, which is the pancreatic cancer patients. This difference may be due to immediacy and severity of health threats. Patients with life-threatening illnesses may concentrate on survival rather than everyday stress.

Findings in Malaysia further illustrate contextual variability. Azhar et al. (2021) observed that higher psychological stress among private university students was associated with lower death anxiety. It is possibly due to emotional numbing or desensitization for the amount of stress they have experienced. Also, Hoesni et al. (2021) reported no significant relationship between perceived stress and death anxiety in Malaysian adults. Compared to findings in Western or clinical populations, these results suggest that cultural factors may shape how stress influences death-related perceptions, potentially affecting coping strategies and the use of defensive mechanisms (Dar-Nimrod, 2022).

Furthermore, study from Pradhan et al. (2020) found that perceived stress fully mediated the relationship between neuroticism and death anxiety among young adults. This indicates that stress appraisal interventions may buffer the effects of personality traits. Supporting this, Menzies et al. (2023) demonstrated that online cognitive-behavioural therapy effectively reduced both stress and death anxiety. These findings suggest that addressing

perceived stress can be both a predictive factor and a point of intervention, highlighting its central role in understanding and managing death anxiety.

2.5 The Mediating Role of Perceived Stress

Perceived stress plays a central role in how individuals respond to environmental and social factors. This suggests that the calming and restorative effects of nature could reduce stress, which in turn may influence outcomes such as death anxiety. Several studies support this as they found that higher nature connectedness is associated with lower stress and improved well-being (Bakir-Demir et al., 2021; Korpilo et al., 2024; Menardo et al., 2022). Similarly, Baceviciene and Jankauskiene (2022) reported that adults with greater exposure to natural environments experienced stronger nature connectedness, lower stress, and better quality of life. While these studies consistently link nature to reduced stress, Bakir-Demir et al. (2021) highlighted the role of adaptive coping strategies in mediating this relationship, suggesting that the benefits of nature may depend not only on exposure but also on how individuals engage with it.

Nature-based interventions further illustrate these effects, but the results are not always consistent. Forest therapy sessions that engage all five senses have been linked to increased parasympathetic activity and lower stress levels (Yang et al., 2024). Garden or forest-based interventions also reduce stress and enhance well-being, particularly for individuals with stress-related conditions (Johansson et al., 2022). Moula et al. (2022) extended these findings by showing that art-based interventions in natural settings improve children's and young people's well-being, likely by helping them perceive themselves as part of a broader ecological system. However, Djernis et al. (2025) reported that a 12-week outdoor office work intervention did not significantly reduce stress. This highlights that the effectiveness of nature exposure may depend on activity type, frequency, or individual

differences. This comparison suggests that while nature can buffer stress, its impact depends on the context.

Even indirect or virtual contact with nature shows promising effects. Reese et al. (2022) and Fan and Baharum (2024) found that stress reduction from virtual reality nature experiences was comparable to that from physical nature. This finding indicates that connectedness does not require direct exposure. Lau et al. (2023) also reported that repeated brief virtual nature exposure improved mood and reduced stress among university students. Chan et al. (2021) and Reese et al. (2022) also reported that virtual reality experiences of nature were associated with lower self-reported stress in general populations. Across these studies, both direct and virtual engagement with nature appear to enhance psychological well-being, although intensity and duration may influence outcomes.

Perceived stress also mediates the effects of social and environmental support. Among university students, social support consistently reduces stress and improves mental health. In the U.S., family and peer support buffered worry and isolation (Suwinyattichaiyorn & Johnson, 2022; Szkody et al., 2021). In Ireland, support helped first-year students cope with the transition to university life (McLean et al., 2022). Malaysian studies show similar patterns where social support reduced stress and mitigated nomophobia among young adults (Lai et al., 2022).

Comparable mediation effects appear in other groups, including pregnant women (Bahrami-Samani et al., 2023; Wang et al., 2023) and workers (Valenti et al., 2021). Among young adults, daily stress is associated with seeking online social support, which can mediate the effect of stress on behaviours such as addictive social media use (Brailovskaia et al., 2021). This suggests that perceived stress consistently connects supportive resources, whether social or environmental, with psychological or behavioural outcomes.

These comparisons highlight both consistencies and differences across studies. Nature connectedness and social support help in reducing stress. However, outcomes vary by intervention type, intensity, population, and context. Overall, these findings align with the Transactional Model of Stress and Coping (Margaret et al., 2018), showing that coping resources and support influence well-being. Importantly, they provide a theoretical basis for examining perceived stress as a mediator between nature connectedness, social support, and death anxiety among Malaysian young adults.

2.6 Gender, Age, and Ethnic Influences on Study Variables

Demographic factors such as gender, age, and ethnicity exert varying degrees of influence on nature connectedness, perceived social support, perceived stress, and death anxiety. Although these attributes are not central to the main hypotheses of this study, a critical review of existing evidence shows that demographic patterns are often inconsistent, context-dependent, and shaped by cultural or structural conditions. Understanding these variations is important for situating the current study within the Malaysian context, where research on these constructs, particularly among young adults, is still relatively limited.

Gender differences are documented across the four variables, but the evidence is far from uniform. International studies commonly report that women demonstrate slightly higher nature connectedness (Rosa et al., 2020), perceive greater emotional and family-based support (Khan et al., 2025), and experience higher perceived stress (Graves et al., 2021). However, Malaysian findings do not consistently match these patterns. For perceived stress, Grey et al. (2020) found that Malaysian female young adults reported higher stress levels than males, consistent with global trends. However, in terms of perceived social support, gender differences are typically small (Faisal et al., 2022), and gender was not significantly associated with death anxiety among Malaysian students (Azhar et al., 2021). These

inconsistencies indicate that gender effects may be context-dependent rather than universal. In Malaysia, cultural elements such as collectivism, communal coping expectations, and shared academic pressures may dilute gendered patterns observed in Western samples, suggesting that socio-cultural context plays a more important role than gender alone. This again highlights the need for local data rather than relying on assumptions derived from other socio-cultural contexts.

Although age-related patterns in nature connectedness, perceived social support, stress, and death anxiety have been documented internationally, their applicability to Malaysian young adults is less clear and requires contextual consideration. Younger adults tend to report lower nature connectedness, likely due to reduced unstructured exposure to nature and urbanised lifestyles, a pattern observed across multiple countries, including Malaysia (Barrable et al., 2024; Swami et al., 2024). Age differences in perceived social support are also well documented in general populations, with adolescents reporting higher support than emerging adults (Cao et al., 2022). However, these patterns are weakened in Malaysian university samples due to narrow age ranges and relatively homogenous social environments (Faisal et al., 2022), suggesting that age may not function as a strong differentiating factor in student populations. For perceived stress, Malaysian evidence mirrors global findings, where early adulthood is associated with increased academic, financial, and developmental stressors, contributing to higher perceived stress among individuals transitioning into independence (Huang et al., 2020; Mohamed et al., 2025; Sabri et al., 2023). Studies on death anxiety show a typical decline with age and greater acceptance among older adults (Bass, 2021), but cross-sectional comparisons between young and middle-aged adults yield small and sometimes non-significant differences (Pant & Rathore, 2024). Collectively, these findings suggest that while international benchmarks are informative, age effects in Malaysia are contextually constrained and moderated by socio-

cultural, developmental, and environmental factors, underscoring the need for locally grounded research rather than uncritical extrapolation from global trends.

Ethnicity exerts the most culturally grounded influence, yet findings are also shaped by structural conditions. Nature connectedness in Malaysia varies substantially by cultural tradition and environmental access. Indigenous communities such as the Orang Asli show strong nature connectedness due to embodied, land-based cultural practices (Diansyah et al., 2022). International work similarly reveals inequities in access to nature, with non-white groups losing more access during the COVID-19 pandemic than white groups despite comparable intrinsic connectedness (Flint et al., 2022). Perceived social support also differs along ethnic lines, shaped by norms of family responsibility and emotional expression. For example, in Malaysia, ethnicity predicted depressive symptoms even after controlling for socioeconomic status (Balqis-Ali & Fun, 2024), suggesting that culturally specific support structures have meaningful psychological consequences. However, international findings complicate simple assumptions. For instance, Black individuals reported higher family and friend support than White individuals after adjusting for socioeconomic status, while occupational prestige enhanced perceived support mainly for White individuals (Tobin et al., 2020). These patterns show that ethnicity interacts with socioeconomic and structural inequalities, making it difficult to attribute differences to culture alone.

For perceived stress, ethnic variations often arise indirectly from socioeconomic disparities or unequal access to coping resources. In Malaysia, minority groups with fewer socioeconomic resources experience higher stress (Nasib et al., 2023), whereas collectivistic cultural norms in some communities promote communal coping that may buffer stress (Azmi et al., 2023). Death anxiety also demonstrates clear ethno-religious patterns, particularly in Malaysia, where religious identity is closely intertwined with ethnicity. Young adults from Muslim backgrounds tend to report higher fear of their own death, while Buddhists and

Hindus express more concern for the death of others (Foong & Aziz, 2022). These findings underscore that existential concerns are not merely individual psychological responses but are embedded within culturally shared worldviews.

Overall, demographic influences across gender, age, and ethnicity show conceptual relevance but also substantial inconsistencies across studies, populations, and cultural contexts. The Malaysian literature remains relatively fragmented, with limited evidence specifically focusing on young adults, a group whose developmental stage and cultural context may produce distinct patterns from those observed internationally. These gaps emphasise the importance of empirically examining demographic variations within Malaysian young adult populations rather than assuming effects based solely on global findings. As such, the present study incorporates demographic variables as contextual factors while recognising that their predictive value may be limited or operate differently compared to broader international trends.

2.7 Theoretical Framework

2.7.1 *Terror Management Theory (TMT)*

According to TMT, humans' awareness of one's mortality creates existential anxiety. To mitigate such anxiety, individuals depend on three fundamental psychic buffers, including cultural worldviews, self-esteem, and interpersonal relationships (Dar-Nimrod, 2022). Cultural worldview gives symbolic meaning beyond one's life, one's self-esteem means that one has satisfied culturally defined ideals of value, and social relations provide emotional support and belonging (Svet et al., 2023). TMT differentiates between two kinds of defences: proximal defences and distal defences (Pyszczynski et al., 2021). Proximal defences act by the conscious thought process that represses death ideation through rationalizing the risks

involved. Distal defences, contrarily, address an unconscious death-related fear through the promotion of cultural worldview and self-esteem.

Although nature connectedness is not an original TMT buffer, it serves similarly by fostering meaning in life, psychological resilience, and positive perspectives on death (Earl, 2022; Rana & Jain, 2018). Similarly, social support confers relational security and a sense of belonging that decreases death anxiety (Svet et al., 2023). Both factors can lower perceived stress, which in turn decreases death anxiety (Gawrych, 2024; Gelen et al., 2022; Wang et al., 2014). Thus, such a role for perceived stress as a mediator between nature connectivity, perceived social support, and death anxiety is both conceptually and experimentally supported by improving these buffers.

2.7.2 *Transactional Model of Stress and Coping (TMSC)*

The Transactional Model of Stress and Coping emphasize that stress is a consequence of an individual-environment interaction. According to Margaret et al. (2018), people evaluate situations in terms of two kinds of appraisals. Primary appraisal identifies whether the situation is threatening, while secondary appraisal determines whether there are sufficient internal and external resources available to deal with the situation. When a person perceives external demands exceed their coping capability, that person experiences stress.

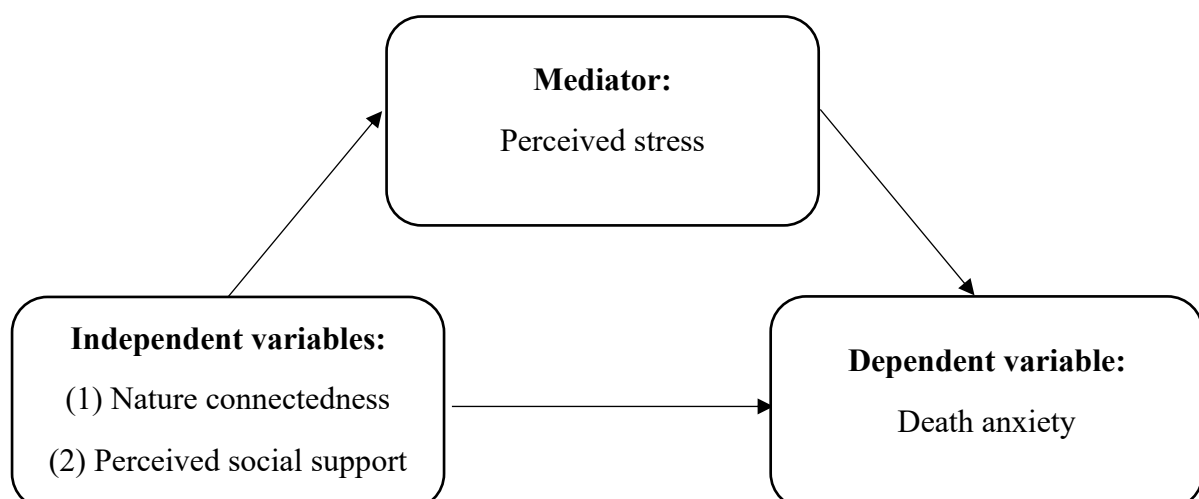
Social support decreases stress through providing emotional and practical resources (Spătaru et al., 2024; Sun et al., 2023; Yuan et al., 2024). Nature connectedness supports recovery from stress and lowers anxiety (Berto, 2014). Individual's fear of death increases as they lack coping resources (Dursun et al., 2022), whereas lowering perceived stress can help reduce death anxiety indirectly (Ghaffari et al., 2021). According to the transactional model, perceived stress is posited as a mediator between social and personal resources and death anxiety.

2.8 Conceptual framework

The conceptual framework for this study, presented in Figure 1, illustrates how perceived stress operates as an intermediary variable linking nature connectedness, perceived social support, and death anxiety among Malaysian young adults. The framework is based on Terror Management Theory, proposing that individuals rely on psychological and social resources to manage anxiety related to awareness of mortality (Dar-Nimrod, 2022; Svet et al., 2023). In this framework, death anxiety is the dependent variable, while nature connectedness and perceived social support are the independent variables. Perceived stress functions as the mediating variable that explains how these predictors may influence death anxiety. It is hypothesized that higher levels of nature connectedness and perceived social support are expected to reduce perceived stress, thereby decreasing death anxiety, whereas higher perceived stress is expected to increase death anxiety. Additionally, the framework also shows that nature connectedness and perceived social support may directly reduce death anxiety. Overall, this TMT-guided conceptual framework allows the study to examine the hypothesized direct, indirect, and mediating pathways, addressing all research objectives proposed in Chapter 1.

Figure 2.1

Conceptual framework presenting perceived stress as a mediating mechanism between nature connectedness, perceived social support, and death anxiety among young adults in Malaysia.



Chapter III

Methodology

3.1 Research Design

The present study utilized a quantitative methodology with a cross-sectional and correlational design. A quantitative approach was selected because the goal of this research was to statistically test the hypothesized relationships and mediation effects among nature connectedness, perceived social support, perceived stress, and death anxiety. This approach allowed for the psychological constructs to be measured objectively by applying validated scales, providing the numerical data necessary to perform Pearson correlation and mediation analysis using the PROCESS Macro (Gamage, 2025; Ponto, 2015). Data were collected from young adults in Malaysia at one specific point in time using a cross-sectional design. This design was appropriate because the study focused on examining relationships among variables at a single time frame, rather than investigating changes across different time periods (Cherry, 2025; Gamage, 2025; Thomas, 2020).

Additionally, a correlational design was chosen since this study seeks to examine the relationships between variables in real-world contexts without manipulating them (Gamage, 2025). This design was suitable for testing the associations in *H1–H5* and the mediating role of perceived stress in *H6* and *H7*. Data for this study were obtained through an online self-administered survey that included demographic items and validated scales. This method enabled the recruitment of a large and diverse sample of Malaysian young adults and provided a standardized and efficient procedure for obtaining numerical data suitable for statistical analyses (Gamage, 2025).

3.2 Sampling Procedure

3.2.1 Sampling Method

Participants were recruited via convenience sampling from those who were immediately available. The non-probability sampling method was selected as it offers a time and cost-effective approach to access the target population (Ahmed, 2024). This study focused on young adults aged 18-30 living in Malaysia. According to Department of Statistics Malaysia (2025), Malaysia has a total population of approximately 34 million. About 7 million young adults aged 18–30 formed the target population for this study. This population is distributed across urban and rural areas and represented diverse ethnic and socioeconomic backgrounds. By using convenience sampling, the study was able to access a large pool of potential respondents across the country within the timeframe.

3.2.2 Location of Study

The geographical location of this study is Malaysia, a Southeast Asia country composed of Peninsular and East Malaysia with a mix of urban and rural environments (Ministry of Foreign Affairs, Malaysia, 2019). This nation possesses a multicultural background and its population holds various cultural beliefs. This provides a diverse context for examining the psychological variables of the study. Data was collected via online survey to gather respondents across the country.

3.2.3 Ethical Clearance Approval

Prior the data collection process, the research supervisor reviewed and approved the questionnaire items, consent form, and overall procedure to ensure they met academic and ethical standards. Ethical clearance was also secured through the UTAR Scientific and Ethical Review Committee (UTAR SERC) under reference number of U/SERC/78-665/2025 (refer to Appendix A). The conduct of this research strictly adhered to the UTAR ethical guidelines to

ensure participant's personal data confidentiality complied with Research Ethics and Code of Conduct of UTAR.

3.2.4 Sample Size

Effect size was estimated based on correlations among the predictors and mediator, as these relationships directly contributed to the strength of the study. Previous studies have reported correlations between perceived stress and death anxiety, nature connectedness, and perceived social support, showing $r = 0.59, 0.15$ and 0.58 respectively (Abdollahi et al., 2019; Bakir-Demir et al., 2021; Zhang et al., 2022). According to Cohen (1988), the identified effect size of $f^2 = 0.3552$ was considered a large effect size. The minimum sample size was determined to be 53 using G*Power 3.1.9.7, based on three predictors with $\alpha = 0.05$ and power of 0.95. Following the suggestion of Israel (2009), a 30% buffer was added to the target sample to compensate for incomplete data, thereby ensuring the psychometric validity and reliability of the analysis. This adjustment was made to compensate for anticipated non-response bias and to ensure that the final sample being sufficient to maintain statistical power even after data cleaning. A total of 70 young adults aged 18–30 in Malaysia was targeted. The final collected sample size consisted a total of 150 responses. After removing invalid responses and completing data cleaning procedures, the final sample size was 132.

3.3 Research Instrument

The survey instrument comprised six components: The Personal Data Protection form, demographic questions, the Death Anxiety Questionnaire (DAQ), the Nature Relatedness Scale (NR-6), the Multidimensional Scale of Perceived Social Support (MSPSS), as well as the Perceived Stress Scale (PSS-10).

3.3.1 Demographic Information

Participant's personal information was collected which includes age, gender identity, nationality, race, and employment status. These demographic variables were included to provide additional context for interpreting the results and to examine whether individual differences might influence the relationships among the study variables.

3.3.2 Death Anxiety Questionnaire (DAQ)

Participant's level of death-related anxiety was measured using the Death Anxiety Questionnaire (DAQ), a scale created by Conte et al. (1982). The measure is composed of 15 items, and responses are scored on a 3-point Likert-type scale, where 0 (Not at all) to 2 (Very much). Example items included "*Do you worry about dying?*" and "*Do you worry that dying may be very painful?*" sum of all items to obtain the total score, with higher scores reflecting stronger fear and anxiety related to death. Conte et al. (1982) suggest that the DAQ possesses acceptable internal reliability, as reflected by Cronbach's alpha coefficient of .83.

3.3.3 Nature Relatedness Scale (NR-6)

The Nature Relatedness Scale (NR-6), created by Nisbet and Zelenski (2013), was used to measure individual's sense of connection with the natural environment. A 5-point Likert scale was employed in NR-6, with 1 denoting Disagree strongly and 5 denoting Agree strongly. Example items included "*My ideal vacation spot would be a remote, wilderness area*" and "*My relationship to nature is an important part of who I am.*"

Total scores were obtained through summing the responses across all items, where higher scores represent a stronger nature connectedness. A Cronbach's alpha of .84 reported by Nisbet and Zelenski (2013), which indicate that a good internal consistency. Furthermore, its reliability was supported across diverse cultural contexts, with Cronbach's alpha values generally acceptable ($\alpha > .70$) across four country samples (Kövi et al., 2023), indicating consistent measurement across different backgrounds.

3.3.4 Multidimensional Scale of Perceived Social Support (MSPSS)

To assess participant's perception of social support, this study utilised the Multidimensional Scale of Perceived Social Support (MSPSS) introduced by Zimet et al. (1988). The scale consisted of 12 items divided into three subscales, with each source of support measured by four items. Example items included "*I can talk about my problems with my family,*" "*I have friends with whom I can share my joys and sorrows,*" and "*There is a special person who is around when I am in need.*" The MSPSS used a 7-point Likert scale, where 1 indicates very strongly disagree, and 7 indicates very strongly agree.

The MSPSS includes three distinct subscales: support from a significant other, family, and friends. Scores for each subscale were obtained by averaging items within the respective domain, and an overall score was calculated using the mean of all items. Higher scores represent stronger perceived social support.

The MSPSS has shown strong psychometric properties, with evidence of good internal consistency, where a Cronbach's alpha of .88 was reported (Zimet et al., 1988). In the previous study also supported its reliability, where a Cronbach's alpha of .93 reported by Song et al. (2023).

3.3.5 Perceived Stress Scale (PSS-10)

To measure the extent to which participant perceived situations in their lives as stressful, the 10 items version of Perceived Stress Scale (PSS-10) introduced by Cohen et al. (1983) was used. The instrument measured on a 5-point Likert scale, where 0 indicates "Never" and 4 indicates "Very Often". Reverse scoring was applied to four positively worded items (item 4, 5, 7 and 8). Example items included "*In the last month, how often have you been upset because of something that happened unexpectedly?*" and "*In the last month, how often have you felt nervous and stressed?*"

After reverse scoring the positively phrased items, the responses across the 10 items were summed to obtain a total score, where higher values indicate greater perceived stress. A Cronbach's alpha of .72 reported, which indicate that good internal reliability in the original study (Cohen et al., 1983). Reliability was also supported in subsequent research, with a Cronbach's alpha of .70 reported by Lee (2012).

3.4 Pilot Study

The pilot study was carried out to assess the effectiveness of the instruments and procedures before full data collection (In, 2017). According to rules of thumb, a minimum of 30 volunteers were recruited (Bujang et al., 2024; In, 2017). A total of 39 respondents were collected between January 6 to January 9, 2026, via online channels, specifically Instagram, WhatsApp, and WeChat, to guarantee that a sufficient number of authentic responses would remain following data screening. After data screening, five responses were eliminated because they failed to pass the attention-check item, did not match the inclusion criteria, or were not completed. 34 respondents' data were kept for research after these conditions were applied. IBM SPSS Statistics (Version 23) were using to conduct statistical analyses.

3.4.1 Reliability of Pilot Study

In line with the rule-of-thumb criteria (Nawi et al., 2020), the internal consistency reliability of the scales was assessed through a Cronbach's alpha. According to Cronbach's alpha, alpha values of 0.90 and above suggest excellent reliability, 0.90-0.80 indicate good, 0.80-0.70 indicate acceptable, 0.70-0.60 indicate questionable, 0.60-0.50 indicate poor, and 0.50 and below indicates unacceptable reliability. However, during a pilot study, a Cronbach's alpha of 0.60 to 0.80 is acceptable (Nawi et al., 2020; Raharjanti et al., 2022; Ramu et al., 2023).

In the pilot study, the Nature Relatedness Scale (NR-6) had a moderate reliability score of 0.643, which considered acceptable for a pilot study. The Multidimensional Scale of Perceived Social Support (MSPSS) had an excellent reliability score of 0.934; the Perceived Stress Scale (PSS-10) had a high reliability score of 0.700; and the Death Anxiety Questionnaire (DAQ) had a high reliability score of 0.828 (refer to Appendix E).

3.4.2 Background of Pilot Study's Participants

The sample consisted of 34 Malaysian participants aged between 18 and 30 years. Of the participants, 23.5% ($n = 8$) were male and 76.5% ($n = 26$) were female. The racial composition of the sample was predominantly Chinese (85.3%), followed by Malays (5.9%), Indians (5.9%), and other ethnic groups such as Dusun (2.9%). In terms of occupational status, 61.8% ($n = 21$) were university students, 8.8% ($n = 3$) were full-time employed, 26.5% ($n = 9$) were self-employed, and 2.9% ($n = 1$) were unemployed. The most represented age group was 22 years old (29.4%), followed by 21 years old (14.7%). All participants reported Malaysian nationality (100%) (refer to Table 3.1).

Table 3.1*Pilot Sample Demographics (n = 34)*

Variable	M	SD	n	%
Age	23	3	34	100.0%
Gender				
Male			8	23.5%
Female			26	76.5%
Race				
Malay			2	5.9%
Chinese			29	85.3%
Indian			2	5.9%
Others			1	2.9%
Occupation				
University Student			21	61.8%
Full time employed			3	8.8%
Part time employed			0	0.0%
Self-employed			9	26.5%
Unemployed			1	2.9%

Note. M = mean; SD = Standard Deviation; n = number of cases; % = percentage

3.5 Actual Study

The actual study was carried out with Microsoft Forms using the same procedures after the pilot study's instruments' reliability was confirmed. The initial predicted minimum required sample size of 70 participants has been exceeded by the recruitment of 150

individuals. A larger sample size was gathered to enhance statistical power and accuracy, while also accounting for possible data removal during screening.

IBM SPSS Statistics version 23 was used for data screening. Responses that were incomplete, failed to satisfy quality checks, or failed to satisfy the inclusion criteria were not included. Data from 132 participants was kept as the final sample for the actual study after these criteria were applied.

3.5.1 *Reliability of Actual Study*

In the actual study, the NR-6 had an acceptable reliability score of 0.787. The MSPSS had an excellent reliability score of 0.93; the PSS-10 had a good reliability score of 0.727; and the DAQ had an acceptable reliability score of 0.898 (refer to Appendix E).

Table 3.2

Reliability of Instrument

Scale	No of item	Cronbach Alpha	
		Pilot study (n=34)	Actual study (n=132)
Nature Relatedness Scale (NR-6)	6	0.643	0.787
Multidimensional Scale of Perceived Social Support (MSPSS)	12	0.934	0.93
Perceived Stress Scale (PSS-10)	10	0.7	0.727
Death Anxiety Questionnaire (DAQ)	15	0.828	0.898

3.6 **Data Collection Procedures**

The study involved an individual-based research design. Ethical clearance ensured that the study adhered to the established research protocols and prioritized the reduction of participant risk. The target population consisted of Malaysian residents ranging from 18 to 30

years old who were able to read and understand English, as the questionnaire was administered in English. Individuals who were not Malaysian citizens, were outside the specified age range, were unable to comprehend English, or failed to provide informed consent were excluded. In addition, incomplete responses were removed during the data screening process. Participation was entirely voluntary. These criteria were established to enhance the validity and appropriateness of the collected data.

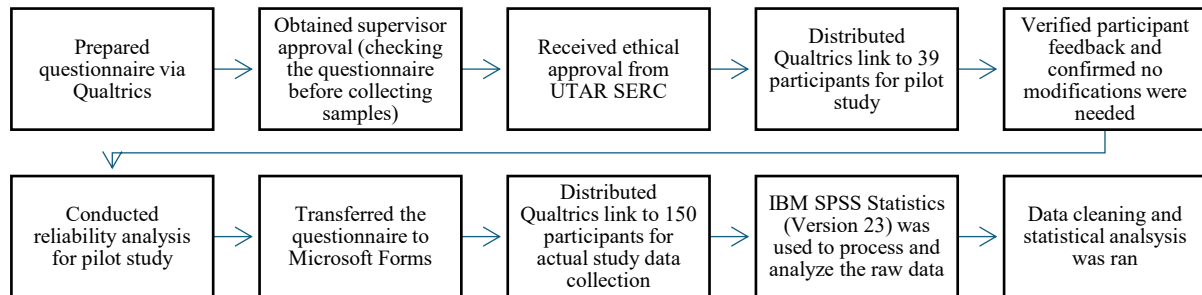
Ethical approval for this study was granted by the Scientific and Ethical Review Committee (SERC) of UTAR. After accessing the questionnaire link, participants were shown an information sheet detailing the study title, research objectives, estimated completion time, possible risks and advantages, confidentiality assurances, and the contact information of researchers. An online informed consent form was provided on the first page of the survey, participants had to first provide their consent by selecting the “I agree to participate” option before proceeding. If consent was not provided, the survey could not be accessed. Participants were also reminded of their right to terminate their involvement at any stage prior to submission without penalty. No personally identifiable data were collected, ensuring full anonymously of responses. No incentives or payment were provided to participants.

The actual study was administered via Microsoft Forms. The survey link and QR code were distributed through multiple online platforms, including Microsoft Teams, WhatsApp, WeChat, Facebook, Instagram, and Xiaohongshu, to reach the intended population. The questionnaire consisted of an initial consent form, followed by a demographic section and standardized scales measuring nature connectedness, perceived social support, perceived stress, and death anxiety. Participants were encouraged to answer based on their subjective perceptions that reflected their individual experiences. The completion time for the questionnaire was approximately 15 minutes. After submission, participants received an on-

screen message expressing appreciation for their participation. The actual data collection period commenced on 16 January 2026 and concluded on 8 February 2026, spanning a total of 24 days. Data were gathered at a single time point using a cross-sectional design.

Figure 3.1

Flow chart outlining the overall research process.



3.7 Data Analysis Procedure

IBM SPSS Statistics Version 23 was utilised to analyse the collected data. Prior to data analysis, the dataset was screened to ensure the accuracy and quality of the responses. The attention-check item was included to ensure the quality and attentiveness of responses, thereby reducing the need for extensive deletion of responses due to outliers or missing data (Shamon & Berning, 2018). Responses that failed the attention-checking item were removed from the dataset. Specifically, participants were required to select the specified option “4 = Very Often”. Responses that did not select the correct option were considered inattentive and were excluded from further analysis. An overview of the sample characteristics and study variables was obtained through descriptive statistical analysis. For demographic characteristics, frequencies, total number of cases, and percentages were calculated. For topic-specific variables, the minimum and maximum values, mean and standard deviation were computed to describe the levels of the variables measured in current study. Prior to conducting inferential statistical analyses, the distribution of the data was examined to ensure

that the assumptions of parametric tests were met. Several normality assessment methods were used, including histogram inspection, the Kolmogorov–Smirnov test, a Quantile-Quantile (Q-Q) plot, and skewness and kurtosis values. To investigate the research questions, inferential statistical methods were applied. Relationships among the study variables (Research Questions 1–5) were assessed using Pearson correlation analysis. In addition, for Research Questions 6 and 7, mediation analysis was conducted using the PROCESS macro (Model 4) developed by Andrew F. Hayes to examine whether the mediator variable produced direct and indirect effects on the relationships among the variables (Gülertekin & Genç, 2021). A significance level of $p < .05$ was used for all statistical analyses.

Chapter IV

Result

4.1 Data Screening

Data screening was conducted prior to analysis to ensure the quality and accuracy of the dataset. This process involved examining the data for potential issues such as missing values, outliers, and violations of normality assumptions (Abubakar et al., 2017). Missing data may occur due to factors such as technical issues or participants' unwillingness to disclose certain information (Ranganathan & Hunsberger, 2024). No treatment or imputation processes were necessary since no missing data were found. Data points that are significantly higher or lower than other values are known as outliers, and they may influence the reliability and validity of the findings (Staff, 2025). In this study, no cases were removed based on outlier screening, as responses that passed the attention check were considered valid for analysis.

4.1.1 Post Data-Collection Exclusion of Participants

Based on predefined exclusion criteria and attention check processes, a total of eighteen responses were removed from the dataset. In particular, 3 respondents who chose "I disagree, my personal data will not be processed" in the consent section were eliminated since they did not provide consent to participate. In addition, to assess response attentiveness, the PSS-10 included an item directing participants to choose a specific response option. This single attention check was considered sufficient because it is included within the main questionnaire and directly assesses participants' attentiveness while responding to questionnaire items. 15 respondents were eliminated after failing this attentiveness test. After applying these data screening and cleaning procedures, 132 responses from the initial 150

were retained as the final sample. Including this attention check helps ensure the reliability and quality of the collected data.

4.1.2 Data Transformation

In order to ensure internal consistency and avoid misinterpretation of the results, reverse coding is a data transformation method that recodes negatively worded items in a scale so that their score direction aligns with positively worded items (Carlson et al., 2011). Items 4, 5, 7, and 8 of the PSS-10 were reverse coded in this study. A score of 0 was recoded as 4, 1 as 3, 2 as 2, 3 as 1, and 4 as 0. Following reverse coding, the scale's mean and total scores were computed for use in subsequent analysis.

4.2 Test of Normality

A normality test was performed to verify that the data met the necessary assumptions for further analysis (Mishra et al., 2019). This involved five different methods, including histograms, Quantile-Quantile (Q-Q) plot, skewness, kurtosis, as well as the Kolmogorov-Smirnov (K-S) test.

4.2.1 Histogram

A histogram provides a graphic illustration of the frequency distribution of a variable in a bar chart form. It portrays the range, magnitude, central tendency, and spread of the data to allow identifying patterns and assess normality of the distribution (Hair et al., 2010). The histograms for nature connectedness and death anxiety indicate a normal distribution as it exhibits a bell-shaped curve and have a symmetric distribution around the mean (refer to Appendix G). In addition, while the distributions for perceived social support together with perceived stress show a slight negative skew with peaks clustered toward the right, the statistical indices for skewness and kurtosis remain within an acceptable range (refer to Table 4.1). Therefore, the data is considered to reasonably approximate normality.

4.2.2 *Quantile-Quantile (Q-Q) Plot*

A quantile-quantile (Q-Q) plot is a kind of graphical tool used to assess normality by mapping the sample quantiles against those of a standard normal curve (Yang & Berdine, 2021). In a normally distributed dataset, the points will cluster near and form a straight diagonal line. The Q-Q plots for nature connectedness, perceived social support, perceived stress, and death anxiety show that the data points nearly align with the diagonal line. This implies that the criteria for normality were satisfied for all variables included in the analysis (refer to Appendix H).

4.2.3 *Skewness and Kurtosis*

Skewness is a measurement of the symmetry of a distribution, where values that fall between -1 and +1 indicate normally distributed data (Hair et al., 2010). A score of zero represents a perfectly symmetrical result. In contrast, positively skewed distributions are characterized by a data extension toward the right, whereas negatively skewed distributions possess a data extension toward the left. Kurtosis is a measure of the tail heaviness of a distribution benchmarked against a normal distribution (Mishra et al., 2019). An excess kurtosis value of zero demonstrates that the extremities of the distribution are consistent with those of a standard curve. However, following the criteria proposed by George and Mallery (2010), any kurtosis value occurring within the interval of -2 and +2 range is deemed acceptable for a normal distribution. For this study, the value of skewness and kurtosis for all variables lie within these recommended ranges, indicating a normal distribution of the data (refer to Table 4.1).

Table 4.1*Skewness and Kurtosis*

Variables	Skewness	Kurtosis
Nature Connectedness	-.18	-.35
Perceived Social Support	-.53	.33
Perceived Stress	-.49	.30
Death Anxiety	.21	-.68

4.2.4 Kolmogorov-Smirnov Test

A Kolmogorov-Smirnov (K-S) test compares the actual cumulative distribution of a sample with a theoretical cumulative distribution (Ghasemi & Zahediasl, 2012). It identifies the maximum discrepancy between the two distributions to assess normality. When $p > .05$, the K-S test suggests that the data are not significantly different from a normal distribution (Mishra et al., 2019).

In the study, perceived social support, $D(132) = .06$, $p = .20$, and death anxiety, $D(132) = .07$, $p = .20$, were not significant, indicating that it satisfies the normality assumption. Conversely, nature connectedness, $D(132) = .10$, $p < .01$, and perceived stress, $D(132) = .12$, $p < .01$, were significant, indicating a violation of normality (refer to Table 4.2).

Table 4.2*Kolmogorov-Smirnov Test*

Variable	p-value
Nature Connectedness	.00*
Perceived Social Support	.20
Perceived Stress	.00*
Death Anxiety	.20

*violation of K-S tests

4.2.5 Conclusion of Normality Assumption

After testing for normality across all variables, the results indicate that perceived social support and death anxiety met all five criteria for normality. While nature connectedness and perceived stress met only four criteria by showing a violation in the K-S test, it has been noted that the K-S test is highly sensitive to sample size and often has low statistical power (Field, 2018). Therefore, the K-S test should not be the sole factor in determining normality. Given that the histograms, Q-Q plots, and skewness and kurtosis indices for these variables were all within acceptable ranges, the normality assumption is considered to be achieved for all variables in this study.

4.3 Descriptive statistics

4.3.1 Demographic Characteristics

The final sample consisted of 132 Malaysian participants aged between 18 and 30 years. In terms of gender distribution, 33.3% ($n = 44$) were male and 66.7% ($n = 88$) were female. Regarding racial composition, the majority of participants were Chinese, accounting for 75.8% ($n = 100$), followed by Malays at 15.2% ($n = 20$) and Indians at 9.1% ($n = 12$). This indicates that the sample was heavily skewed toward Chinese participants, which may

limit the representativeness of the findings for other racial groups. Based on occupational status, most participants were students, representing 72.7% ($n = 96$) of the sample. The overrepresentation of students suggests that the results may not fully generalize to non-student populations. This was followed by full-time employees at 18.2% ($n = 24$), part-time employees at 4.5% ($n = 6$), and unemployed individuals at 3% ($n = 4$). 1.6% ($n = 2$) of participants were self-employed individuals. In terms of age distribution, the largest proportion of participants was 23 years old, accounting for 23.5% of the sample.

Table 4.3

Participants Demographics (n=132)

Variable	M	SD	n	%
Age	23	2.689	132	100.0%
Gender				
Male			44	33.3%
Female			88	66.7%
Race				
Malay			20	15.2%
Chinese			100	75.8%
Indian			12	9.1%
Occupation				
University Student			96	72.7%
Full time employed			24	18.2%
Part time employed			6	4.5%
Self-employed			2	1.6%
Unemployed			4	3.0%

Note. M = mean; SD = Standard Deviation; n = number of cases; % = percentage

4.3.2 Frequency distribution of understudied variables

Table 4.4 presents the descriptive statistics for each variable. The independent variables included nature connectedness ($M = 21$, $SD = 4$) and perceived social support ($M = 58$, $SD = 13$). The mediator was perceived stress ($M = 21$, $SD = 5$), and the dependent variable was death anxiety ($M = 15$, $SD = 8$).

Table 4.4

Descriptive Statistics for Variables (n=132)

Variable	M	SD	Minimum	Maximum
Nature Connectedness	21	4	9	30
Perceived Social Support	58	13	16	84
Perceived Stress	21	5	4	34
Death Anxiety	15	8	0	30

Note. M = mean; SD = Standard Deviation

4.4 Correlation Analysis

Pearson product-moment correlation analysis was used in this study to address the research questions regarding the relationships among nature connectedness, perceived social support, perceived stress, and death anxiety. The Pearson Correlation Coefficient is a statistical method commonly applied to assess both the degree and direction of relationships between variables measured on a continuous scale (Rovetta, 2020). The correlation coefficient (r) varies between -1 and +1, with values approaching either extreme reflecting a stronger relationship between variables (Janse et al., 2021). The strength of the relationships was interpreted based on the effect size guidelines suggested by Cohen, where r values of 0.10 indicate small effects, 0.30 indicate moderate effects, and 0.50 indicate large effects

(Weinerová et al., 2022). In the present study, correlations were considered statistically significant if $p < .05$ (Janse et al., 2021).

In the present study, correlation analysis was performed to evaluate the five proposed hypotheses ($H1-H5$). As shown in Table 4.5, perceived stress was found to have a significant moderate positive correlation with death anxiety ($r = .36, p < .01$). This revealed that among young adults in Malaysia, higher levels of perceived stress were related to higher levels of death anxiety, supporting $H3$. Additionally, perceived social support showed a weak negative relationship with perceived stress ($r = -.18, p < .05$), suggesting that greater perceived social support is associated with lower perceived stress levels. Thus, $H5$ was supported. On the other hand, no significant associations were observed between nature connectedness and death anxiety, perceived social support and death anxiety, or nature connectedness and perceived stress ($p > .05$). Therefore, $H1, H2$, and $H4$ were not supported (refer to Appendix I).

In conclusion, as shown in Table 4.5, $H3$ and $H5$ were supported in this study. While $H1, H2$, and $H4$ were not supported in the present study.

Table 4.5

Pearson Correlations Among Nature Connectedness, Perceived Social Support, Perceived Stress, and Death Anxiety ($n = 132$)

	1	2	3	4
1. Nature Connectedness	1			
2. Perceived Social Support	.10	1		
3. Perceived Stress	-.11	-.18*	1	
4. Death Anxiety	.05	.00	.36**	1
<i>Mean</i>	20.91	57.78	21.36	14.79
<i>Standard Deviation</i>	4.10	13.35	5.27	7.56

*. Correlation is significant at the .05 level (2-tailed).

**. Correlation is significant at the .01 level (2-tailed).

4.5 Mediation Analysis

4.5.1 Mediation Models

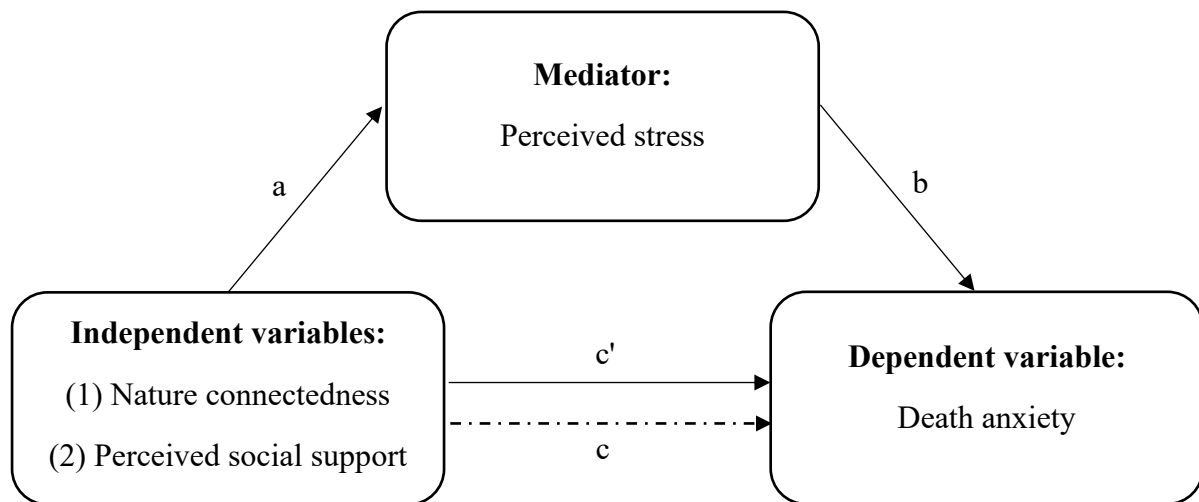
To test the proposed mediation model, Hayes' PROCESS macro (Model 4) was utilised to investigate whether perceived stress mediates the relationships between nature connectedness, perceived social support, and death anxiety (Abu-Bader & Jones, 2021). This approach was selected to test a simple mediation framework, in which an independent variable affects a dependent variable indirectly through a mediating variable (Abu-Bader & Jones, 2021).

In the present study, the PROCESS macro was used to test *H6* and *H7*. Two mediation models were tested: (i) nature connectedness $\rightarrow$ perceived stress $\rightarrow$ death anxiety (*H6*), and (ii) perceived social support $\rightarrow$ perceived stress $\rightarrow$ death anxiety (*H7*)

In the mediation model, four pathways are examined. Path *a* indicates the relationship from the independent variable to the mediator, while path *b* captures the effect of the mediator on the dependent variable after statistically adjusting for the independent variable. Path *c* indicates the total effect, whereas path *c'* represents the direct effect once the mediator is taken into consideration. The indirect effect is obtained by multiplying paths *a* and *b* (Preacher & Hayes, 2004). The conceptual model is illustrated in Figure 4.1. For this study, indirect effects were tested using a bootstrapping procedure based on 5,000 resampled datasets to obtain bias-corrected 95% confidence intervals (Abu-Bader & Jones, 2021). A significant mediation effect was indicated when zero was excluded from the confidence interval of the indirect effect (Abu-Bader & Jones, 2021).

Figure 4.1

Mediation model showing paths a, b, c, and c'.



4.5.2 Assumptions for Mediation Analysis

Before conducting the mediation analyses, the assumptions underlying them were examined. Several assumptions must be satisfied, including appropriate levels of measurement, linearity, normality, homoscedasticity, and normality of residuals (Abu-Bader & Jones, 2021).

Level of Measurement. All variables in the present study were continuous and measured at the interval level, satisfying the requirement for mediation analysis.

Linearity. Linearity was assessed through visual inspection of scatterplots (Abu-Bader & Jones, 2021). The plots showed weak positive or negative trends for some variable pairs, but no strong curvilinear patterns were observed. Therefore, the assumption of linearity was considered adequately met for both mediation models (refer to Appendix J).

Normality. The normality assumption of the study variables was examined using the normality test results reported in Section 4.2. According to the results, the normality assumption was satisfied for all variables based on multiple normality indicators, suggesting that no violation of the normality assumption was present.

Homoscedasticity. Homoscedasticity was assessed for the first model (Nature Connectedness → Perceived Stress → Death Anxiety). Assessment of the standardized residuals-versus-predicted values scatterplot showed that the data points were randomly scattered around the horizontal zero line. A consistent spread of residuals was reflected by the lack of any noticeable funnel shape or systematic pattern (refer to Appendix K). Similarly, for the second model (Perceived Social Support → Perceived Stress → Death Anxiety), the scatterplot showed an even distribution of residuals across predicted values (refer to Appendix K). Thus, these patterns suggest that the assumption of homoscedasticity was satisfied for both models.

Normality of Residuals. The assumption of normally distributed residuals was evaluated through the use of histograms and P–P plots of the standardized residuals to evaluate whether the regression residuals followed a normal distribution (Abu-Bader & Jones, 2021). For the mediation model examining nature connectedness, perceived stress, and death anxiety, the histogram of standardized residuals approximated a normal distribution (refer to Appendix L). Similarly, the histogram for the model involving perceived social support also demonstrated a distribution resembling a normal bell curve (refer to Appendix L). In addition, the normal P–P plots for both models demonstrated that the residual points were closely aligned with the diagonal reference line, suggesting no major deviation from normality (refer to Appendix L). Overall, these findings support the application of regression-based mediation analysis by showing that the residuals' normality assumption was met.

4.5.3 *Mediation Analysis Results*

Table 4.6 presents the mediation results for *H6*. Nature connectedness did not significantly predict perceived stress (path a), $b = -.14$, $SE = .11$, $t = -1.25$, $p = .21$. However, perceived stress significantly predicted death anxiety (path b), $b = .52$, $SE = .12$, $t = 4.43$, $p < .001$, indicating a moderate effect size ($\beta = .37$). No significant total effect was observed

between nature connectedness and death anxiety (path c), $b = .09$, $SE = .16$, $t = .58$, $p = .56$. Similarly, the direct effect (path c') was also not significant, $b = .17$, $SE = .15$, $t = 1.10$, $p = .27$. The indirect effect of nature connectedness on death anxiety through perceived stress was $b = -.07$. Bootstrapping with 5,000 resamples indicated that the indirect effect was found to be not statistically significant (95% CI [-.23, .06]) (refer to Appendix M). Therefore, the association between nature connectedness and death anxiety was not mediated by perceived stress.

The second mediation analysis result for *H7* is demonstrated in Table 4.7. Perceived social support significantly predicted perceived stress (path a), $b = -.07$, $SE = .03$, $t = -2.07$, $p < .05$, with a small effect size ($\beta = -.18$). Perceived stress also significantly predicted death anxiety (path b), $b = .53$, $SE = .12$, $t = 4.40$, $p < .001$, with demonstrating a moderate effect size ($\beta = .37$). However, the total effect of perceived social support on death anxiety (path c) was not significant, $b = .00$, $SE = .05$, $t = .04$, $p = .97$, and the direct effect (path c') was also not significant, $b = .04$, $SE = .05$, $t = .83$, $p = .41$. The point estimate for the indirect effect of perceived social support on death anxiety through perceived stress was $-.04$. Bootstrapping with 5,000 resamples showed that the effect of perceived social support on death anxiety through perceived stress was not statistically significant (95% CI [-.09, .00]). Furthermore, a suppression effect was observed where the negative indirect effect of $-.04$ and the positive direct effect of $.04$ cancelled each other out, resulting in a total effect of $.00$. Therefore, perceived stress did not significantly mediate the relationship between perceived social support and death anxiety among young adults in Malaysia (refer to Appendix M).

Overall, as presented in Table 4.6, both the *H6* and *H7* were not supported in the current study.

Table 4.6*Perceived Stress as a Mediator of Nature Connectedness and Death Anxiety*

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>95% Confidence Interval</i>	
					Lower	Upper
a: Nature Connectedness → Perceived Stress	-.14	.11	-1.25	.21	-	-
b: Perceived Stress → Death Anxiety	.52	.12	4.43	< .001	-	-
c: Total effect	.09	.16	.58	.56	-	-
c': Direct effect	.17	.15	1.10	.27	-	-
Indirect effect (a*b)	-.07	.07	-	-	-.23	.06

b = unstandardized regression coefficient; *SE* = standard error; *t* = t-value; *CI* = confidence interval.

Bootstrapped CI based on 5,000 resamples.

Table 4.7*Perceived Stress as a Mediator of Perceived Social Support and Death Anxiety*

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>95% Confidence Interval</i>	
					Lower	Upper
a: Perceived Social Support → Perceived Stress	-.07	.03	-2.07	< .05	-	-
b: Perceived Stress → Death Anxiety	.53	.12	4.40	< .001	-	-
c: Total effect	.00	.05	.04	.97	-	-
c': Direct effect	.04	.05	.83	.41	-	-
Indirect effect (a*b)	-.04	.02	-	-	-.09	.00

b = unstandardized regression coefficient; *SE* = standard error; *t* = t-value; *CI* = confidence interval.

Bootstrapped CI based on 5,000 resamples.

Table 4.8*Summary of Hypothesis Testing Results*

Hypotheses	Decision
<i>H1</i> : Nature connectedness is negatively associated with death anxiety among young adults in Malaysia	Not supported
<i>H2</i> : Perceived social support is negatively associated with death anxiety among young adults in Malaysia	Not supported
<i>H3</i> : Perceived stress is positively associated with death anxiety among young adults in Malaysia	Supported
<i>H4</i> : Nature connectedness is negatively associated with perceived stress among young adults in Malaysia	Not supported
<i>H5</i> : Perceived social support is negatively associated with perceived stress among young adults in Malaysia	Supported
<i>H6</i> : Perceived stress mediates the relationship between nature connectedness and death anxiety among young adults in Malaysia	Not supported
<i>H7</i> : Perceived stress mediates the relationship between perceived social support and death anxiety among young adults in Malaysia	Not supported

Chapter V

Discussion and Conclusion

5.1 Discussion of Findings

5.1.1 *Nature Connectedness and Death Anxiety*

This section addresses *RQ1*, which examines whether nature connectedness is related to death anxiety. The present study hypothesized that nature connectedness would be negatively associated with death anxiety. However, this hypothesis was not supported, as no significant relationship was observed, which is inconsistent with the assumptions of TMT. One possible explanation is that the assumptions of TMT may not operate uniformly across cultural contexts. According to Soga and Gaston (2025), people's connection to nature differs significantly across countries and is influenced by broader national factors such as socioeconomic development and environmental conditions. Additionally, different cultures may interpret death in distinct ways. According to Gonçalves et al. (2023), Eastern cultures tend to adopt a more accepting attitude toward death, often perceiving it as part of the natural life cycle. This suggests that individuals may not interpret nature connectedness and death in the same way across cultures, which could weaken the expected relationship between these variables.

Consistent with this explanation, cross-national findings have reported mixed results. For example, Vowinckel et al. (2025) found a significant negative relationship between nature connectedness and death anxiety in Canada, whereas the relationship was weak and non-significant in Japan. These inconsistencies suggest that the relationship between nature connectedness and death anxiety may vary depending on cultural context and how individuals interpret nature and death-related concepts.

Notably, the Japanese sample reported a similarly weak and non-significant relationship, which aligns with the current findings. This similarity may reflect shared

cultural characteristics, as both Japan and Malaysia are generally considered collectivistic societies. Previous research suggests that collectivistic cultures tend to report stronger death anxiety (Plusnin et al., 2021). However, collectivism alone may not sufficiently explain the extremely weak relationship between nature connectedness and death anxiety observed in the present study.

One possible reason is that collectivistic societies are often characterized by stronger social cohesion. Individuals who experience higher levels of social cohesion may develop stronger connections with nature and derive greater value from natural environments (Oh et al., 2022). Such factors could theoretically strengthen the relationship between nature connectedness and psychological outcomes. However, structural factors such as urbanization may also influence how individuals experience and interact with nature. Previous research has shown that limited exposure to natural environments is linked to reduced human–nature connectedness, particularly among people living in highly urbanised societies. As a highly urbanized country, Japan may therefore differ from Malaysia in the ways individuals perceive and derive psychological value from nature. Consequently, nature connectedness may not function as a strong existential buffer against death anxiety in these contexts, which may partially explain the weak and non-significant relationship observed in both the Japanese sample and the current Malaysian sample.

Additionally, an experimental study from Das et al. (2024) has shown that death anxiety can decrease following short-term interventions, which aligns with the hypothesized relationship but contrasts with the current results. This suggests that the influence of nature connectedness on death anxiety may require active engagement or experimental manipulation to manifest, allowing individuals to reflect more deeply on the meaning of life (Das et al., 2024). This raises the possibility that cross-sectional measures of nature connectedness may not capture experiential or reflective aspects necessary to influence death anxiety.

Experimental designs allow researchers to manipulate variables and establish examine the mechanisms (Sreekumar, 2025), whereas cross-sectional designs can only examine the relationship at a single point in time (Cherry, 2025). Furthermore, previous studies have largely examined related constructs rather than directly investigating the relationship between nature connectedness and death anxiety. This partially explain the limited empirical evidence and inconsistent findings of previous study.

The present study aimed to examine the relationship between nature connectedness and death anxiety among Malaysian young adults. Contrary to the hypothesis and the assumptions of TMT, the findings revealed no significant relationship between these two variables. This may imply that nature connectedness is not a particularly strong existential protective factor against death anxiety in the present sample. Several factors may explain this outcome. Cultural differences in how individuals interpret death and nature may weaken the expected relationship, as attitudes toward death can vary across societies. Additionally, cross-national evidence indicates that the association between nature connectedness and death anxiety is inconsistent across countries. Methodological factors may also contribute to the findings, as cross-sectional designs may not capture the experiential or reflective processes through which nature connectedness could influence existential concerns. Future research is encouraged to use experimental or longitudinal methodologies to better investigate the mechanisms underlying this relationship. Overall, the present study contributes to the limited research study on nature connectedness and death anxiety by providing evidence from a Malaysian context and highlighting the potential role of cultural and methodological factors in shaping this relationship.

5.1.2 Perceived Social Support and Death Anxiety

This section addresses *RQ2*, which examines the relationship between perceived social support and death anxiety among Malaysian young adults. This study hypothesized

(*H2*) a negative association between these variables. However, the findings of this study did not support *H2*. The correlation between perceived social support and death anxiety was not statistically significant and negligible in magnitude ($r = .00, p > .05$), suggesting that perceived social support was not meaningfully associated with death anxiety in this sample. This finding contrasts with previous research, often grounded in the TMT, which consistently posited that perceived social support functions as a psychological buffer against death anxiety (Hamidi et al., 2024; Yu et al., 2025). Nevertheless, the present finding indicates that this protective role may not generalise uniformly across all populations, particularly among Malaysian young adults.

One possible explanation relates to cultural differences in how social support functions in Malaysia. Evidence from Jobson et al. (2023) has shown that explicit forms of social support, such as directly seeking help, may not be strongly associated with lower psychological distress in the Malaysian context, as individuals may avoid burdening others or disrupting interpersonal harmony. Instead, support from family and mutually reciprocal relationships appear more relevant for mitigating distress. This suggests that the benefits of social support in Malaysia may depend more on specific relational contexts and mutual exchange, rather than functioning as a direct psychological buffer. Consequently, general perceptions of support may not align with culturally meaningful forms of support, potentially weakening its association with internal distress. This misalignment may be particularly pronounced in relation to death-related issues, as discussions about death are often avoided to maintain social harmony, thereby limiting the extent to which support is expressed or utilised in this study context.

This cultural pattern is also reflected in the measurement approach adopted in this research. This study employed the MSPSS, which assesses overall perceptions of support from different sources (Zimet et al., 1988). However, it does not distinguish between

culturally relevant types of support, such as implicit versus explicit support or mutual versus non-mutual interactions. As a result, the MSPSS may not have fully captured forms of support that are most protective against death anxiety, which may partially explain the absence of a significant relationship.

This interpretation is further supported by the descriptive pattern observed in the data. The overall level of perceived social support appeared to fall within a moderate range ($M = 58$, $SD = 13$) (Gautam & Satyal, 2025), suggesting that participants generally perceived themselves as having some level of support. However, this moderate level of perceived support was not significantly associated with lower levels of death anxiety. This further supports the notion that the presence of perceived support alone may not be sufficient to relate to existential concerns such as death anxiety in this study context.

Population characteristics may also influence the observed association. The sample consisted predominantly of university students, for whom death-related concerns may be more abstract than immediate. Although young adults may demonstrate cognitive awareness of mortality, their death anxiety may not be highly emotionally salient (Yu et al., 2025), which could reduce reliance on social support as a coping mechanism. This aligns with TMT, which posits that death anxiety is more pronounced under heightened mortality salience (Pyszczynski et al., 2021). Prior studies that reported significant negative associations often examined clinical or high-risk populations, where death is more immediate and support may play a stronger role (Bennett et al., 2025; Hamidi et al., 2024; Qayyum et al., 2023).

Finally, the relationship between social support and death anxiety may be complex and linked to other psychological factors. For example, Huang et al. (2022) suggested that meaning in life and self-esteem may mediate how support relates to existential concerns. In this context, social support may be linked to strengthening internal psychological resources, which in turn help individuals manage existential concerns. Overall, although social support

is widely recognised as a protective factor, the present findings show no significant association between perceived social support and death anxiety, suggesting that this relationship with death anxiety among Malaysian young adults could be explained by cultural norms, measurement limitations, and the characteristics of the population studied.

5.1.3 *Perceived Stress and Death Anxiety*

A significant positive relationship was identified connecting perceived stress and death anxiety within the Malaysian young adult population. Therefore, the results suggest that *H3* is supported. This demonstrates that individuals experiencing higher perceived stress also tend to report greater levels of death anxiety. This consistency of this result to previous research conducted in Western and Middle Eastern countries (Gelen et al., 2022; Koç & Başgöl, 2022; Joneghani & Sajjaian, 2023; Qayyum et al., 2023) implies that how stress interpretation and the fear of death is similar across many demographics. This could represent a more general psychological phenomenon that affects young adults in Malaysia.

TMT could be used to explain the result. According to Pyszczynski et al. (2021), individuals typically cope with the terror of death through psychological buffers such as cultural worldviews and self-esteem. Abdollahi et al. (2019) reported that self-transcendence promotes more positive evaluation of spirituality, meaning of life, and purpose, thereby lowers perceived stress and death anxiety. On the other hand, high stress level weakens these defence mechanisms and increase state rumination that results to a rise in death anxiety (Feng et al., 2024; Gil et al., 2023; Hosseini et al., 2025). This present finding suggests that the daily stressor experienced by Malaysian young adults may also weaken these buffers and increase death anxiety.

The cognitive mechanisms behind this relationship are explained by the TMSC in addition to TMT. The paradigm proposes that stress is outcome of how individuals appraise their challenges and available resources to manage it (Spătaru et al., 2024). For young adults

in Malaysia, if they perceive their daily stressors as overwhelming and believe they lack the resources to cope, it weakens their sense of personal control. This aligns with research that shows that persons who fail to cope with adaptive methods on existential issues view their resources as insufficient and have higher levels of death anxiety (Besharat et al., 2020; Chodkiewicz et al., 2021). Based on TMT, this loss of control leaves them susceptible to mortality concern because it breaks down their psychological defences against existential fears (Hosseini et al., 2025). As a result, it escalates everyday stress into death anxiety.

5.1.4 *Nature Connectedness and Perceived Stress*

This section addresses *RQ4*, which examines whether nature connectedness is related to perceived stress. There are no significant relationship between nature connectedness and stress among Malaysian young adults, thus failing to support *H4*. This finding is inconsistent with previous studies suggesting that exposure to natural environments enhances nature connectedness and reduces perceived stress (Baceviciene & Jankauskiene, 2022; Zhou et al., 2025), even though these studies also employed cross-sectional designs.

One possible explanation for the discrepancy between previous findings and the present study lies in differences in theoretical frameworks. In the current study, nature connectedness was conceptualized as a personal trait reflecting a stable psychological resource, align to the TMSC, which highlight cognitive appraisal and coping processes (Berto, 2014). Individuals with higher trait-level nature connectedness are theoretically expected to derive long-term psychological benefits from their connection to nature, potentially mitigating perceived stress. However, the current study observed a weak and non-significant relationship, which contrasts with the findings of many prior studies (Baceviciene & Jankauskiene, 2022; Lau et al., 2023; Zhou et al., 2025). These previous studies were largely grounded in Stress Recovery Theory (SRT), which posits that interacting with natural environments may help restore psychological and physiological functioning in the short term

by fostering relaxation and positive emotional states. (Awada et al., 2023). Importantly, SRT assumes that nature can reduce stress when individuals are actively exposed to natural environments, which is why most of the research employed experimental or short-term interventions to test nature connectedness (Riches et al., 2023; Yin et al., 2019). Such designs allow participants to directly experience the restorative effects of nature, often producing significant reductions in stress. In contrast, trait-level nature connectedness measured in cross-sectional surveys may be difficult to capture these immediate restorative processes. Therefore, differences in theoretical assumptions and methodological approaches may help explain why the present study did not find a significant relationship between nature connectedness and perceived stress.

In addition, methodological differences may further explain the divergence in results. Many studies that reported a significant negative relationship between nature connectedness and perceived stress adopted experimental or intervention-based designs, in which participants were actively exposed to natural environments (Bakir-Demir et al., 2021; Johansson et al., 2022; Lau et al., 2023; Yang et al., 2024). For instance, Yang et al. (2024) and Lau et al. (2023) required participants engage in nature-based activities, with stress levels measured before and after the intervention, consistently finding that greater nature connectedness was reducing perceived stress. Similarly, studies using virtual reality (VR) exposure to nature have demonstrated that even simulated contact with nature can enhance nature connectedness and reduce perceived stress (Chan et al., 2021; Reese et al., 2022; Fan & Baharum, 2024). These findings suggest that the stress-reducing effects of nature connectedness may require active engagement or experiential exposure, which cannot be captured in cross-sectional designs.

However, not all intervention-based studies have found consistent results. For example, Djernis et al. (2025) reported that working in a natural environment did not

significantly reduce stress. This inconsistency may be attributed to contextual differences, as their study involved office workers performing tasks in a forest setting, whereas other studies typically required participants to immerse themselves in nature without work-related demands. This suggests that the effectiveness of nature connectedness in reducing stress may depend on situational factors.

Furthermore, differences in sample characteristics may also account for the inconsistent findings. According to Johansson et al. (2022), study demonstrating stress reduction through nature-based interventions focused on individuals with stress-related conditions, whereas the present study examined a general population of young adults aged 18 to 29. This sample included a diverse range of roles, including students and working individuals, with multiple potential sources of stress such as academic demands, social relationships, and career-related concerns. As a result, the influence of trait-level nature connectedness on perceived stress may be relatively weak in this population, contributing to the weak and non-significant relationship observed in the present study. These findings indicate that the relationship between nature connectedness and stress may be more pronounced in clinical or high-stress populations. Taken together, these findings suggest that the relationship between nature connectedness and perceived stress is complex and may be influenced by contextual factors, and individual differences.

The present study shows no significant relationship between nature connectedness and perceived stress among Malaysian young adults, thus failing to support *H4*. This finding contrasts with previous research suggesting that nature connectedness can reduce stress. The discrepancy may be attributed to differences in theoretical perspectives, methodological approaches, and sample characteristics. In particular, cross-sectional design and a general young adult population may have limited the observable effect of nature connectedness on

perceived stress. Overall, the findings suggest that the relationship between nature connectedness and stress is complex and may vary across contexts and populations.

5.1.5 Perceived Social Support and Perceived Stress

Results from this study show that *H5* was supported, as perceived social support was significantly and negatively associated with perceived stress among Malaysian young adults ($r = -.18, p < .05$). This inverse relationship suggests that increased perceived social support is linked to reduced levels of perceived stress. This finding is consistent with prior research conducted in different cultural contexts, where similar inverse relationships between social support and stress have been observed (McLean et al., 2022; Suwinyattichaiorn & Johnson, 2022; Szkody et al., 2021). However, the strength of this relationship was weak, suggesting that perceived social support accounts for only a small proportion of the variance in stress within this sample.

One possible explanation for the weak association may relate to the nature of stressors experienced by the present sample. As the majority of participants were university students, their stress may be predominantly influenced by situational factors such as academic workload, deadlines, and uncertainty about future career prospects. These stressors are often immediate and multifaceted, and may be influenced by a range of factors beyond social support, including time management, academic pressure, and individual coping strategies (Kavitha et al., 2025). As a result, although perceived social support is linked to lower stress levels, its relative contribution may be reduced when compared to these more direct and demanding stressors.

The weak correlation observed also contrasts with findings reported by Aziz et al. (2023), who found a moderate negative relationship between perceived social support and stress among Malaysian undergraduate students. Given that both studies utilised the same measurement instrument (MSPSS) and largely on student samples, this discrepancy suggests

that additional contextual factors, particularly differences in stress environments, may account for the difference in effect size. Notably, Aziz et al. (2023) conducted their study in the context of the COVID-19 pandemic, a period characterised by heightened stress, social isolation, and increased reliance on social support. In such conditions, social support may have played a more central role in buffering stress. In contrast, stress in the present study may be shaped by a broader range of demands, including academic workload, time pressure, and personal coping strategies, that potentially reduce the relative contribution of social support. Furthermore, Aziz et al. (2023) reported that family support demonstrated the strongest relationship with stress, suggesting that specific sources of support may exert a stronger influence than general perceptions of support examined in the present study.

Beyond these contextual explanations, the findings of this study can also be understood through the TMSC, which views stress as arising when individuals feel that the demands they face are greater than their ability to manage them (Margaret et al., 2018). In line with this model, social support functions as a critical external resource that enhances individuals' ability to cope with stressors. Specifically, social support may influence both primary appraisal by reducing perceived threat and secondary appraisal by strengthening individuals' perceived ability to cope (Margaret et al., 2018). As a result, individuals with greater perceived social support are less likely to appraise situations as overwhelming, leading to lower perceived stress. This theoretical perspective helps to explain the negative association observed in the present study, despite its relatively weak magnitude.

Overall, the findings suggest that perceived social support is significantly associated with perceived stress among Malaysian young adults, although the relationship is relatively weak and likely shaped by situational stressors, contextual conditions, and the varying role of different sources of support.

5.1.6 Perceived Stress as Mediator in the Association Between Nature Connectedness and Death Anxiety

No significant mediating effect of nature connectedness on death anxiety through perceived stress was observed within young adults in Malaysia. *H6* is therefore not supported. According to the mediation framework by Zhao et al. (2010), the mediation effect failed primarily due to the non-significance of path A for nature connectedness and perceived stress. Furthermore, nature connectedness did not indicate a significant total effect on death anxiety. Therefore, the lack of mediation in this study not merely due to the failure between mediator and the variables, but a complete independence of nature connectedness from both perceived stress and death anxiety.

Previous research suggests that nature connectedness provides mindfulness and effective emotion regulation, which in turn reduce perceived stress level (Bakir Demir et al., 2021; Menardo et al., 2022). The lack of this association in the current study suggests that nature connectedness alone may not be enough to relieve the death anxiety of young adult life in Malaysia, unless they translate into actual activities in nature that reduce stress. The findings differ from past literature likely because of environmental and lifestyle factors. A moderate level of nature connectedness ($M = 20.9$, $SD = 4.1$) suggests that while young adults appreciate nature, it is insufficient to overcome their daily stressors such as academic, interpersonal and financial stress. Also, feeling connected to nature does not always lead to actual outdoor activities. Not to mention the hot temperature and limited green spaces in urbanized areas of Malaysia might limit young adults from spending time outside. Furthermore, this Malaysian study on university students found that youth are not motivated to turn to nature for stress relief and prefer other coping mechanisms (Ahmad et al., 2024; Yeung & Yu, 2022). Therefore, since nature connectedness did not lower perceived stress, the mediation path failed to reduce death anxiety.

In addition, nature connectedness may operate through alternative mediators other than perceived stress in its potential relationship with death anxiety. Through pathways including emotion regulation, resilience, and purpose of life, nature connectedness is often associated with decreased psychological distress (Gu et al., 2023; Ma et al., 2025; Ríos-Rodríguez et al., 2024). The previous literature also demonstrates that nature connectedness may link to death anxiety in different cultures (Vowinckel et al., 2025). Therefore, rather than directly reducing death anxiety, nature connectedness may benefit young adults in Malaysia with multireligious and collectivist values through spiritual or transcendent experiences (Ahmad et al., 2024).

5.1.7 Perceived Stress as a Mediator in the Association Between Perceived Social Support and Death Anxiety

Contrary to the hypothesis, the results revealed no significant indirect pathway through perceived social support to death anxiety via perceived stress within Malaysian young adults in this study. Thus, the hypothesis for *H7* is not supported. Despite the significant associations found linking perceived social support and perceived stress, as well as between perceived stress and death anxiety, perceived stress when working as a mediator is not sufficient to mediate both variables.

The non-significant mediation suggests that while social support reduce daily perceived stress, it does not necessarily reduce death anxiety. Research reported that individuals from collectivist cultures tend to show higher levels of death anxiety compared to those from individualistic cultures (Bennett et al., 2025; Plusnin et al., 2021). Strong interpersonal relationships help people manage with stress, but close family bonds may result in fears of separation due to death. In addition, collectivist culture inhibits emotional sharing and it potentially limiting deep emotional interaction (Gao et al., 2025). Malaysian young adults are more likely to use social support to deal with daily stress but not in discussing deep

emotional topics by keeping social interactions light rather than burdening their support network with existential fears. Consequently, these result in a non-significant overall relationship.

Furthermore, the non-significant mediation effect can be explained by the cultural taboo surrounding death. A study by Ngah et al. (2025) suggests that individuals who communicate more openly about death tend to report lower levels of fear regarding death. However, in many Asian countries, the subject remains a taboo topic. According to Junxuan et al. (2024), people in China and Malaysia often use alternative expressions to avoid mentioning death due to beliefs about bad luck that creates a communication barrier within the support network by silencing conversations about death. Similarly, a mixed-method review indicates that in Taiwan and Japan, family support focuses more on providing comfort after loss rather than discussing death with younger generations (Le et al., 2025). As cultural norms discourage open discussions of death with younger generations, the social support they receive does not include existential topic. Therefore, although social support helps reduce daily stress, the silence prevents young adults from processing their fear on death and breaks the mediating pathway.

The relationship between variables in this study may operate through alternative mechanisms. Social support's influence on death anxiety may work indirectly through factors such as meaning in life or self-esteem (Huang et al., 2022). Also, previous studies have shown that perceived stress can mediate the relationship between certain psychological variables and death anxiety. For example, Joneghani and Sajjaian (2023) and Pradhan et al. (2020) reported the relationship between neuroticism and death anxiety appears to be channelled through perceived stress among women and young adults. They added that the mediating role of perceived stress may be specific to certain antecedents and may not extend to nature connectedness or perceived social support in the Malaysian young-adult context.

5.2 Implications

5.2.1 *Theoretical Implications*

The study contributes to existing literature by examining the relationships between nature connectedness, perceived social support, perceived stress, and death anxiety within the framework of TMT and TMSC. It also addresses existing knowledge gaps by providing an integrative and context-specific perspective on death anxiety among Malaysian young adults.

Primarily, the findings provide limited support for TMT, as neither nature connectedness nor perceived social support was significantly associated with death anxiety among Malaysian young adults. TMT posits that individuals rely on psychological buffers such as interpersonal relationships and meaning-providing systems to manage death-related anxiety (Dar-Nimrod, 2022). However, the absence of significant associations in the present study indicates that these proposed buffering mechanisms were not observed in this sample. This suggests that the hypothesized relationships may not operate consistently in the current population under the conditions measured, revealing that the relationships proposed by TMT may be more context-dependent than originally assumed.

Additionally, the study offers partial support for the TMSC. Consistent with the model, higher perceived social support was linked to lower levels of perceived stress, supporting the idea that external resources can influence individuals' stress appraisal processes (Kaveh et al., 2023). Furthermore, perceived stress was significantly associated with death anxiety, highlighting that stress remains an important psychological factor in understanding death-related fear (Eren et al., 2023; Gelen et al., 2022; Genç, 2023). However, perceived stress did not show a significant mediating effect on the relationships between either perceived social support or nature connectedness and death anxiety. This reveals that the expected indirect pathway proposed by the TMSC was not observed in this study, suggesting only partial support for the model. Therefore, while the findings support the direct

relationships between coping resources, stress, and psychological outcomes, they do not support the mediating mechanism, indicating that the application of the model to death anxiety may be more sensitive to cultural and contextual factors among young adults.

The present study also contributes to the literature by addressing several key gaps. First, it provides an integrative examination of nature connectedness, perceived social support, and perceived stress within a single framework to understand death anxiety, allowing simultaneous evaluation of buffers and stress mechanisms as proposed by TMT and TMSC, whereas prior research has typically investigated these variables separately or in relation to more general psychological outcomes (Baceviciene & Jankauskiene, 2022; Gawrych, 2024). Second, the focus on Malaysian young adults helps broaden existing research, which has predominantly targeted older adults or clinical populations (Bergman et al., 2025; Gui et al., 2025), offering developmentally specific insights into how existential concerns manifest in early adulthood.

Third, the study provides context-specific evidence from Malaysia, contributing local data on death anxiety among young adults. This adds insight into how these relationships manifest in this population, complementing previous findings from other cultural contexts (Bibi & Khalid, 2019; Chhajer & Bapat, 2025; Chukwuorji et al., 2019). Finally, the non-significant mediating effect of perceived stress highlights that death anxiety may not be fully explained by stress-based mechanisms in this sample. Together, these findings provide a nuanced understanding of death anxiety, showing that the mechanisms proposed by TMT and TMSC may operate differently in diverse young adult populations.

5.2.2 Practical Implication

The results of this study have important practical implications for mental health programs and policies targeting young adults in Malaysia. In particular, they emphasize stress management as a key intervention target due to its significant association with death anxiety.

To support young adults, universities, community organisations, and mental health practitioners can implement accessible and structured stress reduction programs. For instance, low-cost physical activity interventions such as brisk walking programs can be promoted, as local evidence in Malaysia has shown that such activities are effective in reducing perceived stress among young adults (Hasan & Sidek, 2025). Additionally, mindfulness-based interventions (MBIs), which have been supported through meta-analytic findings, can be incorporated into student well-being programs through workshops or short courses to enhance coping skills and emotional regulation (González-Martín et al., 2023). These initiatives can be delivered through campus counselling services, community health programs, or online platforms to increase accessibility and participation. By focusing on stress reduction through practical and evidence-based strategies, such approaches may help address the underlying psychological processes associated with death anxiety.

Furthermore, although perceived social support was not significantly associated with death anxiety, its significant but weak relationship with perceived stress indicates that it functions as a modest protective factor. This suggests that social support may play a supportive role in reducing stress, rather than being treated as a primary approach to addressing death anxiety. In the Malaysian context, initiatives such as the Dengar Rakan Muda Project could be further expanded to provide a safe and stigma-free space for youths to share their concerns and receive support from trained volunteers, thereby helping to alleviate emotional distress and reduce stress levels (HELP University, 2025). In addition, similar support systems, including counselling services and group-based interventions, can be enhanced within universities and community settings as these approaches have been shown to improve perceived social support and psychological well-being (Khalid et al., 2023; Siaw et al., 2025). Such initiatives may help foster supportive environments and strengthen

individuals' perceived support networks, which in turn contribute to reducing stress-related psychological outcomes.

In contrast, nature connectedness did not show a significant association with either perceived stress or death anxiety in this study. Despite this, the finding still offers useful practical insights, suggesting that relying solely on nature-based approaches may be insufficient in this context. However, prior research indicates that the benefits of nature connectedness are more likely to emerge through active and structured engagement with natural environments (Johansson et al., 2022; Lau et al., 2023; Yang et al., 2024), rather than passive exposure. Therefore, nature-related activities may be incorporated as complementary strategies alongside other interventions. In practice, these activities can be integrated with stress management and social support components to enhance their potential effectiveness (Johansson et al., 2022; Yang et al., 2024; Yu et al., 2021). For example, guided nature walks that incorporate stress reduction techniques or group-based outdoor activities may encourage active engagement with nature while simultaneously promoting social interaction and psychological well-being. Such a combined approach may be more appropriate for addressing complex psychological outcomes such as death anxiety.

Finally, the study provides guidance for addressing death anxiety in the Malaysian cultural context, where direct discussion of death is often considered taboo (Foong & Aziz, 2022), and current mental health policies and services mainly focus on general psychological symptoms rather than existential concerns (Samsudin et al., 2024). The stress-focused interventions offer a culturally appropriate approach for addressing death anxiety in settings where discussing death directly may be uncomfortable for young adults. Mental health programs can include psychoeducation on coping, emotional regulation, and life transitions without explicitly emphasizing death-related themes, which ensures greater acceptability and engagement (Hall et al., 2021). Besides, policymakers should consider expanding mental

health services by integrating preventive, stress-based approaches into existing frameworks, such as university mental health initiatives and community-based programs. Improving accessibility to these services and strengthening support systems for young adults may help address underlying psychological vulnerabilities associated with death anxiety in a culturally sensitive and sustainable manner.

5.3 Limitation of Study

Several limitations of the current study should be acknowledged and addressed in future investigations. First, a methodological limitation lies in the use of a cross-sectional design, which involves obtaining data at a single time point from a target population without manipulation of variables (Cherry, 2025). Although this design allows for efficient data collection, it limits the ability to establish potential pathways among variables, as individual differences may influence the observed associations. In addition, the use of cross-sectional self-report data collected at a single time point may contribute to potential common method bias (Polas, 2025). Such bias may artificially inflate or distort the relationships between variables (Podsakoff et al., 2023). Furthermore, self-report measures rely heavily on participants' subjective perceptions and current psychological states. For instance, participants experiencing temporary negative emotions may report higher levels of perceived stress, which could influence the overall findings.

Second, the study is limited by sampling bias because of the uneven distribution of participants by gender, ethnicity, and occupation, which causes certain populations to be overrepresented or underrepresented in the sample (Simkus, 2023). Female participants comprised 66.7% of the sample, while males accounted for only 33.3%. The results were impacted by the gender imbalance as the majority of study participants were female, leading to findings that primarily reflect female experiences while underrepresenting those of male

participants. In terms of ethnicity, Chinese participants represented 75.8%, followed by Malays (15.2%) and Indians (9.1%), indicating a strong over-representation of Chinese participants. Additionally, the majority of participants were university students (72.7%), with a smaller proportion consisting of full-time workers (18.2%) and other occupational groups. The over-representation of university students in the sample may have limited the representation of other occupational groups. University students accounted for most participants, which may have led to an underrepresentation of individuals from diverse occupational backgrounds. Different occupational roles are associated with distinct life experiences and stressors (Huh et al., 2021). For instance, university students and full-time workers may experience and perceive stress in substantially different ways. These differences in stress sources and life contexts may, in turn, influence their experiences of death anxiety. Therefore, the findings derived predominantly from student participants may not accurately reflect the experiences of individuals from other occupational groups, resulting in sampling bias.

In conclusion, the explanation of the findings should take into account several methodological and sampling limitations of the present study. The use of a cross-sectional design and self-report measures may have introduced potential bias and restricted relationship interpretations. These imbalances may limit the generalizability of the findings, as the observed relationships between nature connectedness, perceived social support, perceived stress, and death anxiety may primarily reflect the experiences of young, Chinese, female, and student populations. As a result, the findings may not accurately represent the broader population.

5.4 Recommendation of Study

Further study could employ a combined longitudinal and experimental design with pre-test and post-test assessments as well as scenario-based manipulations to address methodological issues with self-report bias, common method bias, and to examine changes in relationships over time. A longitudinal design involves assessing the same participants at least twice, usually before and after an intervention, which allows researchers to track changes over time and obtain more objective and reliable results (Seifert et al., 2010). Measurements taken before and after the intervention provide important insights into its efficacy (Bell, 2010). To assess changes in the relationships between variables, these measurements can be used both before and after the experimental manipulation and stress-inducing tasks.

Additionally, an experimental design enables researchers to compare group outcomes, examine how different conditions influence psychological responses, and measure the effect of interventions (Capili & Anastasi, 2024). For example, participants could be divided into two groups at random and given the task of determining solutions after viewing based crisis or death-related scenarios. In a natural setting, one group might have strong social support, as opposed to a city setting alone, the other group might have weak social support. This design makes it possible to examine whether perceived social support and a connection to nature affect death anxiety through modifying perceived stress. Although the current study did not find significant relationship involving nature connectedness, future research may still benefit from examining this variable using experimental designs. Prior studies suggest that engagement with natural environment can influence psychological outcomes when individuals actively interact with nature. Therefore, experimental approaches may help clarify the underlying mechanisms linking nature connectedness, perceived social support, perceived stress, and death anxiety. Future research can decide to integrate a control group into the experimental design, in which subjects are not exposed to any manipulation. This would

enable researchers to more precisely evaluate the impact of the manipulations on death anxiety by comparing the effects of the experimental conditions against a baseline (Cherry, 2025).

Future studies might utilize stratified sampling to minimize sampling bias and enhance the generalizability of findings. Subgroups of participants will be created according to important characteristics as age, ethnicity, and occupation (César & Carvalho, 2011). Stratified sampling enhances the accuracy of estimates by ensuring proportional representation of all subgroups in the sample and minimising the overrepresentation of specific groups (Henry, 2024). In this study, overrepresentation was observed among students, Chinese participants, and female participants. Future research should concentrate on underrepresented groups in Malaysia, like Indians or jobless people, to examines the relationship between death anxiety in various groups and nature connectedness, perceived social support, and perceived stress.

5.5 Conclusion

The present study investigated perceived stress as mediator in connecting between nature connectedness, perceived social support, and death anxiety among Malaysian young adults. The results revealed that higher death anxiety was significantly predicted by perceived stress; conversely, perceived social support significantly and negatively predicted perceived stress. However, neither nature connectedness nor perceived social support showed a significant mediation effect on death anxiety via perceived stress. Nature connectedness showed no significant associations with perceived stress or death anxiety in this sample.

These findings suggest that social support may serve as a practical strategy for easing stress-related psychological concerns among Malaysian young adults. It is recommended that practitioners focus on interventions that combine social interaction with nature related

activities such as group based outdoor programs. Although nature connectedness was found to be insufficient for stress reduction in this study, structured activities like group-based therapy and physical exercise in natural settings remain valuable. The methodological scope of this research was restricted by cross-sectional design and the use of subjective assessment tools, but it provides a foundational understanding of death anxiety and its psychological dynamics among nature connectedness, perceived social support, along with perceived stress within Malaysian context. Future research using longitudinal designs and stratified sampling is encouraged to further establish the causal pathways between these variables.

By investigating these variables in a collectivist cultural context, the present study contributes to the limited literature on death anxiety within the Malaysian young adult demographic. The findings highlight perceived stress as an independent risk factor for death anxiety and present the role of social resources in stress regulation within the Malaysian young adult population.

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Appendices

Appendix A

Ethical Clearance Approval Form



UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)
Wholly owned by UTAR Education Foundation Co. No. 578227-M

Re: U/SERC/78-665/2025

22 December 2025

Dr Lee Wan Ying
Head, Department of Psychology and Counselling
Faculty of Arts and Social Science
Universiti Tunku Abdul Rahman
Jalan Universiti, Bandar Baru Barat
31900 Kampar, Perak.

Dear Dr Lee,

Ethical Approval For Research Project/Protocol

We refer to the application for ethical approval for your students' research project from Bachelor of Social Science (Honours) Psychology programme enrolled in course UAPZ3013/UAPZ3023. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

No	Research Title	Student's Name	Supervisor's Name	Approval Validity
1.	Nature Connectedness, Perceived Social Support, and Death Anxiety: The Mediating Role of Perceived Stress in Malaysian Young Adults	1. Lim Hwee San 2. Ng Jou En 3. Yeong Yixing	Dr Sarvarubini a/p Nainee	22 December 2025 – 21 December 2026

The conduct of this research is subject to the following:

- (1) The participants' informed consent be obtained prior to the commencement of the research;
- (2) Confidentiality of participants' personal data must be maintained; and
- (3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.
- (4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

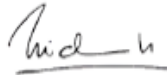
Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
Tel: (605) 468 8888 Fax: (605) 466 1313
Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288 Fax: (603) 9019 8868
Website: www.utar.edu.my



Should the students collect personal data of participants in their studies, please have the participants sign the attached Personal Data Protection Statement for records.

Thank you.

Yours sincerely,



Professor Dr Zuraidah Abd Manaf
Chairman
UTAR Scientific and Ethical Review Committee

c.c Dean, Faculty of Arts and Social Science
 Director, Institute of Postgraduate Studies and Research

Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
Tel: (605) 468 8888 Fax: (605) 466 1313
Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288 Fax: (603) 9019 8888
Website: www.utar.edu.my



Figure A1: Ethical approval letter with the approval number U/SERC/78-665/2025

Appendix B

Effect Size Calculation

Table 1. Variables, Means, Standard Deviations, and Bivariate Correlations.

	1	2	3
(1) Death anxiety	1	.59 ^a	-.46 ^a
(2) Perceived stress		1	-.43 ^a
(3) Self-transcendence			1
Mean	59.57	22.21	23.19
Standard deviation	7.72	5.32	4.25

^aCorrelation is significant at the .01 level.

Figure B1: Correlation between Death Anxiety and Perceived Stress (Abdollahi et al., 2019).

$$r = 0.590$$

$$f^2 = \frac{(r^2)}{1-(r^2)}$$

$$= \frac{(0.590^2)}{1-(0.590^2)}$$

$$= 0.5340$$

Table 1
Correlations among study variables.

Variables	1	2	3	4	5	6
1.Nature Connectedness	–					
2.Adaptive Emotion Regulation	.20*	–				
3.Non-Adaptive Emotion Regulation	.05	-.24**	–			
4.Perceived Stress	-.15	-.40***	.38***	–		
5.HCC	.17	.14	-.26**	-.14	–	
6.Negative Reactivity	-.03	-.24*	.48***	.39***	-.13	–
Mean	4.01	54.66	51.65	46.41	.63	4.65
SD	.50	10.20	6.90	7.95	.26	.80

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

Figure B2: Correlation between Nature Connectedness and Perceived Stress (Bakir-Demir et al., 2021).

$$r = -0.150$$

$$f^2 = \frac{(r^2)}{1-(r^2)}$$

$$= \frac{(-0.150^2)}{1-(-0.150^2)}$$

$$= 0.0220$$

Table 2. Means, standard deviations and correlation coefficients for key variables.

	<i>M</i>	<i>SD</i>	1	2	3	4
1. Hope	21.66	4.34	1			
2. Perceived social support	56.36	15.97	0.546 ***	1		
3. Perceived stress	41.78	8.01	-0.646 ***	-0.581 ***	1	
4. Depression	11.71	8.36	-0.510 ***	-0.534 ***	0.720 ***	1

Note. *** $p < 0.001$.

Figure B3: Correlation between Perceived Social Support and Perceived Stress (Zhang et al., 2022).

$$r = -0.581$$

$$f^2 = \frac{(r^2)}{1-(r^2)}$$

$$= \frac{(-0.581^2)}{1-(-0.581^2)}$$

$$= 0.5096$$

Total effect size (Average f^2 value)

$$\text{Average } f^2 = (0.5340 + 0.0220 + 0.5096)/3$$

$$= 0.3552$$

Appendix C

G*Power

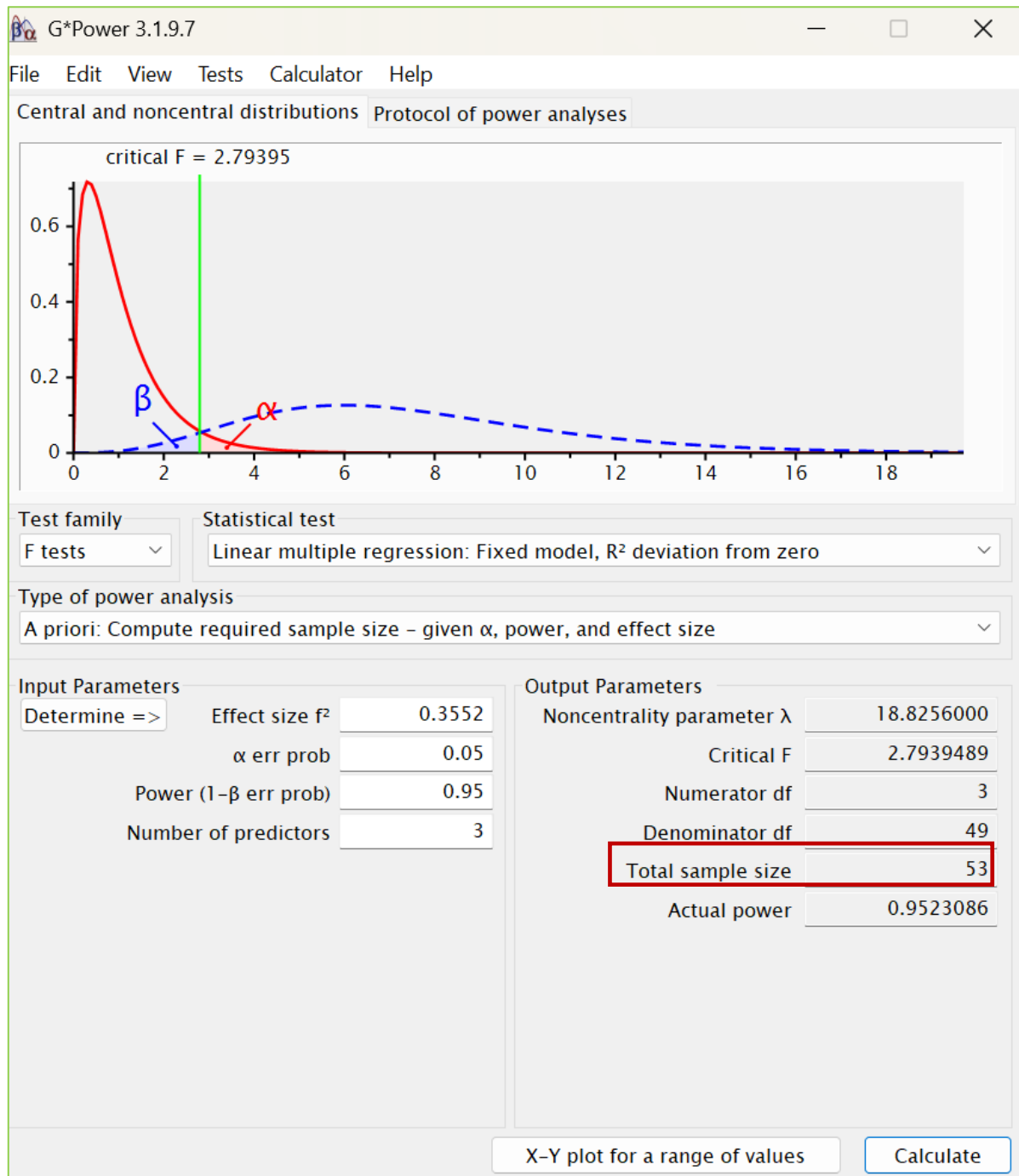
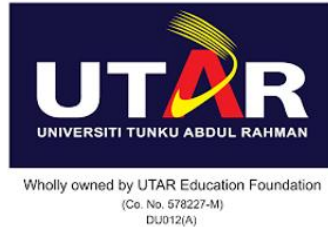


Figure C1: Sample size calculated with G*Power.

Appendix D

Questionnaire



Introduction

We would like to conduct a research study to examine Death Anxiety among young adults in Malaysia.

Procedures and Confidentiality

The following questionnaire will require approximately 15 minutes to complete. All information provided will remain as private and confidential. The information given will only be reported as group data with no identifying information and only use for academic purpose.

Screening

This study is intended for participants who meet the criteria listed below. Please ensure that you qualify before continuing with the survey.

Inclusion criteria:

1. Malaysian citizens or permanent residents
2. Aged 18–30 years
3. Able to read and understand English
4. Willing to participate voluntarily

Exclusion criteria:

1. Non-Malaysian residents
2. Below 18 or above 30 years old
3. Unable to understand English
4. Incomplete responses or refusal to provide consent

Participation

All the information gathered will remain anonymous and confidential. Your information will not be disclosed to any unauthorized person and would be accessible only by group members. Participant in this study is voluntary, you are free to withdraw with consent and discontinue participation in anytime without prejudice. Your responses will be coded numerically in the research assignment for the research interpretation. Your cooperation would be greatly appreciated.

If you choose to participate in this project, please answer all the questions as honestly as possible and return the completed questionnaire promptly.

PERSONAL DATA PROTECTION NOTICE

Personal Data Protection Statement

Please be informed that in accordance with Personal Data Protection Act 2010 (PDPA) which came into force on 15 November 2013, Universiti Tunku Abdul Rahman (UTAR) is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

Notice:

1. The purposes for which your personal data may be used are inclusive but not limited to:-

- For assessment of any application to UTAR
- For processing any benefits and services
- For communication purposes
- For advertorial and news
- For general administration and record purposes
- For enhancing the value of education
- For educational and related purposes consequential to UTAR
- For the purpose of our corporate governance
- For consideration as a guarantor for UTAR staff/ student applying for his/her scholarship/ study loan

2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

3. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

4. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

1. By submitting this form you hereby authorise and consent to us processing (including disclosing) your personal data and any updates of your information, for the purposes and/or for any other purposes related to the purpose.

2. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact

you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

3. You may access and update your personal data by writing to us at:

- judysan@lutar.my (Lim Hwee San)
- je0516@lutar.my (Ng Jou En)
- yixingyeong02@lutar.my (Yeong Yixing)

Acknowledgment of Notice

- I have been notified and that I hereby understood, consented and agreed per UTAR above notice.
- I disagree, my personal data will not be processed.

PART A: Demographic

Instructions: Please fill in your personal details or circle ONE option.

1. Age: _____

2. Gender:

- ☐ Male
- ☐ Female

3. Nationality

- ☐ Malaysian
- ☐ International (Specify country): _____

4. Race:

- ☐ Malay
- ☐ Chinese
- ☐ Indian

Others (Specify)

5. Occupation

- ☐ University Student
- ☐ Full time employed
- ☐ Part time employed
- ☐ Self-employed
- ☐ Freelancer
- ☐ Unemployed

PART B - Nature Relatedness Scale (NR-6) Short Form

Instructions: For each of the following, please rate the extent of which you agree with each statement, using the scale from 1 to 5 as shown below. Please respond as you really feel, rather than how you think "most people" feel.

- 1 - Disagree strongly
- 2 - Disagree a little
- 3 - Neither Agree or disagree
- 4 - Agree a little
- 5 - Agree strongly

PART C - Multidimensional Scale of Perceived Social Support (MSPSS)

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

- 1 - Very Strongly Disagree
- 2 - Strongly Disagree
- 3 - Mildly Disagree
- 4 - Neutral
- 5 - Mildly Agree
- 6 - Strongly Agree
- 7 - Very Strongly Agree

PART D - Perceived Stress Scale (PSS-10)

Instruction: The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way.

- 0 - Never
- 1 - Almost Never
- 2 - Sometimes
- 3 - Fairly Often
- 4 - Very Often

PART E - Death Anxiety Questionnaire (DAQ)

Instructions: To test your own level of death anxiety, indicate your response according to the following scale.

- 0 - Not at all
- 1 - Somewhat
- 2 - Very much

Appendix E**Reliability of Instruments for Pilot Study and Actual Study****Pilot Study**

Reliability Statistics

Cronbach's Alpha	N of Items
.643	6

Figure E1: Reliability for nature connectedness

Reliability Statistics

Cronbach's Alpha	N of Items
.934	12

Figure E2: Reliability for perceived social support

Reliability Statistics

Cronbach's Alpha	N of Items
.700	10

Figure E3: Reliability for perceived stress

Reliability Statistics

Cronbach's Alpha	N of Items
.828	15

Figure E4: Reliability for death anxiety

Actual Study

Reliability Statistics

Cronbach's Alpha	N of Items
.787	6

Figure E5: Reliability for nature connectedness

Reliability Statistics

Cronbach's Alpha	N of Items
.930	12

Figure E6: Reliability for perceived social support

Reliability Statistics

Cronbach's Alpha	N of Items
.727	10

Figure E7: Reliability for perceived stress

Reliability Statistics

Cronbach's Alpha	N of Items
.898	15

Figure E8: Reliability for death anxiety

Appendix F

Demographic Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age	132	18	30	23.09	2.689
Valid N (listwise)	132				

Figure F1: Age

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	44	33.3	33.3	33.3
Female	88	66.7	66.7	100.0
Total	132	100.0	100.0	

Nationality

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Malaysian	132	100.0	100.0	100.0

Race

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Malay	20	15.2	15.2	15.2
Chinese	100	75.8	75.8	90.9
Indian	12	9.1	9.1	100.0
Total	132	100.0	100.0	

Occupation

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid University Student	96	72.7	72.7	72.7
Full time employed	24	18.2	18.2	90.9
Part time employed	6	4.5	4.5	95.5
Self-employed	1	.8	.8	96.2
Freelancer	1	.8	.8	97.0
Unemployed	4	3.0	3.0	100.0
Total	132	100.0	100.0	

Figure F2: Gender, Nationality, Race, and Occupation.

Appendix G

Histogram for Each Distribution

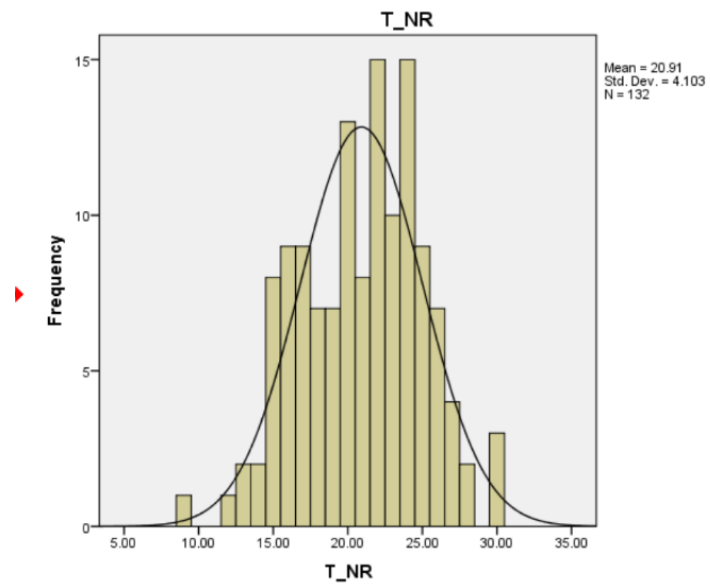


Figure G1: Histogram for nature connectedness

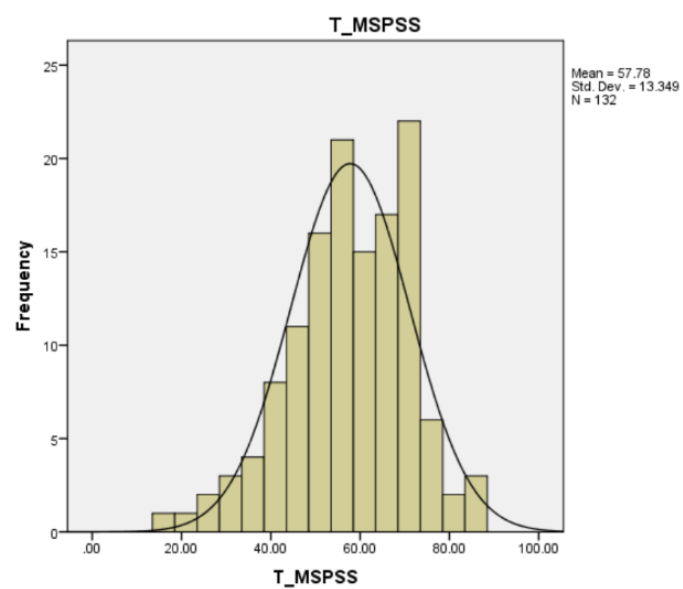


Figure G2: Histogram for perceived social support

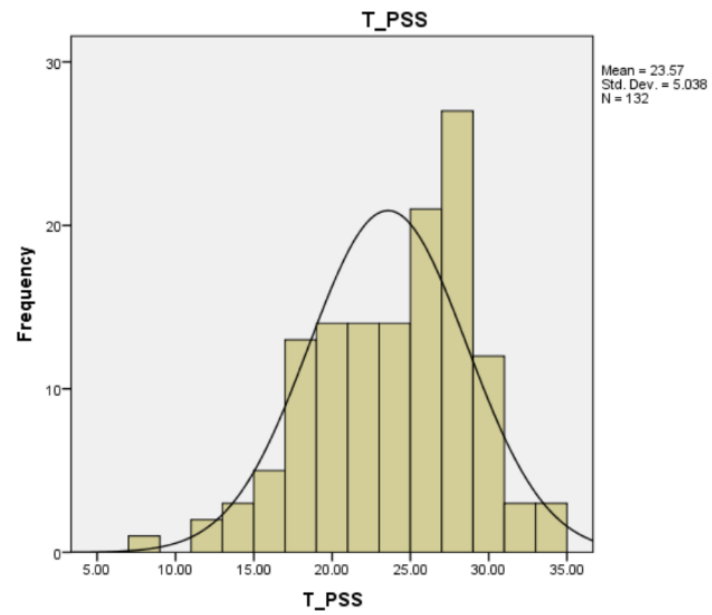


Figure G3: Histogram for perceived stress

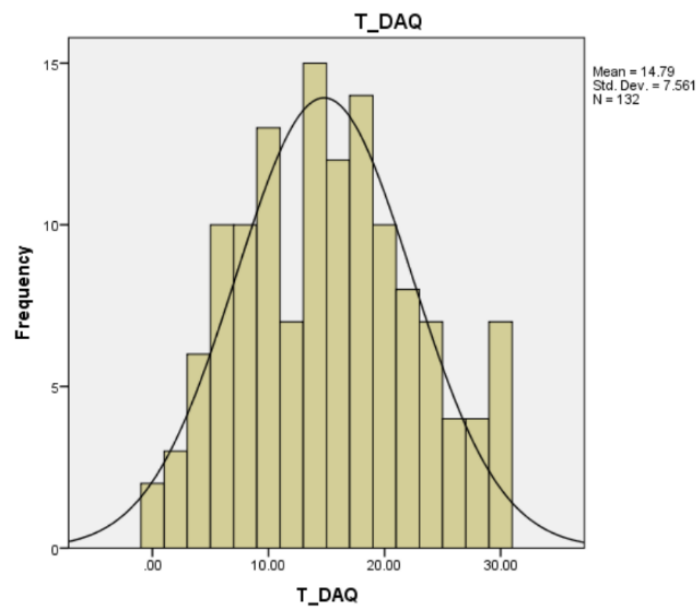


Figure G4: Histogram for death anxiety

Appendix H

Q-Q Plot for Each Distribution

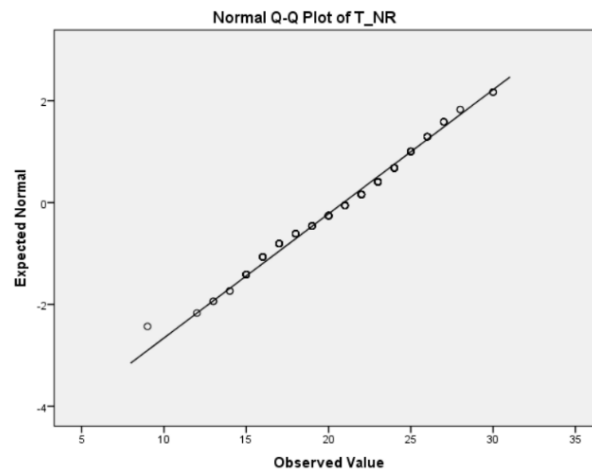


Figure H1: Q-Q plot for nature connectedness

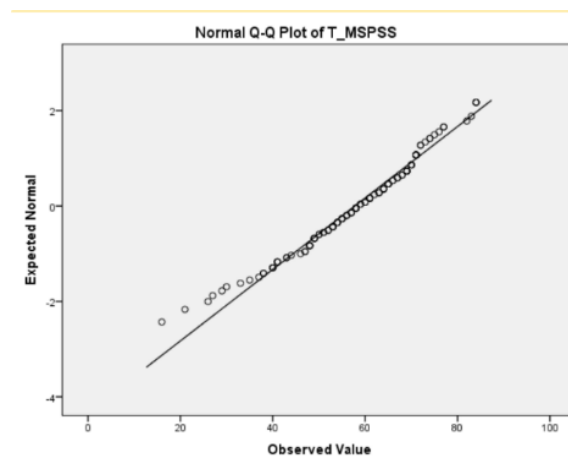


Figure H2: Q-Q plot for perceived social support

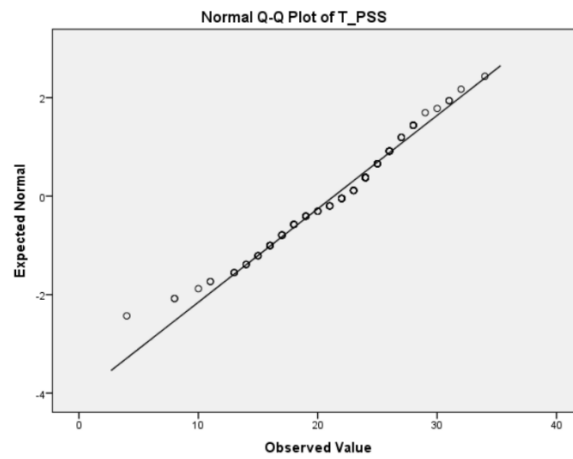


Figure H3: Q-Q plot for perceived stress

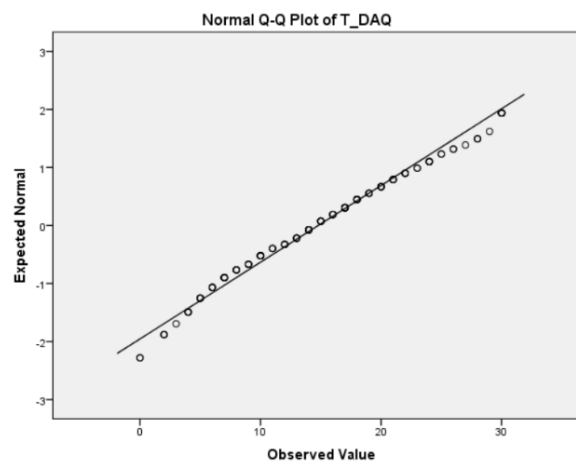


Figure H4: Q-Q plot for death anxiety

Appendix I

Pearson Correlation Analysis

Correlations		T_NR	T_MSPSS	T_PSS	T_DAQ
T_NR	Pearson Correlation	1	.096	-.109	.051
	Sig. (2-tailed)		.273	.214	.561
	N	132	132	132	132
T_MSPSS	Pearson Correlation	.096	1	-.179*	.003
	Sig. (2-tailed)	.273		.040	.969
	N	132	132	132	132
T_PSS	Pearson Correlation	-.109	-.179*	1	.355**
	Sig. (2-tailed)	.214	.040		.000
	N	132	132	132	132
T_DAQ	Pearson Correlation	.051	.003	.355**	1
	Sig. (2-tailed)	.561	.969	.000	
	N	132	132	132	132

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Figure I1: Correlation analysis for study variables

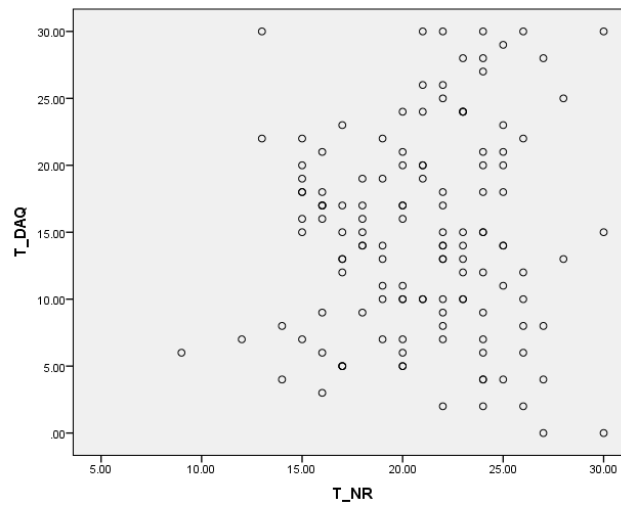
Appendix J**Linearity**

Figure J1: Scatterplot of Nature Connectedness and Death Anxiety

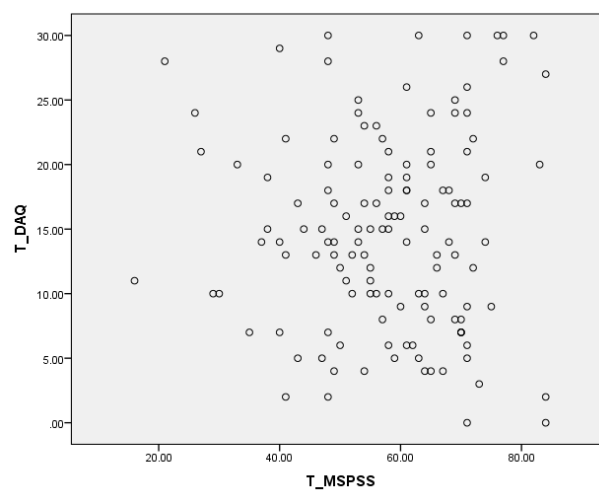


Figure J2: Scatterplot of Perceived Social Support and Death Anxiety

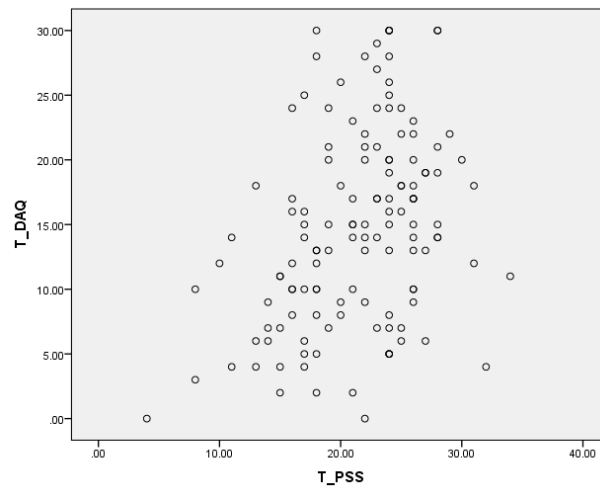


Figure J3: Scatterplot of Perceived Stress and Death Anxiety

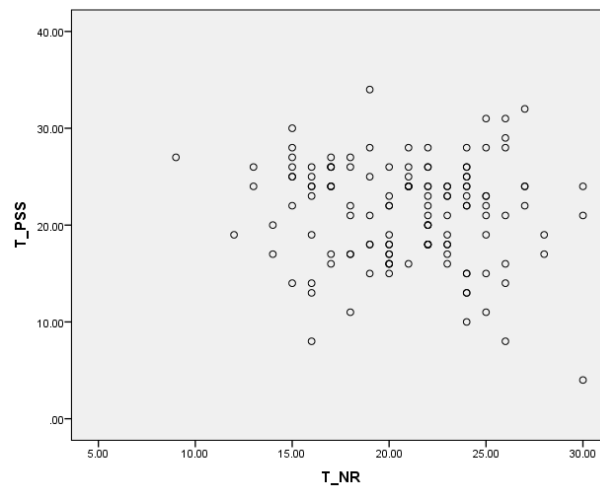


Figure J4: Scatterplot of Nature Connectedness and Perceived Stress

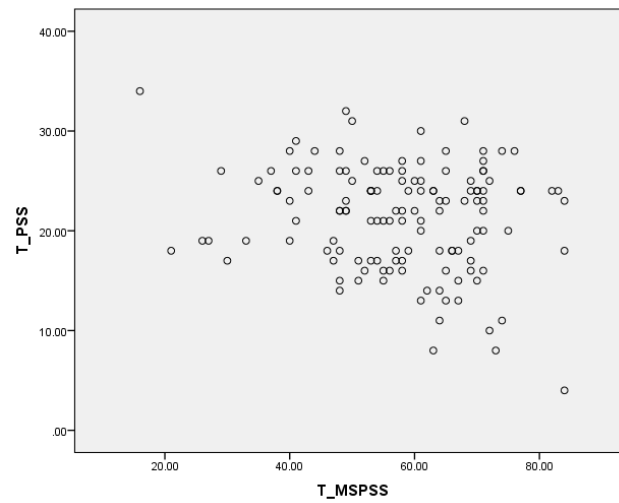


Figure J5: Scatterplot of Perceived Social Support and Perceived Stress

Appendix K

Homoscedasticity Assessment for Mediation Models

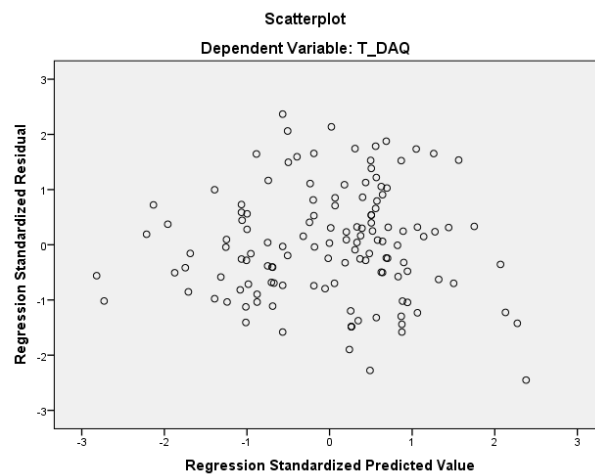


Figure K1: Scatterplot of standardized residuals and standardized predicted values for the mediation model examining nature connectedness, perceived stress, and death anxiety

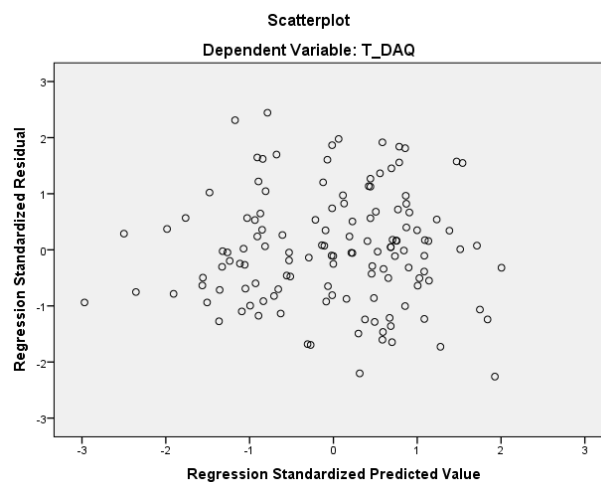


Figure K2: Scatterplot of standardized residuals and standardized predicted values for the mediation model examining perceived social support, perceived stress, and death anxiety

Appendix L

Normality of Residuals Assessment for Mediation Models

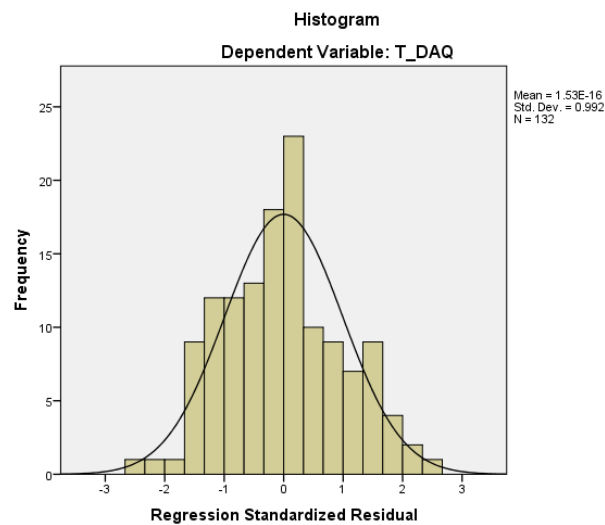


Figure L1: Histogram of standardized residuals for the mediation model examining nature connectedness, perceived stress, and death anxiety

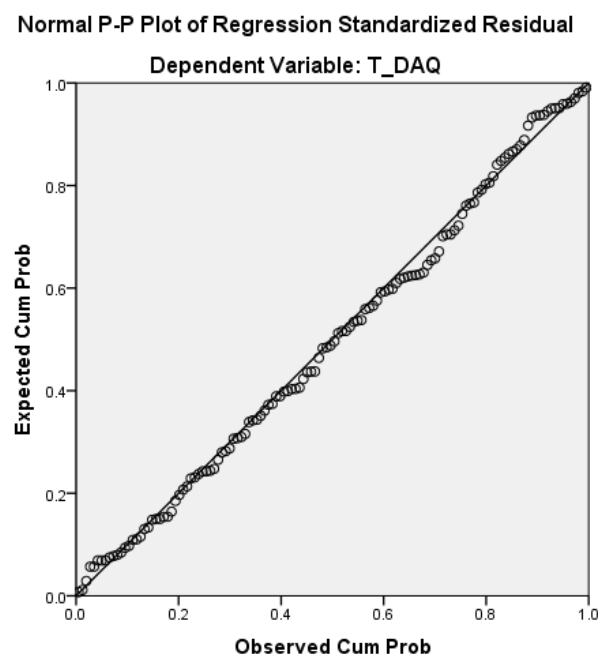


Figure L2: Normal P–P plot of standardized residuals for the mediation model examining nature connectedness, perceived stress, and death anxiety

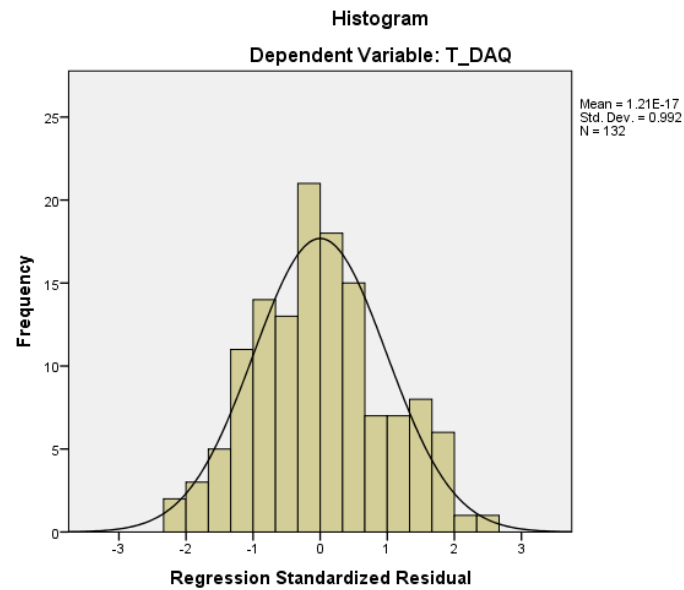


Figure L3: Histogram of standardized residuals for the mediation model examining perceived social support, perceived stress, and death anxiety

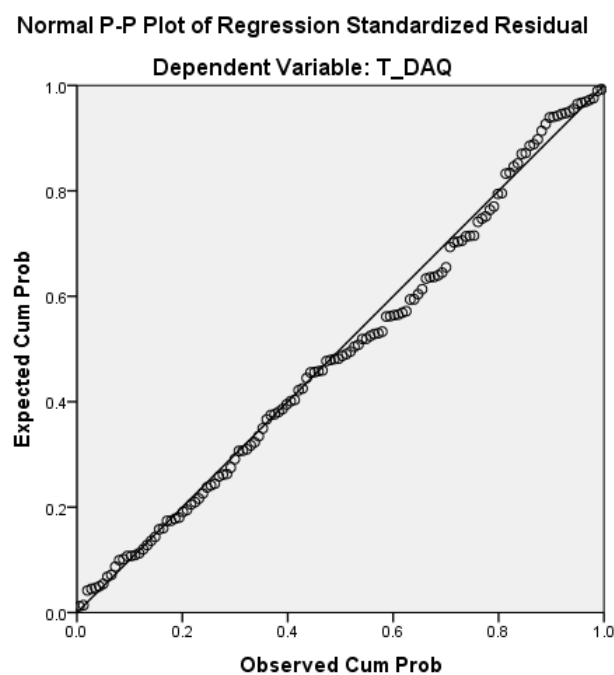


Figure L4: Normal P–P plot of standardized residuals for the mediation model examining perceived social support, perceived stress, and death anxiety

Appendix M

PROCESS Macro Output for Mediation Analysis

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.2 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

Model : 4
Y : T_DAQ
X : T_NR
M : T_PSS

Sample
Size: 132

OUTCOME VARIABLE:

T_PSS

Model Summary

R	R-sq	MSE	F	df1	df2	p
.1089	.0119	27.6849	1.5614	1.0000	130.0000	.2137

Model

	coeff	se	t	p	LLCI	ULCI
constant	24.2837	2.3873	10.1721	.0000	19.5608	29.0067
T_NR	-.1400	.1121	-1.2496	.2137	-.3617	.0817

Standardized coefficients

	coeff
T_NR	-.1089

OUTCOME VARIABLE:

T_DAQ

Model Summary

R	R-sq	MSE	F	df1	df2	p
.3664	.1343	50.2659	10.0044	2.0000	129.0000	.0001

Model

	coeff	se	t	p	LLCI	ULCI
constant	.1086	4.3109	.0252	.9799	-8.4206	8.6378
T_NR	.1674	.1519	1.1020	.2725	-.1331	.4679
T_PSS	.5235	.1182	4.4295	.0000	.2897	.7573

Standardized coefficients

	coeff
T_NR	.0908
T_PSS	.3650

```

***** TOTAL EFFECT MODEL *****
OUTCOME VARIABLE:
  T_DAQ

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .0510      .0026      57.4657      .3397      1.0000      130.0000      .5610

Model
      coeff      se      t      p      LLCI      ULCI
constant      12.8206      3.4394      3.7275      .0003      6.0161      19.6251
T_NR          .0941      .1614      .5828      .5610      -.2253      .4135

Standardized coefficients
      coeff
T_NR      .0510

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y
      Effect      se      t      p      LLCI      ULCI      c_cs
      .0941      .1614      .5828      .5610      -.2253      .4135      .0510

Direct effect of X on Y
      Effect      se      t      p      LLCI      ULCI      c'_cs
      .1674      .1519      1.1020      .2725      -.1331      .4679      .0908

Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
T_PSS      -.0733      .0732      -.2278      .0565

Completely standardized indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
T_PSS      -.0398      .0399      -.1249      .0299

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

----- END MATRIX -----

```

Figure M1: Mediation model illustrating the relationship between nature connectedness, perceived stress, and death anxiety

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.2 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

Model : 4
Y : T_DAQ
X : T_MSPSS
M : T_PSS

Sample
Size: 132

OUTCOME VARIABLE:
T_PSS

Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	.1788	.0320	27.1218	4.2930	1.0000	130.0000	.0402

Model						
	coeff	se	t	p	LLCI	ULCI
constant	25.4367	2.0209	12.5866	.0000	21.4385	29.4349
T_MSPSS	-.0706	.0341	-2.0720	.0402	-.1381	-.0032

Standardized coefficients
coeff
T_MSPSS -.1788

OUTCOME VARIABLE:
T_DAQ

Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	.3616	.1308	50.4707	9.7020	2.0000	129.0000	.0001

Model						
	coeff	se	t	p	LLCI	ULCI
constant	1.2716	4.1064	.3097	.7573	-6.8530	9.3961
T_MSPSS	.0391	.0473	.8282	.4091	-.0544	.1326
T_PSS	.5270	.1196	4.4048	.0000	.2903	.7637

Standardized coefficients
coeff
T_MSPSS .0691
T_PSS .3675

```

***** TOTAL EFFECT MODEL *****
OUTCOME VARIABLE:
  T_DAQ

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .0034      .0000      57.6152      .0015      1.0000      130.0000      .9692

Model
      coeff      se      t      p      LLCI      ULCI
constant      14.6769      2.9455      4.9828      .0000      8.8495      20.5043
T_MSPSS      .0019      .0497      .0387      .9692      -.0964      .1002

Standardized coefficients
      coeff
T_MSPSS      .0034

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y
      Effect      se      t      p      LLCI      ULCI      c_cs
      .0019      .0497      .0387      .9692      -.0964      .1002      .0034

Direct effect of X on Y
      Effect      se      t      p      LLCI      ULCI      c'_cs
      .0391      .0473      .8282      .4091      -.0544      .1326      .0691

Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
T_PSS      -.0372      .0228      -.0875      .0014

Completely standardized indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
T_PSS      -.0657      .0401      -.1534      .0025

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

----- END MATRIX -----

```

Figure M2: Mediation model illustrating the relationship between perceived social support, perceived stress, and death anxiety