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Table of Contents

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The Evaluation of a Positive Psychology-Based Intervention in Enhancing Self-Esteem among Malaysian Preschool Children

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ABSTRACT

This exploratory-sequential study examined challenges related to positive psychology among kindergarten children and developed an intervention to address them. A needs analysis, conducted through interviews and observations with five teachers and 11 kindergarteners, identified self-esteem as a key concern. Insights from thematic analysis guided the design of a play-based intervention rooted in positive psychology principles, including activities such as Laughter Yoga, Guess the Voice, and Group Drawing to improve emotional well-being and self-confidence. Pre- and post-intervention mood trackers evaluated changes in the children's emotional states. Both quantitative and qualitative results suggest a potential positive impact of play-based interventions on self-esteem among preschoolers. While play activities may not directly build self-esteem, they significantly contribute to creating a supportive environment. However, the study's brief intervention period and lack of standardised assessment tools limit the wider applicability of the findings. Acknowledging these limitations, the paper emphasises its promising preliminary results for future research. Subsequent studies should involve longer interventions and validated assessment instruments for a more comprehensive evaluation of outcomes.

Keywords: *Self-esteem, preschool children, intervention, play-based activities, self-determination theory, early childhood education*

INTRODUCTION

Self-esteem (SE) is a vital part of a child's emotional and psychological growth, influencing how they view themselves and interact with their surroundings. It refers to how people evaluate and appreciate their own worth (Rosalina & Naqiyah, 2018). In early childhood, this perception begins to develop through emotional support and social interactions children experience. Rubin (2023) states that early experiences of affirmation or rejection greatly affect children's developing sense of competence and self-esteem, with supportive relationships from caregivers, teachers, and peers playing a key role in nurturing positive self-worth. Conversely, the absence of warmth and encouragement can cause feelings of inadequacy and low self-esteem. Yahaya et al. (2022) also emphasise that consistent acceptance and emotional safety from important figures help build a healthy and resilient sense of self.

Because preschool children's cognitive abilities are still developing, their self-evaluations tend to rely heavily on external validation and feedback from their immediate

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environment rather than on internalised beliefs. The preschool years, characterised by rapid neurological, emotional, and social development, lay the foundation for future learning, personality growth, and social skills (Rahmatullah et al., 2021). As children explore questions such as "Who am I?" and "What are my strengths?" they depend on their environment to reinforce positive self-perceptions (Magdalena, 2015). When positive feedback and support are absent—whether due to negative peer interactions, unresponsive teaching environments, or societal stigma—children may internalise doubts about their abilities, thereby impeding healthy self-esteem development.

Additionally, other factors to consider when understanding a child's SE include Malaysia's cultural context. For example, reinforcing a shy and cautious personality may cause children to become passive and develop self-doubt. The lack of opportunities for children to practise asserting their autonomy can eventually lead to poor SE. This is supported by Abd Rahim et al. (2023), who note that the dominance of the shyness-inhibition trait is ingrained in Malaysia's cultural values, influencing children's socialisation and interactions. Moreover, as a developing country, Malaysia continues to face an uneven distribution of social, technological, and educational resources. These disparities may also contribute to poor SE, as limited access can restrict children's opportunities to learn.

Moreover, when understanding SE, it is essential to recognise that positive emotions reflect a child's level of SE. Positive emotions drive a well-rounded, successful life, especially in areas such as romantic relationships, friendships, work, and health. Salavera et al. (2020) stated that individuals who perceive themselves as happy tend to adapt well to life's experiences and enhance their decision-making. It further explained that affect has a significant impact on interpersonal relationships and is linked with individual SE and happiness. This indicates that positive emotional experiences help increase SE in children, making them more confident and better able to handle life's challenges. Despite the well-known importance of early self-esteem development, many children face difficulties, especially in kindergarten settings, that may hinder this process. Issues such as peer conflict, low engagement, limited emotional support, cultural values, and access to resources can harm their emerging sense of self-worth. This raises an important research question: What challenges do Malaysian preschool children encounter in kindergarten that affect their self-esteem, and how can positive psychology-based interventions support its growth?

Operationally, self-esteem in this study is measured through children's emotional responses to play-based positive psychology activities, using mood trackers (emoji stickers) and facilitator observations of behaviours such as initiative, engagement, and verbal self-affirmations. The present study aims to explore these challenges and assess the effectiveness of a Positive Psychology-based intervention designed to improve self-esteem among preschool children. This research adds to the growing body of knowledge on early childhood well-being and the application of Positive Psychology principles in Malaysian preschool environments.

LITERATURE REVIEW

Self-esteem in early childhood is vital for shaping children's psychological well-being, social engagement, and motivation to learn. During these formative years, children begin to develop internal beliefs about their abilities and self-worth, making early interventions essential to foster a positive self-concept and emotional resilience. This review synthesises empirical studies that explore factors influencing preschool children's self-esteem, including social environments, emotional regulation, animal-assisted activities, play-based learning, and therapeutic interventions.

A valuable Malaysian contribution to understanding child socioemotional development is the study by Gan, Tan, Ang, Cheah, Yaacob, and Abu Talib (2022), which examined maternal and paternal warmth, emotion regulation, and social competence among preadolescents (aged 10 to 12). Their findings show that both maternal and paternal warmth are positively associated with better emotion regulation and social competence, with emotion regulation partially mediating the association between maternal warmth and social competence. This study is especially relevant because it emphasises how warm, supportive relationships within the Malaysian cultural context help children internalise emotional skills that encourage positive self-perceptions and social adjustment. Although this research focused on older children, the findings suggest that similar interventions that promote warmth and emotional skills can also enhance self-esteem in younger children, particularly preschoolers. This provides empirical support for applying positive psychology-based interventions to bolster self-esteem through emotional regulation and relational warmth.

Similarly, Gan et al. (2022) further investigated how maternal and paternal warmth within the Malaysian context encourages emotion regulation and social competence, in accordance with Self-Determination Theory (SDT). The study emphasises how emotionally supportive environments can satisfy children's psychological needs for relatedness and competence, thereby enhancing self-esteem. These findings reinforce the importance of nurturing relationships and emotional intelligence in fostering a positive self-concept among young children. Consistent with these findings, Arslan (2021) studied the relationship between emotional regulation and self-concept in 263 Turkish preschoolers. The research revealed that children with better emotional regulation demonstrated higher self-esteem and social confidence. While the results highlight the importance of nurturing emotional intelligence alongside cognitive skills, limitations such as cultural specificity (Turkish context) and reliance on self-reported questionnaires rather than clinical assessments should be recognised.

Building on the concept of emotional well-being, Kim (2024) examined the role of animal-assisted activities (AAAs) in promoting preschoolers' emotional development. The research involved 20 children engaging in structured interactions with rabbits and demonstrated that these activities enhanced emotional expression and increased self-esteem, particularly in social and family settings. Boys seemed to benefit most. Although the study's small sample size and short duration limit generalisability, it highlights that emotionally engaging experiences, such as interactions with animals, can support children's emotional growth and self-confidence. From the perspective of Self-Determination Theory (SDT), these findings illustrate how AAAs foster relatedness by building affectionate bonds with animals and carers, while also improving competence through developing caring and communication skills during sessions.

Further supporting the role of emotional support, Cámara-Martínez et al. (2023) demonstrated that integrating playful academic content significantly enhanced self-esteem, self-concept, and social skills among preschoolers. In a study involving 80 Spanish children aged five to six, active maths lessons that incorporated games were particularly effective in boosting girls' self-esteem. The findings suggest that active, engaging classroom environments foster both cognitive and emotional development. However, the study's focus on maths limits its generalisability, and the absence of long-term follow-up restricts conclusions about sustained impact.

Complementing these insights, Mullabaeva et al. (2024) examined the influence of the family environment on preschoolers' self-awareness and self-esteem in Uzbekistan. The study found that children raised in cooperative, supportive family environments exhibited higher

self-esteem, greater motivation for learning, and greater social adaptability. Despite its reliance on self-reports and cultural specificity, the study reinforces the vital role of nurturing relationships in shaping children's positive self-perceptions.

Lastly, Nematullayeva (2022) examined the impact of therapeutic play on children's emotional well-being. Using methods such as sand therapy, role-play, and group games, the intervention provided a safe and engaging environment in which children could process emotions and strengthen peer relationships. Teachers observed improvements in emotional regulation and self-expression, suggesting that play-based therapeutic environments foster emotional resilience and self-esteem. Although the study lacked rigorous statistical analysis, it provides valuable insights into how structured play can support autonomy, competence, and relatedness in children, aligning with the principles of positive psychology and SDT. Together, these studies highlight the importance of emotional regulation, supportive relationships, play, and engaging experiences in fostering self-esteem and psychological well-being among preschoolers. Early interventions promoting these factors can play a crucial role in enhancing children's self-concept and emotional resilience.

In summary, the five studies reviewed collectively emphasise that a range of emotional, social, and experiential factors profoundly influences preschoolers' self-esteem. Whether through active learning, emotional regulation, animal-assisted interaction, nurturing home environments, or therapeutic play, each approach highlights the importance of early, holistic interventions in fostering positive self-concept. Despite methodological limitations, including small sample sizes, cultural specificity, and limited long-term data, the evidence supports a multidimensional strategy to promote young children's emotional development and self-esteem in their formative years.

Theoretical Framework

This study is based on Self-Determination Theory (SDT), which suggests that self-esteem develops through the satisfaction of three innate psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 1985, as cited in Cvencek & Greenwald, 2020). SDT claims that when these needs are fulfilled, individuals experience optimal growth and psychological well-being. This framework is especially relevant in early childhood, a vital stage when emotional development and social identity are actively forming.

The needs analysis carried out in this study identified four main themes: (1) the emotional significance of self-esteem, (2) difficulties in peer relationships, (3) differences in learning, and (4) school engagement, all of which closely align with SDT's components. For example, children's enjoyment of expressive activities such as drawing and storytelling reflects the need for autonomy, as these activities enable them to make creative choices and express their individuality. Success in completing tasks or receiving positive feedback promotes a sense of competence, reinforcing their belief in their abilities.

The intervention activities were deliberately designed to activate these psychological needs through specific behavioural mechanisms. In Laughter Yoga, shared humour, synchronised movements, and mutual eye contact promote co-regulation and emotional attunement, strengthening relatedness among peers. Guess the Voice encourages children to identify and interpret vocal emotions, building competence in emotional recognition and communication. Meanwhile, Group Drawing fosters autonomy through free artistic expression and relatedness through collaboration and positive peer acknowledgement. Collectively, these structured yet playful activities create an emotionally safe environment where children

experience choice, mastery, and connection, which are three essential conditions for nurturing self-esteem in line with SDT principles.

The framework also indicates that self-esteem is strengthened when basic psychological needs such as autonomy, competence, and relatedness are fulfilled (Cvencek & Greenwald, 2020). This aligns with previous research emphasising the importance of early interventions to support children's self-esteem (e.g., Cvencek & Greenwald, 2020; Kim, 2024). A needs analysis with Malaysian preschool children further identified emotional insecurity, low confidence, and social difficulties as key factors impeding their emotional growth. These findings, discussed in the Results section, helped shape a positive psychology-based intervention aimed at boosting self-esteem through developmentally suitable, play-based activities targeting these specific emotional and social issues.

Conceptual Framework

Building on the Self-Determination Theory (SDT) outlined earlier, this study's conceptual framework applies the theory's three psychological needs: autonomy, competence, and relatedness, into a practical model for understanding and improving self-esteem among Malaysian preschool children. Instead of merely restating the theory, this section demonstrates how it was adapted through empirical findings and needs analysis data.

A thematic analysis of interviews with preschoolers and their caregivers identified four key areas that influence children's self-esteem: emotional expression, peer relationships, learning challenges, and school engagement. Each theme highlights specific domains in which children's basic psychological needs may be supported or obstructed.

● Emotional expression and self-regulation correspond with the need for autonomy, as opportunities for choice and emotional freedom encourage self-direction and self-awareness.

● Peer relationships are characterised by relatedness, highlighting how warmth and social bonds foster belonging and emotional safety.

● Learning challenges and school engagement relate to competence, as overcoming obstacles and active participation reinforce a sense of capability and mastery.

This integration between the qualitative themes and SDT components lays the foundation for the intervention's design. By incorporating activities that promote autonomy (e.g., self-expression through drawing), competence (e.g., emotional recognition in "Guess the Voice"), and relatedness (e.g., shared laughter and bonding in "Laughter Yoga"), the framework aims to position self-esteem enhancement because of need-fulfilling, developmentally suitable, play-based experiences.

Guided by this theoretical framework, the intervention module was developed using Positive Psychology strategies to meet these psychological needs. The activities include Laughter Yoga to facilitate emotional release and peer bonding (relatedness and autonomy), Guess the Voice to foster self-expression and confidence (autonomy), and Group Drawing to encourage collaboration and mastery (competence and relatedness). The framework suggests that when children participate in need-supportive environments, they are more likely to internalise positive self-perceptions. Consequently, this process aims to boost self-esteem, as illustrated in Figure 1.

Figure 1. Conceptual framework based on Self-Determination Theory, showing how themes from the needs analysis connect to core psychological needs, which are addressed through targeted intervention activities and are expected to improve preschool children's self-esteem.
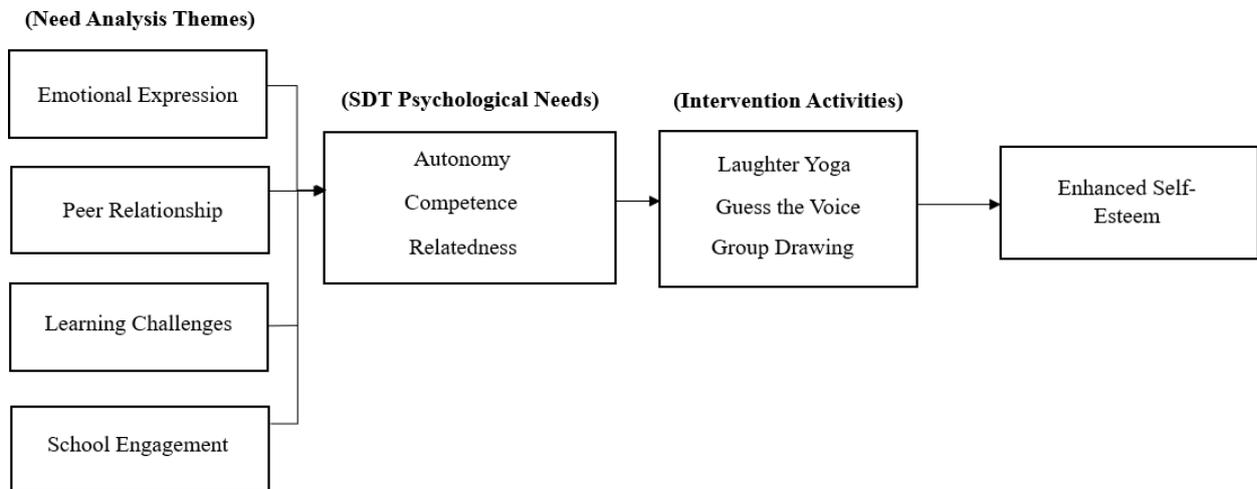
METHODOLOGY

Study design

This study adopts an exploratory sequential design, specifically a one-group pretest-posttest analysis with no control group. This approach was chosen primarily for its exploratory nature in assessing the potential effectiveness of interventions derived from the prior Needs Analysis. Additionally, the design allows examination of changes among all participants over time, i.e., before and after the interventions, without excluding any participants from the benefits. Nonetheless, this study recognises its inability to establish causal results due to the absence of control groups (Paulus et al., 2014); however, the objective is to provide preliminary findings of the proposed interventions, as is common in other behavioural studies (Lestari & Koto, 2020; Kurniawati et al., 2023; Wibawa et al., 2024).

The first phase involved a qualitative needs assessment conducted through interviews and observations with 11 children and their caregivers at Aalim Aulad Islamic Preschool in Prima Sri Gombak. The aim was to understand their daily experiences, emotional needs, and specific challenges. Data from this initial phase were analysed thematically and used to inform the development of a positive psychology-based intervention module, focused on improving well-being and emotional expression. The developed module was implemented and evaluated using a single-group pretest–posttest design, in which the same participants were assessed before and after the intervention. This approach enabled examination of within-group changes in mood and emotional expression, using pre- and post-intervention mood tracking and participant reflections to evaluate the module's effectiveness.

Participants

The participants were 36 children aged 5-6 years attending the preschool. Inclusion criteria were children aged 5-6 years who were currently enrolled in Aalim Aulad Islamic Preschool, including those identified as orphans or under guardian care. Exclusion criteria were children who did not attend the preschool on the day of the intervention and those outside the targeted age range. The intervention day was chosen based on staff availability; however, as it coincided with a school holiday, attendance rates may have been affected. Participants were divided into two small focus groups of 4-5 children to facilitate easier interaction.

Although the sample size was modest, it was intentionally selected to enable an in-depth exploration of individual experiences within a naturalistic preschool setting, consistent with qualitative research standards that prioritise data richness over numerical size (Creswell & Poth, 2018). Qualitative scholars emphasise that the aim is not statistical generalisation but meaningful understanding, which can be achieved through smaller, information-rich samples. Empirical evidence further indicates that 10 to 12 participants are often enough to reach thematic saturation in small-scale, homogeneous qualitative studies (Hennink, Kaiser, & Marconi, 2017). Furthermore, this phase constituted only the needs analysis part of the study, designed to generate exploratory insights to inform subsequent intervention development.

Instruments

Among the instruments used in the programme was a child-friendly mood tracker, a scale that uses emojis or stickers to represent emotions (happy, sad, bored, calm, and angry) and assess children's emotional states before and after the intervention. According to Chang et al. (2018), colours can evoke emotional arousal, though responses may vary across individuals and depend on the emotional significance attached to a particular colour. Therefore, based on this argument, we believed it would allow children to select the emotions or feelings that resonated most with them.

The validity of the mood tracker is demonstrated by a study by Jayaputra and Raharja (2024), which used a mood meter developed through the RULER approach. Similarly, in our study, the researchers used the mood meter to help preschool children recognise and label their emotions, using colour-coded zones that represent different feelings. The effectiveness is evidenced by improvements in the children's emotional health and intelligence. Therefore, the use of mood trackers in our study can be considered valid as it measured what it was intended to.

Moving on, several module activities adapted from the "Self Esteem Games for Children" (Plummer, 2007) served as the intervention's positive psychology toolkit, aiming to boost positive emotions and self-esteem. As mentioned, a study by Salavera et al. (2020) indicated that individuals who perceive themselves as happy tend to adapt well to life's experiences, suggesting that positive affect significantly influences interpersonal relations and is linked to individual self-esteem and happiness. The activities included 1) laughter yoga, adapted from Miami Children's Museum (2021) to promote positive emotion and stress relief for 20 minutes; 2) guess the voice, adapted from Plummer (2007, p. 40), to support self-expression and self-esteem for an additional 20 minutes; and 3) group drawing, also adapted from Plummer (2007, p. 65), to encourage cooperation and creativity for 20 minutes.

Each session was led by different members of our group, decided by mutual agreement. Although no rehearsal or simulation was conducted before implementation, members briefly discussed how to implement it. A Reflection Prompt was also included to allow children to share their experiences verbally, with children discussing their favourite activity and how it made them feel at the end of each session. To ensure consistency, we prepared a few questions beforehand to serve as a reference. For example, questions such as "Adik rasa apa lepas aktiviti tadi?" and "Seronok tak?" helped us formulate similar questions and maintain uniformity.

Measures

Measurement begins with a needs analysis, where we utilise semi-structured interview data to inform the module's content and themes. After the intervention, two primary types of measures are used to evaluate the programme. First, the pre-test and post-test mood tracker

enable children to select emojis to represent their emotions before and after the session, allowing a simple visual comparison of mood changes and a fundamental visual descriptive analysis. Second, qualitative reflections are gathered through facilitators' observations and notes throughout the programme and during the reflection segment, providing insights into the children's perceived benefits from the activities. Facilitators observe children's active participation, emotions, and behaviour throughout the activities and note children's responses during the reflection segment.

Procedures

The project comprised four phases. During the Needs Analysis Phase, data were collected through interviews and observations involving children and caregivers. Transcripts were analysed using a mini-thematic approach to identify key emotional and social challenges faced by the children. The analysis followed Clarke and Braun's (2006) six-phase framework, without employing qualitative data analysis software. Manual procedures were used for coding and developing themes to ensure meaningful engagement with the data. In the Programme Development Phase, findings from the needs analysis interview informed the selection of positive psychology theory as the foundation, with a focus on self-esteem and positive emotions. Three suitable activities from the positive psychology toolkit were adapted to meet the children's needs (see Appendix 4). The programme was implemented on 30th May 2025 at a preschool, from 9:30 AM to 11:30 AM. It included energiser games, the three-module activities, and pre- and post-session mood assessments. Ethical considerations were observed, including obtaining voluntary consent and maintaining a relaxed environment to prevent distress. Finally, in the evaluation phase, post-activity mood assessments and verbal feedback were collected from the children. Facilitators conducted a straightforward descriptive analysis of the input.

Data Analysis

A mixed-methods approach was employed to analyse the data. For quantitative analysis, responses from the pre- and post-intervention mood trackers were tabulated and analysed using descriptive statistics (e.g., frequency counts and bar charts) and inferential statistics. Subsequently, a simple inferential analysis was conducted using a Wilcoxon Signed-Rank Test, as the scores were not normally distributed, to determine whether the difference in emotion scores was significant. Qualitative analysis, on the other hand, involved reviewing the needs analysis data through thematic analysis to identify key themes that influenced the module. Children's verbal reflections during the programme were also categorised into common emotional themes such as "happy," "fun," or "like drawing."

RESULTS

The result of this research is presented in two main parts: Need Analysis and Interventions.

Need Analysis

Semi-structured interviews were conducted before the intervention with both preschool teachers and children to identify the challenges faced by preschool children (Appendix 1). Thematic analysis of the transcribed interview data identified 60 coded categories, organised into 28 distinct socio-emotional domains. The table below presents the frequencies and percentages of the coding categories derived from the thematic analysis of the interview data.

Table 1: Frequency and Percentage of Coding Categories from Thematic Analysis

Categories	Frequency	Percentage (%)
Positive Emotions	8	13.3
School Enjoyment	6	10.0
Learning Enjoyment	5	8.3
Creative activity	5	8.3
Emotional Insecurity	4	6.7
Delayed Development	3	5.0
Coping Mechanism	3	5.0
Emotional Stability	3	5.0
Peers Relationship	3	5.0
Teacher Relationship	3	5.0
Low Self-Esteem	2	3.3
Recreational Activity	2	3.3
Peers Resolution	2	3.3
Low Confidence	1	1.7
Moral Development	1	1.7
Modelling	1	1.7
Motor Development	1	1.7
Learning Challenges	1	1.7
Individual Differences	1	1.7
Improper Exposure	1	1.7
Socialisation Issue	1	1.7
Physical State	1	1.7
Separation Anxiety	1	1.7
Peers Conflict	1	1.7
Hidden Emotional Struggle	1	1.7
Self-Expression	1	1.7
Emotion Regulation Support	1	1.7
Total	**60**	**100.0**

According to Table 1, the most reported category was Positive Emotion (13.3%), followed by School Enjoyment (10.00%), Learning Enjoyment, and Creative Activity (8.33%). These findings imply that preschoolers' emotional experiences are closely linked to their self-

esteem and involvement in classroom activities, whilst also showing happiness and satisfaction at school.

The other categories each accounted for between 1.7% and 3.3% of the total codings, with Emotional Insecurity (6.7%), Coping Mechanism (5.0%), Emotional Stability (5.0%), Peers Relationship (5.0%), and Teacher Relationship (5.0%) occurring less frequently. Overall, these findings emphasise numerous key themes regarding the children's socio-emotional functioning.

Theme 1: The Role of Self-Esteem in Emotional Experiences

Self-esteem is an individual's overall sense of self-worth and has a significant impact on emotional well-being and coping with difficulties (Trzesniewski et al., 2013, as cited in Krauss et al., 2020). This theme discusses the relationship between children's emotional states and their underlying sense of self-worth. The present study indicated some categories, which are emotional insecurity, emotional disregulation, low self-esteem, low confidence, positive emotion, emotional stability, hidden emotional struggle, coping mechanism, empathy, separation anxiety, and emotion regulation support. For example, in an interview for assessing emotional needs among the children, a teacher said "Selalunya yang tunggu teacher tu, takkan bercakap selagi teacher tak pergi tolong dia. Dia duduk diam je kat tepi" (usually, the one who waits for the teacher won't speak until the teacher comes to help them. They sit quietly at the corner). In addition, another teacher said a similar thing in an interview for social challenges faced by the children, in which "Kalau jawab betul, selalunya girls jawab betul tapi dia tak konfiden" (The girls always have the correct answer, but do not have the confidence to speak up in class). These different emotional expressions demonstrate that self-esteem plays a vital role in how children cope with their environment and develop their inner character.

Theme 2: Navigating Socialisation and Peer Relationships

Socialisation is the process by which children learn social norms, build interpersonal skills, and form meaningful relationships with peers and adults (Wentzel & Watkins, 2002). This theme examines how children interact with others in their social environment, including peers and authority figures. The categories involved in this theme are socialisation issues, improper exposure, peer relationships, teacher relationships, peer conflict, peer Interaction, and peer resolution. For instance, a teacher stated that the school forbids the children from bringing any gadgets as she raised her concern about the' influence of gadgets and to reduce improper exposure. Moreover, in interviews with the children, most report feeling happy about coming to school because of the teachers, and they also enjoy playing and napping with friends at school. These social interactions influenced the children's sense of belonging and emotional safety, underscoring the need for nurturing environments that support healthy social development.

Theme 3: Experiencing Developmental and Learning Differences

Developmental differences refer to variations in children's growth patterns and learning abilities across motor, cognitive, and socio-emotional domains that influence their readiness to engage in structured learning environments (Singleton, 2007). The children in this study displayed a wide range of talents and developmental profiles, including modelling, moral development, motor skills, learning challenges, individual differences, delayed development, and physical conditions. A teacher remarked, "Ada yang datang-datang terus boleh buat. Ada yang datang slow tak tahu apa. Itu ambil masa sikitlah." It is suggested that some students are quick learners, while others require more time to catch up with their peers. Additionally, some

children arrive at school without basic skills, such as reading or writing. A teacher noted, "Ada setengah budak ni, memang datang sekolah memang tak tahu apa-apa. Zero, kosong." Consequently, the teachers explained that they needed to adapt their teaching methods to suit each student's capabilities to promote progress.

Theme 4: Children's Experiences of School Engagement and Enjoyment

School engagement is defined as children's participation in the academic, emotional, and social aspects of school life, which enhances motivation, enjoyment, and a sense of belonging (Morrison & Vorhaus, 2012). This theme highlights the degree to which children feel connected, motivated, and expressive at school. Under this theme, categories include school enjoyment, learning enjoyment, creative activities, recreational activities, and self-expression. This theme was particularly emphasised during interviews with students; most of whom responded with words like "happy" and "best" when asked how they feel about attending school; they also mentioned things like "suka datang sekolah". These moments of happiness and creativity not only boost cognitive engagement but also support emotional well-being. They also demonstrate that educational environments that foster creativity, play, and expression can benefit overall engagement and learning.

Although many themes emerged, self-esteem proved to be the primary theme underlying these challenges. The key points highlighted from the interview, such as low confidence, emotional insecurity, emotional dysregulation, and low self-esteem among the children, all indicated self-esteem issues, limiting the children's ability to participate fully in both academic and social situations. In response to these findings, the intervention activities were customised to enhance self-esteem through organised play-based modules that promote emotional expression, resilience, and positive peer engagement.

Interventions

Quantitative Analysis

Before the intervention, a pre-test mood tracker was used, allowing children to select emoji representations for five emotions: Happy (1), Calm (2), Bored (3), Sad (4), and Angry (5) (see Appendix 2). Many participants reported negative or neutral emotions, mainly sadness, anger, or boredom, often linked to minor external stressors such as sibling conflicts, hunger, or anticipation of unrelated activities. The results established the emotional baseline for each child prior to the intervention, indicating relatively low levels of initial engagement, confidence, and intrinsic motivation. After introducing the play-based positive psychology intervention, several positive signs of improved emotional well-being and self-esteem were observed among preschoolers aged five to six years.

Following the intervention, which included Laughter Yoga, Guess the Voice, and Group Drawing, a post-test mood tracker was administered. The data revealed a substantial increase in positive emotional states, as shown in Table 2.

Table 2: Descriptive Frequencies of Reported Emotions Before and After the Intervention

Emotion	Pre-Test Frequency	Post-Test Frequency	Change (↑/↓)
Happy	2	5	↑ +3

Calm	4	5	↑ +1
Bored	1	0	↓ −1
Sad	1	0	↓ −1
Angry	2	0	↓ −2

Table 2 depicts a distinct emotional transition among participants, evidenced by an increase in positive responses from 20% to 50%, whereas negative feelings (sadness, anger, boredom) declined to 0%. This pattern indicates increased happiness and engagement following participation in the activities.

Table 3: Wilcoxon Signed-Rank Test for Emotion Scores Before and After the Intervention

Comparison	N	Z	p	Negative Ranks	Positive Ranks	Ties
Post-Test – Pre-Test	10	-1.84	.066	0	4	6

Because the scores were not normally distributed (Shapiro–Wilk test, $p < .05$), a Wilcoxon Signed-Rank Test was conducted to compare emotion scores before and after the intervention (Table 3). The results indicated no statistically significant difference in emotion scores between pre- and post-intervention, $Z = -1.84$, $p = .066$. Notably, four participants showed higher post-intervention emotion scores, while six participants' scores remained unchanged.

Qualitative Analysis

Laughing Yoga. Most participants showed the ability to follow instructions and engage in group laughter, which encouraged emotional expression and shared joy. Initially, some children hesitated or responded with shy laughter; however, within minutes, they joined in the group's laughter and confidently mimicked the facilitator's movements. A few students remained reserved, likely due to embarrassment or unfamiliarity with the activity, highlighting the importance of creating a psychologically safe environment. Laughing Yoga has been shown to reduce stress and enhance life satisfaction among young people (Alıcı & Kalanlar, 2024; Çelik & Kılınç, 2022), underscoring its potential to boost self-esteem. The shared laughter supported relatedness and autonomy by promoting emotional openness within a secure and playful setting. Children's spontaneous imitation and collective joy suggest that humour-based synchrony effectively meets the need for relatedness as outlined in Self-Determination Theory (SDT).

Guess the Voice. An emotion-recognition game that helped participants practice expression and social feedback. Participants made distinctive noises, such as selecting an animal sound to represent themselves, and actively recognised their peers based on these sounds. Initially, some children were too shy to make the sound, but after a few rounds, their voices grew louder and more confident. Although some guesses were inaccurate, most

participants expressed a desire to continue playing, demonstrating resilience and accepting mistakes as part of the learning process—both key components of self-esteem. Initially reserved children showed increased confidence in sound production and identification, indicating skill improvements. The gradual mastery of the task illustrates the Self-Determination Theory notion that success in intrinsically enjoyable challenges boosts motivation and self-esteem.

Group Drawing. Participants took turns creating a collaborative drawing based on a specific theme. Many groups demonstrated patience, respect for turns, and peer encouragement, even when some contributions diverged from the intended vision (see Figures 12 and 13 in Appendix 3). These actions indicated teamwork and social support, both of which enhance a child's self-esteem. The theme chosen for both groups was 'Fruits', particularly, they were asked to draw a Durian. Initially, the children were hesitant to begin the drawing, so facilitators initiated the process, which the children then completed to produce a 'Durian' picture. The participants demonstrated patience, took turns, and expressed pride in their finished artwork. Afterwards, the children were given the freedom to draw anything on the paper, and their creativity and imagination became evident through their drawings. Furthermore, the children demonstrated academic abilities by expressing what they had learnt through drawings and by writing Jawi letters, highlighting significant memory recall. The task fulfilled autonomy through creative choice, competence through artistic skill, and relatedness through co-creation and praise, illustrating how play can comprehensively meet the three psychological needs outlined in Self-Determination Theory (SDT).

DISCUSSION

The play-based positive psychology intervention improved participants' emotional well-being, as evidenced by both quantitative and qualitative data. Observable behaviours, including laughter, verbal participation, and cooperative engagement, were associated with higher ratings of happiness and calm. These findings align with Self-Determination Theory, which states that children's experiences of autonomy, competence, and relatedness promote greater intrinsic motivation and increased self-esteem. After the intervention activities, a post-test using the same mood tracker as the pre-test was conducted. Most children reported positive emotions, such as happiness, compared to the pre-test. This indicates an overall enhancement in emotional state following participation in the self-esteem-building activities.

This study assessed the effectiveness of a positive psychology-based intervention in improving self-esteem among preschool children, using established frameworks and activities adapted from the positive psychology toolkit. The intervention included play-based activities designed to foster positive emotions, encourage social interaction, and build teamwork. Consistent with previous research (Arslan, 2021; Nematullayeva, 2022), the results indicate that such interventions can effectively promote positive emotional experiences and support the development of self-esteem in young children.

The results of this study generally highlight the importance of nurturing self-esteem as emphasised in Self-Determination Theory (SDT), a need that is often overlooked in early childhood settings. For instance, the group drawing activity provided children with opportunities for creative expression and teamwork, facilitating a sense of competence and relatedness, i.e., the key SDT components (Mak & Fancourt, 2019). Although this intervention did not directly address developmental or learning delays, it successfully encouraged children to engage with peers and facilitators, express positive emotions, and build confidence through participation in enjoyable group activities. This aligns with prior research showing that

inclusive peer environments positively influence children's social growth and self-esteem (Schmidt et al., 2020). Unlike Kim (2024), which included a gender analysis showing that boys benefited more than girls, this study does not include a gender analysis because the number of male and female children participating was not proportionate.

The previous study also did not elaborate further on those findings. Moreover, the outcomes support the notion that self-esteem and social competence are closely interlinked. As Hernández-López and Romero-López (2022) note, these factors exhibit a reciprocal relationship, where improvements in one domain often reinforce the other. Practically, the findings suggest that educators and early childhood practitioners may consider integrating positive psychology principles into classroom environments to promote emotional well-being and peer collaboration from an early age.

Several limitations must be acknowledged. First, the intervention was brief, consisting of a single session, which may have generated temporary enthusiasm rather than lasting improvements in self-esteem. More extended intervention periods are likely necessary to produce more enduring behavioural and emotional changes. Secondly, the study did not utilise standardised measurement tools to assess changes in self-esteem objectively. Instead, it relied on mood trackers and observational data, which, while valuable, may not fully capture the complexity of self-esteem in young children. Future studies should incorporate validated child-friendly assessment instruments and triangulate data through mixed-method approaches, such as teacher evaluations, parental feedback, and children's creative expressions. Another viable option is to utilise the Rosenberg Self-Esteem Scale, adapted for children (CRSES), to more accurately measure changes in self-esteem. Thirdly, the study's limited scope, conducted in a single preschool with a small, context-specific sample, reduces the generalisability of its findings. Although the results in the inferential analysis were not statistically significant, this may be due to the limited sample size. Increasing the number of participants in future research could help clarify whether the observed trends are meaningful.

Moreover, future research should extend the intervention across multiple sessions and diverse preschool settings to enable sustained engagement and broader applicability. Conducting the programme during the regular school term would likely enhance attendance and yield a more representative sample. Follow-up assessments are also advised to evaluate the long-term effects of such interventions on children's emotional well-being, social competence, and self-esteem development. The findings can inform policies specifically for Malaysian preschools and educational environments, aimed at cultivating positive emotions and promoting social engagement.

CONCLUSION

This study examined the positive-psychology challenges faced by kindergarten children, with particular focus on self-esteem, and developed an intervention to address these needs. Using an exploratory-sequential design, interviews and observations identified self-esteem as a key area for development. In response, a play-based intervention consisting of Laughter Yoga, Guess the Voice, and Group Drawing activities was implemented to promote positive emotions, social interaction, and self-confidence.

The findings indicate that the intervention was effective in improving children's emotional well-being, as evidenced by their active participation in activities and by positive mood changes before and after the intervention. Significantly, these results are consistent with the principles of Self-Determination Theory (SDT), which underpinned this study's conceptual

framework. The intervention supported autonomy by allowing children to express themselves freely through laughter and art, competence by helping them succeed in emotion-recognition and creative tasks, and relatedness through shared joy and collaboration with peers. Collectively, these experiences fostered intrinsic motivation and self-esteem.

Although the study's short duration and lack of standardised measures pose limitations, it provides practical insights for educators seeking to incorporate SDT-informed positive psychology practices in early childhood settings. Future research could build on this work by using longitudinal designs and standardised self-esteem assessments to evaluate the sustainability of these psychological gains, facilitating broader implementation of the intervention across preschools in Malaysia.

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APPENDICES

Refer to Appendix 1 for the compilation of interview transcripts.

Refer to Appendix 2 for the process of reflexive thematic analysis.

Refer to Appendix 3 for the compilation of pictures.

Refer to Appendix 4 for the module plan.

Peer Support as a Pathway for Reducing FOMO: A Theoretical Synthesis of Self-Determination and Broaden-and-Build Frameworks

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ABSTRACT

This study investigates the potential of peer support group interventions to reduce Fear of Missing Out (FOMO) among adolescents in an orphanage, using Positive Psychology frameworks, specifically Self-Determination Theory and the Broaden-and-Build Theory. The aim was to enhance emotional well-being and lower FOMO through mindfulness practices, gratitude exercises, and social support mapping integrated into organised peer support sessions. A mixed-methods approach was employed, including a needs analysis, pre- and post-intervention assessments with the FOMO Scale, and qualitative feedback. Eight adolescents aged 12 to 16 from an orphanage participated in three peer support sessions. Quantitative results indicated modest reductions in FOMO among participants who attended all sessions, whereas inconsistent attendance produced mixed outcomes. Qualitative data highlighted peer conformity pressures and unequal participation as barriers to sustained improvement. Participants reported positive experiences, noting increased emotional awareness and a sense of connectedness. Overall, the findings suggest that peer support interventions grounded in psychology hold promise for reducing FOMO and fostering resilience among vulnerable youth. However, continued engagement and personalised approaches are recommended to achieve greater impact in future research.

Keywords: Fear of Missing Out (FOMO), Peer Support Group, Broaden-and-Build Theory, Self-Determination Theory

INTRODUCTION

In today's highly connected digital world, social media platforms make it easy for individuals to view curated versions of others' lives, often leading to negative social comparisons. Adolescents, in particular, are very vulnerable to these comparisons, which can diminish appreciation for their own experiences and lead to feelings of inadequacy (Desjarlais, 2024). Exposure to highlight reels, travel photos, and online interactions increases the fear of exclusion, reinforcing a phenomenon known as the Fear of Missing Out (FOMO). FOMO is generally understood as the worry that others are having enjoyable experiences while one is not, prompting compulsive social media use to stay connected and informed (Ali et al., 2021). This issue is further worsened by underlying vulnerabilities such as loneliness, family conflicts, depression, and low self-efficacy, which are especially common among marginalised adolescent groups.

FOMO is an increasing concern among adolescents globally, but it presents even

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greater challenges for those from disadvantaged backgrounds, such as adolescents living in orphanages. Separated from family support and social privileges, these young people may experience heightened feelings of abandonment and social isolation. Limited access to peer groups and support networks worsens their vulnerability to FOMO and its associated mental health risks, including anxiety, depression, and low self-esteem (Vannucci et al., 2017). Therefore, addressing FOMO within this group is both timely and crucial.

Peer support interventions provide a promising path for alleviating these psychosocial issues. Peers, defined as individuals of similar age and shared experiences, can provide mutual support that fosters empathy, belonging, and emotional validation (Breidenstein, 2008). According to Penney (2018), peer support involves individuals with shared lived experiences offering one another encouragement, understanding, and coping strategies in a reciprocal and empowering manner. For adolescents in orphanages, peer support groups provide safe spaces where they can forge meaningful connections, learn from one another's experiences, and develop a sense of community to counteract the isolation that fuels FOMO.

To improve the effectiveness of such interventions, this study incorporates key concepts from Positive Psychology, particularly Self-Determination Theory (Deci & Ryan, 1985) and Broaden-and-Build Theory (Fredrickson, 2001). Self-Determination Theory posits that intrinsic motivation, autonomy, and relatedness are essential for psychological well-being, whereas Broaden-and-Build Theory emphasises the role of positive emotions in expanding one's cognitive and behavioural resources. These theories collectively imply that fostering positive emotional states and autonomous engagement can help adolescents shift from external social validation (sought through social media) to internal sources of well-being and resilience.

Previous research underpins this theoretical foundation. Littman-Ovadia and Russo-Netzer (2024) emphasise that FOMO is closely linked to identity development and major life decisions among emerging adults, who cope with it through cognitive, emotional, and behavioural strategies such as reframing thoughts and disengaging from social media. Neal et al. (2021) show that mindfulness-based interventions effectively reduce FOMO tendencies by fostering present-moment awareness, decreasing compulsive social media use, and breaking social comparison cycles. These findings align with the core principles of Broaden-and-Build Theory, which highlights how positive emotional states expand thought–action repertoires, and Self-Determination Theory, which stresses the importance of autonomy and intrinsic motivation in reducing harmful social comparisons.

Building on these theoretical and empirical foundations, this study aims to develop and evaluate a peer support group intervention grounded in Positive Psychology principles. By incorporating practices such as mindfulness, gratitude exercises, and support network mapping, the intervention seeks to foster positive emotional states, strengthen interpersonal connections, and provide adolescents with healthier coping strategies. Specifically, this research investigates whether peer support can reduce the negative impacts of FOMO and promote emotional resilience among adolescents in an orphanage setting.

Figure. 1: The Broaden-and-Build Theory of Positive Emotions (adapted from Fredrickson, 2001)
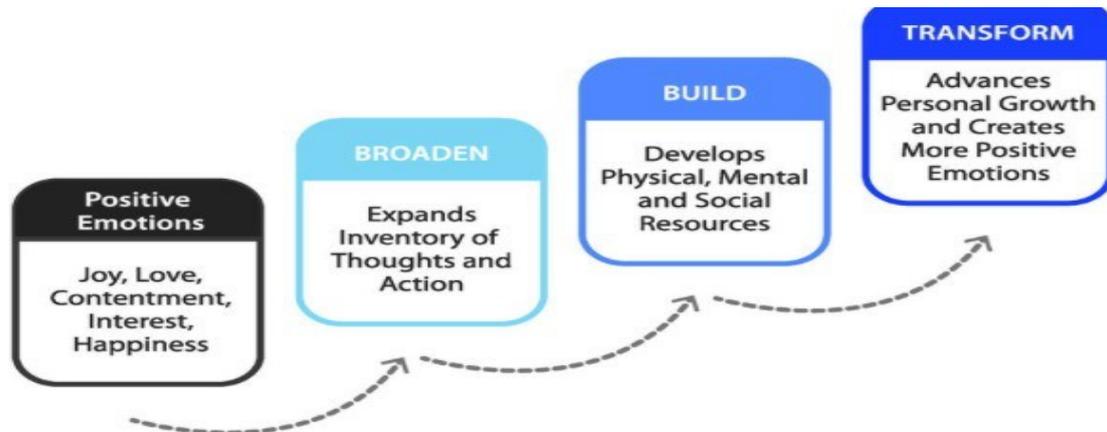
The conceptual framework for this study is based on Fredrickson's Broaden-and-Build Theory of Positive Emotions, which suggests that fostering positive emotional experiences widens individuals' thought-action repertoires and builds lasting personal resources. As shown in Figure 1, the framework highlights four key components: positive emotions, personal resources, social connectedness, and resilience, that together contribute to enhanced well-being and happiness.

This study combines the Broaden-and-Build Theory with the peer support group model as a practical approach to reduce the Fear of Missing Out (FOMO) among adolescents. Peer support groups provide a safe and empowering environment where individuals can foster feelings of belonging, happiness, and acceptance, which are crucial emotional states that counteract the anxiety and insecurity associated with FOMO. Spiridon et al. (2020) argue that interactions within peer groups encourage positive emotional experiences, such as belonging and happiness, particularly in educational and social settings.

Furthermore, Fransiati et al. (2024) highlight that group mentorship interventions can be especially effective for Generation Z, helping them manage their time better, boost self-confidence, and regulate their emotions, key factors in reducing the effects of FOMO.

Within this integrated framework, peer support groups serve not only as a venue for emotional exchange but also as a driver of the development of social and psychological resources. Through shared experiences and mutual support, adolescents develop coping strategies, relational skills, and emotional resilience that help shift their focus from external validation (often sought on social media) to internal well-being. By aligning the four fundamental elements of the Broaden-and-Build Theory with peer support practices, the present study indicates that positive emotional experiences created in these groups will foster enduring resources and ultimately decrease FOMO.

Figure. 2: The conceptual framework from the integration of Broaden-and-Build Theory with Peer Support Group to reduce Fear of Missing Out (FOMO)
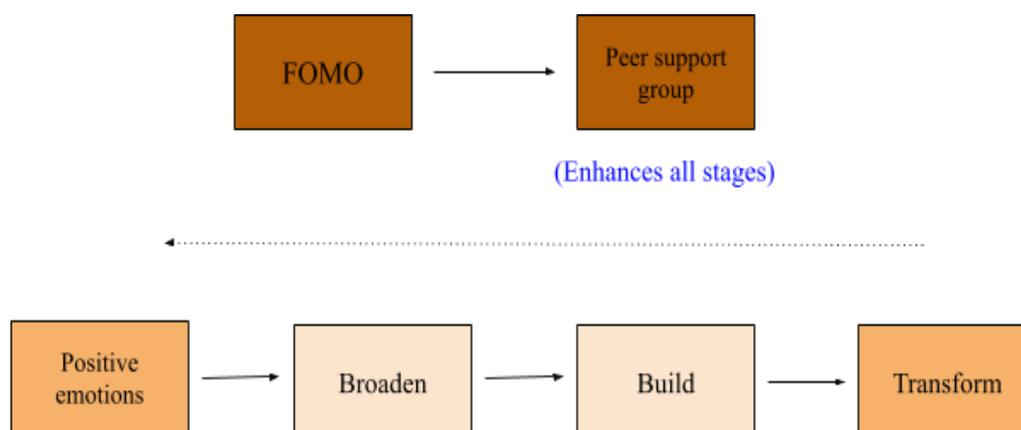
Research Questions:

1. What Positive Psychology strategies can be used to reduce Fear of Missing Out (FOMO) among adolescents living in an orphanage?
2. To what extent is a peer support group intervention, grounded in Positive Psychology principles, effective in reducing FOMO among adolescents living in an orphanage?

Research Objectives:

1. To identify and explore Positive Psychology-based strategies that can be applied to reduce Fear of Missing Out (FOMO) among adolescents living in an orphanage.
2. To assess the effectiveness of a Positive Psychology-informed peer support group intervention in reducing FOMO among adolescents living in an orphanage.

METHODOLOGY

Research Design

This exploratory study adopts a mixed-methods research design to examine the contributing factors, psychological effects, and coping strategies associated with Fear of Missing Out (FOMO) among adolescents. The research was carried out in three successive phases, combining qualitative and quantitative approaches to provide a comprehensive understanding of the phenomenon.

This study employed a quasi-experimental, one-group pretest-posttest design, as described in the methodology section. No control group was included because the primary aim was to evaluate the initial effectiveness and feasibility of a brief peer support intervention for adolescents in an orphanage. A total of 8 adolescents, aged 12 to 16 years, participated in 3 peer support sessions. Additionally, the participants belong to a minority group that has faced social and familial disadvantages; therefore, it was considered ethically and logistically appropriate to begin with a single-group design.

The initial phase involved a **needs assessment,** employing semi-structured questions to explore participants' personal experiences, emotional challenges, and coping strategies related to FOMO. This qualitative component helped contextualise the adolescents' lived experiences and guided the development of the intervention module.

The second phase involved **quantitative assessments**, employing a pre-test and post-test design. The **Fear of Missing Out Scale** (Przybylski et al., 2013), a validated self-report instrument, was administered to measure participants' FOMO levels before and after the intervention. This assessment provided baseline and outcome data on participants' levels of FOMO.

The third phase involved implementing a **peer support group intervention module,** conducted between the pre- and post-test phases. The intervention aimed to promote emotional support, peer connection, and the use of Positive Psychology-based coping strategies. The sessions centred on experience-sharing, psychoeducation, and practical activities such as mindfulness and gratitude exercises designed to reduce FOMO in participants' daily lives. This multi-phase, mixed-methods approach enabled both an in-depth exploration of participants' psychosocial experiences and an initial assessment of the peer support group's effectiveness in addressing FOMO.

Participants

The study involves eight participants aged 12 years or older living in an orphanage. It includes seven females and one male, selected through purposive sampling. The group is diverse in terms of gender, background, and experiences, ensuring a comprehensive understanding of FOMO in this context. Since most are under 18, their guardians are responsible for providing informed consent, and ethical approval was obtained before data collection. Participation is entirely voluntary, and they may withdraw at any time without penalty.

Measures

The FOMO Scale developed by Przybylski et al. (2013) is used in this study as a primary measure to assess participants' levels of FOMO, which is characterised by the feeling of apprehension that one is missing out on rewarding information, events, experiences, or life decisions.

This scale measures various aspects of FOMO, including how often these feelings occur and their effects on social connections and overall well-being. The scale aims to reflect participants' typical experiences in daily life. These 10 items are rated on a 5-point Likert scale, where *1 is "not at all true of me", and 5 is "extremely true of me";* the highest score indicates a high level of FOMO.

Alongside pre-test and post-test assessments, observational data and facilitator notes were collected to evaluate the effectiveness of the peer support group intervention module in fostering coping strategies and emotional support. By combining quantitative and qualitative measures, the study aims to gain a deeper understanding of the psychological and behavioural implications of FOMO.

Procedure

The study began with a needs analysis, during which researchers examined participants' lived experiences of Fear of Missing Out (FOMO) and their existing coping strategies. This qualitative phase provided crucial contextual insights to inform the intervention's design. Eight adolescents aged 12 to 16 years were recruited from a nearby orphanage in Gombak through purposive sampling, based on their suitability for the intervention focus. Coordination with the orphanage caregiver and management was established via WhatsApp and email to organise the

sessions and manage logistical arrangements. Informed consent was obtained from the participants' legal guardians before the study commenced, in accordance with ethical guidelines. To assess baseline FOMO levels, participants completed a pre-test questionnaire using the validated Fear of Missing Out Scale (Przybylski et al., 2013) prior to the first intervention session. The peer support group intervention was delivered over **three structured sessions,** each incorporating experiential learning and Positive Psychology-based activities aimed at alleviating FOMO-related distress.

- **Session 1: Recognising FOMO** — This session introduced the concept of FOMO and encouraged participants to reflect critically on their social media habits and personal experiences, helping them identify the emotional and cognitive origins of their FOMO.
- **Session 2: Coping with FOMO** — Participants were introduced to adaptive coping strategies, including mindfulness practices and self-care activities, aimed at managing FOMO-related anxiety and enhancing emotional regulation.
- **Session 3: Shifting Focus** — The final session concentrated on fostering gratitude, enhancing personal relationships, and recognising supportive peer networks, promoting a move from external validation to intrinsic well-being.

Following the intervention, participants completed the **post-test questionnaire** to measure changes in FOMO levels. The collected quantitative and qualitative data were then analysed to evaluate shifts in participants' FOMO experiences and to assess the overall effectiveness of the peer support group intervention.

Data Analysis for the Need Analysis

Interview sessions were conducted to collect feedback from participants during this campaign. This approach enabled a detailed examination of the causes of FOMO, its psychological and emotional effects, and the coping strategies participants employed. The interview data were systematically analysed using thematic analysis, and key themes were identified to guide the development of potential interventions.

Data Analysis of a Positive Psychology-informed Peer Support Group Intervention for Reducing FOMO

As the number of participants was limited, the effectiveness of the peer support group could not be analysed using IBM SPSS 27. Therefore, to measure the campaign's effectiveness, researchers manually calculated the differences between pre-test and post-test scores. The individual score was obtained by summing all the scores and dividing by 10 (FOMO questions). This calculation was performed for both the pre-test and post-test. This method compares participants' FOMO levels before and after the intervention, aiming to identify significant differences. The analysis assessed whether participation in the sessions led to a measurable reduction in FOMO, providing insights into the programme's overall effectiveness.

Ethical Consideration

Before the study was carried out, participants and their caregivers received clear and detailed information about its purpose, procedures, potential risks, and benefits. Since the participants were minors, informed consent was obtained from their caregivers, who were contacted directly to ensure they understood the study and approved the child's participation. Consent was given voluntarily, without coercion or undue pressure. Confidentiality and communication were consistently maintained throughout the study to keep both participants and caregivers informed, ensuring transparency and fostering an environment in which

participants felt empowered to engage meaningfully in the process.

RESULTS

Themes Identified from the Needs Analysis

1. Social Issues

Many adolescents shared experiences of peer exclusion and comparison, often linked to missed school attendance or being left out of group activities. Several mentioned feeling disconnected when returning to school after absences, as peers had formed new dynamics or inside stories without them. This recurring sense of exclusion within peer circles fostered social insecurity and contributed significantly to the Fear of Missing Out (FOMO).

2. Emotional Issues

Emotional struggles were a prominent theme among participants. Adolescents described feeling sad, jealous, anxious, and sometimes angry when excluded from social events or unable to participate in activities others were doing. Some also reported internalising these feelings, crying alone, or hiding their emotions. Emotional instability and limited outlets for expression increased their vulnerability to FOMO, particularly when exposed to social media content that sparked comparison and envy.

3. Lack of Satisfaction in Life

Several participants expressed dissatisfaction with their daily routines and life circumstances, perceiving their experiences as monotonous and less fulfilling than those of others. Exposure to peers' achievements, family outings, or online posts of leisure activities reinforced feelings of inadequacy. This perceived lack of enjoyment and opportunities in their own lives heightened the sense of "missing out" and contributed to lower emotional well-being.

4. Distraction

Adolescents often turned to digital media or other passive activities to distract themselves from loneliness, boredom, or distress. Some watched YouTube or listened to music to block intrusive thoughts or fill empty time. Although these distractions provided temporary relief, they inadvertently increased FOMO as engagement with digital content frequently exposed them to others' more vibrant lives.

5. Curiosity

Curiosity acted as a powerful motivator for participants' online actions. They explained feeling driven to check updates, stories, and messages to stay informed about friends' activities. This curiosity was often linked to social comparison and a fear of being left out of conversations or experiences. For some, curiosity was not just about interest but also caused anxiety about missing important social cues or information.

6. Habit

The use of social media and digital devices had become habitual and automatic for most participants. Scrolling, checking messages, or browsing feeds were daily routines rather than

deliberate actions. This habitual engagement reinforced dependence on technology and reduced time spent in meaningful offline interactions, indirectly sustaining a cycle of FOMO and emotional dissatisfaction.

7. Need for Connection (Family and Friends)

A recurring and significant theme was the need for emotional closeness and connection with family and friends. Many adolescents felt deprived of family bonding due to separation, parental work commitments, or institutional living arrangements. The lack of strong emotional ties increased their dependence on online relationships as substitutes, but these digital interactions often lacked genuine connection, leaving them feeling even more isolated.

8. Educational Purposes

Some participants reported using digital devices for educational or learning purposes, such as completing assignments or researching school topics. However, their usage often shifted into entertainment or social comparison. This blurred boundary between academic and leisure use led to extended screen time and exposure to FOMO-triggering content, as participants viewed others' more active or privileged lives online.

9. Distraction Techniques

To handle emotional discomfort, adolescents used various distraction techniques such as watching movies, playing games, listening to music, or sleeping. Some also talked or ate to avoid overthinking. While these activities provided temporary relief, they did not address the underlying emotional needs, leading to continued reliance on avoidance instead of emotional processing.

10. Social Support

A few participants highlighted the importance of supportive peers or caregivers in helping them manage their emotions. Sharing experiences or being listened to lessened feelings of exclusion and loneliness. This theme emphasises the protective role of social support, consistent with the positive psychology literature, in reducing the impact of FOMO through connection and belonging.

11. Self-Realisation

Some adolescents developed greater self-awareness about their emotions and behaviours. They realised that comparing themselves on social media and withdrawing worsened their sadness and envy. Although still emerging, this understanding marked the start of self-regulation and reflective thinking, indicating potential for growth through guided interventions that focus on self-esteem, gratitude, and mindfulness.

Development of the Peer Support Group Model

The peer support group model was created by combining key ideas from Self-Determination Theory (SDT) and the Broaden-and-Build Theory of Positive Emotions, establishing a theoretical basis for the intervention activities.

Application of Self-Determination Theory

Self-Determination Theory emphasises the fulfilment of three essential psychological needs: autonomy, competence, and relatedness, which encourage intrinsic motivation and psychological well-being (Ryan & Deci, 2020). These components were incorporated into the peer support sessions through activities designed to foster interpersonal learning and emotional resilience.

One such activity, the "FOMO Scenarios Roleplay," was carried out in Session 1. Participants were tasked with role-playing everyday social situations in which they might experience FOMO and with collaboratively discussing coping strategies. This activity promoted relatedness through peer interaction and emotional sharing, while strengthening competence as participants learned and practised new problem-solving skills. In line with Lovegrove Lepisto (2021), such collaborative learning environments foster self-awareness, social bonding, and communication skills, thereby creating a psychologically supportive space for adolescents.

Application of Broaden-and-Build Theory

The intervention also drew on the Broaden-and-Build Theory, which suggests that positive emotions expand cognitive and behavioural repertoires, fostering the development of lasting psychological and social resources (Stifter et al., 2019). Several activities were designed to evoke such positive emotional states.

- Coping Toolbox Creation: Participants designed a personalised "coping toolbox," filling it with enjoyable activities such as hobbies, sports, and journaling, as well as things they could turn to when experiencing FOMO. According to Mansourian (2021), engaging in meaningful leisure promotes emotional well-being and social connectedness, enhancing coping abilities.
- Mindfulness Exercise: During relaxation activities, participants practised the 5-4-3-2-1 grounding technique, helping them focus on the present moment and reduce intrusive thoughts. This mindfulness practice is supported by Sofia et al. (2023) and Johnson et al. (2021), who report that mindfulness significantly reduces negative emotional states and FOMO among adolescents, particularly in Generation Z.
- Gratitude Jar Activity: Participants identified and recorded things they were grateful for, placing their reflections into a shared "gratitude jar." This activity aimed to cultivate gratitude, a key positive emotion highlighted in Broaden-and-Build Theory. Prior research by Rosyida & Romadhani (2022) found that gratitude practices effectively reduce FOMO among digital-native adolescents by shifting the focus towards positive life experiences.
- Support Network Mapping: Recognising the importance of social connections in buffering against FOMO, participants developed support network maps to visually identify key supportive figures in their lives, whether friends, family, or caregivers. This activity encouraged adolescents to seek help from these individuals during moments of emotional vulnerability. Szawłoga et al. (2024) similarly emphasise that strong social connections serve as protective factors against the adverse emotional effects of FOMO.

Module Integration

The developed peer support group sessions included theory-based activities to target both intrapersonal and interpersonal factors contributing to FOMO. Through structured reflection, emotional skill development, and peer connection, the intervention aimed to create

an environment where adolescents could build lasting personal resources and reduce their reliance on external validation sources, such as social media.

Table 1: Table of Peer Support Group, No FOMO Zon

Module	Objective	Sessions	Activities	Duration
What is FOMO? Recognizing Its Impact	Help participants to identify and understand FOMO in their daily lives	1	Social Media Reality vs. Perception (Help participants critically analyse how social media contributes to FOMO)	20 Minutes
			Debriefing	5 Minutes
			FOMO Scenarios Roleplay (Participants act out relatable FOMO situations and discuss their reactions)	20 Minutes
			Debriefing	5 Minutes
			A letter of Self-Compassion (Participants write down an aspect of their life that make them happy and some aspect in their life that they dislike)	20 Minutes
			Debriefing	5 Minutes
Fun Ways to Cope with FOMO	Introduce healthy and enjoyable ways to cope with FOMO in their daily lives	2	Coping Toolbox Creation (Participants decorate their own toolbox on a paper by brainstorming fun and easy activities such as hobbies, sports, watching movie)	25 Minutes
			Debriefing	5 Minutes
			Relaxation Activity (Participants and introduce a simple mindfulness exercise like 5-4-3-2-1 grounding and breathing exercises)	15 Minutes
			Debriefing	5 Minutes
			Peer Tips Circle (Participants share coping tips that they found helpful and list them into a paper named "FOMO Fighters Strategies")	20 Minutes
			Debriefing	5 Minutes
Focusing on What Really Matters	Change from comparison to gratitude, connection and personal	3	Gratitude Jar (Participants write down or draw something they are grateful and put it in the "Gratitude Jar")	20 Minutes

goals		*Debriefing*	5 Minutes
		Support Network Mapping (Participants draw their support circle such as friends and family, discuss who they can turn to when they feel FOMO)	20 Minutes
		Debriefing	5 Minutes

Figure 4: Poster advertising the peer support group in the present study
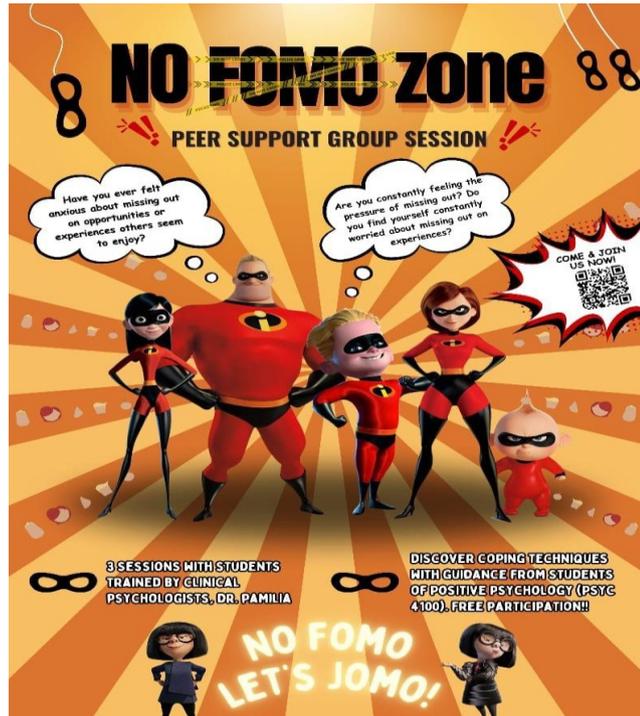
Sociodemographic Information

The peer support group mainly consists of adolescents aged 12 to 16. Most participants are Muslim and Malay, with the majority being female. Regarding educational background, five participants are from primary school, and six are from secondary school. Additionally, many participants reported living with their parents, while others reside with guardians such as grandparents or other relatives.

Pre-test and Post-test

Table 2: Table of Participants' Results Who Attended Three Peer Support Group Sessions

Participants	Pre-test	Post-test
P1	1.6	1.5
P2	1.4	1.6
P3	3.3	3.1

Based on the table above, Participant 1 (P1) scored 1.6 in the pre-test, while Participant 2 (P2) scored 1.4, and Participant 3 (P3) scored 3.3. After attending the three sessions, there

are slight variations in the scores. P1's post-test score is 1.5, P2's is 1.6, and P3's is 3.1. These results are inconsistent: P2 shows a marginal increase, suggesting a minor regression. Participant 2 might have experienced a slight increase in FOMO during and after the sessions. However, P1 and P3's scores decreased, suggesting some improvement from the intervention. Overall, the changes are subtle and minimal, reflecting varied effects of the interventions.

Table 3: Table of Participants' Results Who Attended Two Peer Support Group Sessions

Participants	Pre-test	Post-test
P4	1.0	1.4
P5	2.8	2.5
P6	1.7	2.0
P7	2.6	2.7
P8	1.3	2.3

From the table above, Participant 4 (P4), who attended two of the three sessions, showed changes in both pre-test and post-test scores. Their scores increased by 1.0 in the pre-test and 1.4 in the post-test. The increase of (+ 0.4 difference) suggests that the intervention may not be effective for P4, as their score worsened. Conversely, Participant 6 (P6) exhibited a significant rise in score from 1.7 to 2.0, indicating an increase in FOMO after attending only two sessions of the peer support group. Meanwhile, Participant 7 (P7) experienced a slight increase in the post-test score from 2.6 to 2.7, suggesting the session may or may not have been beneficial for the participant. Lastly, Participant 8 (P8) saw a notable increase in their FOMO score from 1.3 to 2.3 after the session ended. However, only Participant 5 (P5) showed a slight improvement, with their score decreasing from 2.8 to 2.5. Overall, four out of five participants who attended only two sessions showed an increase in their FOMO levels, suggesting that session duration may or may not be helpful.

Feedback from the participants

Moreover, to further reinforce the results, interview sessions were conducted with the participants after the programme to assess its effectiveness in understanding and managing Fear of Missing Out (FOMO). The researcher needs to identify and evaluate the strengths and weaknesses of the peer support group to enable more effective sessions in the future.

Participants provide many types of feedback. In the peer support group, most participants stated that they are happy and enjoy the sessions they have attended because of the researcher's engagement and support. As a result, they find it easy to understand FOMO in their daily lives and feel motivated to manage FOMO as adolescents. As two participants mentioned, *"I like it because it's fun to meet you and be given encouragement, and not to be too FOMO about others.", "I like how all of you treat everyone well, always encourage us, and are easy to understand."* and *"I believe I can strengthen relationships and learn new things."*

Besides that, two participants stated that the sessions helped them to understand and pay attention to the FOMO they had never experienced before. It helps them value the opportunity for self-reflection and personal growth. As they mentioned in their feedback, *"excellent because you provide a lot of ideas and attention,"* *"I learn a lot about FOMO*

throughout all these sessions," and *"you provide a lot of insight strategies to me for fighting with FOMO."* Moreover, some participants reported gaining positive insights that improved their emotional well-being. As they quoted in their feedback, *"I gain a lot of positive vibes, and I feel better than I did before."*

Lastly, several participants expressed their appreciation towards the researchers, stating they felt comfortable and supported throughout the sessions. Since all participants are adolescents aged 12-16, they found it easy to engage and trust in a nurturing environment. As the participants mentioned, *"all of you are so fun"*, *"all of you are so friendly and kind." "All of you are very cute and kind-hearted. I really like you. If there's fortune, may they have a long life and be granted good health. I hope we meet again in the best version of ourselves! And "nothing is lacking, everything is enough".*

The feedback provided was valuable regarding the effectiveness of the peer support sessions. Most respondents reported feeling happy and engaged in the programme, and that the activities and the way the programme was delivered helped them to understand FOMO in their daily lives and to learn to manage it more effectively.

Some participants noted that the sessions also helped them gain a fresh perspective and offered ideas and strategies they hadn't considered before, which they valued as opportunities for self-reflection and personal development. Others reported that the sessions made them feel positive and contributed to their emotional well-being. Several participants also expressed their appreciation to the facilitators, describing the sessions as supportive, fun, and encouraging, fostering a safe and comfortable environment for open interaction. These reflections indicate that, although no other quantitative measures were taken, the qualitative feedback demonstrates the potential benefits of the intervention in enhancing participants' awareness, resilience, and positive feelings.

DISCUSSION

This study examined the effectiveness of a peer support group intervention, based on Self-Determination Theory and the Broaden-and-Build Theory, in helping adolescents from an orphanage recognise, cope with, and shift their focus away from the Fear of Missing Out (FOMO). Through three structured sessions incorporating Positive Psychology practices, the intervention aimed to equip participants with emotional regulation strategies and social support tools to lessen FOMO in their daily lives.

The intervention involved eight adolescents, aged 12 to 16, who participated in activities such as social media reality-versus-perception exercises, FOMO scenario role-plays, mindfulness practices, gratitude reflections, and support network mapping. These activities aimed to promote self-awareness, emotional well-being, and social connectedness, which are fundamental elements of both theoretical frameworks.

Effectiveness of the Peer Support Group

Findings revealed mixed outcomes: the intervention was moderately effective for participants who fully engaged in all three sessions, but results were less consistent among those with partial attendance. Participants who attended all sessions showed slight reductions in FOMO scores, suggesting that consistent exposure to positive emotional practices and peer discussions may foster greater resilience and awareness regarding FOMO. These results align with the Broaden-and-Build Theory, which suggests that repeated positive emotional experiences can broaden cognitive perspectives and develop psychological resources for well-

being. Conversely, participants who attended fewer sessions experienced inconsistent changes, with some reporting an increase in FOMO. This variation may reflect missed opportunities to internalise key coping strategies and emotional regulation techniques presented during the sessions.

Potential Influences on Outcomes

Several factors could explain these mixed results. Firstly, peer conformity seemed to influence participants' engagement and self-reported responses. Observations during the sessions showed that some participants echoed their peers' answers or emotional expressions rather than offering genuine reflections. This tendency aligns with research on adolescent peer conformity, which emphasises its significant role in shaping behaviour and social responses (Cakirpaloglu et al., 2021). High levels of peer conformity may have affected both the reliability of the pre- and post-test assessments and the intervention's actual effect.

Secondly, inconsistent attendance at sessions probably reduced the intervention's effectiveness. Participants who missed one or more sessions were not exposed to essential elements, such as mindfulness practices and gratitude activities, which restricted their ability to use these coping strategies. This aligns with previous research indicating that incomplete participation in behavioural interventions often weakens their intended outcomes (Stripling, 2018).

Limitations and Recommendations for Future Research

Several limitations of the current study should be recognised. Firstly, the intervention consisted of only three sessions, which may not have been enough for participants to fully grasp Positive Psychology concepts or establish meaningful peer connections. Longer-term interventions with booster sessions could facilitate more sustained skill development and emotional growth.

Secondly, participant engagement levels varied, with some adolescents demonstrating passive participation. This passive behaviour, likely influenced by peer conformity, may have affected the authenticity of their learning and diminished the intervention's impact. Future research could address this by incorporating anonymous activities or individual reflections to foster more honest responses and reduce conformity pressure.

Thirdly, reliance on self-reported measures can introduce bias, including social desirability effects where participants might underreport their feelings to match perceived expectations. To improve the validity of future findings, it is advised to incorporate third-party observations, caregiver feedback, or behavioural assessments alongside self-reported data (Latkin et al., 2017).

Integrating an Islamic Perspective

From an Islamic perspective, the Fear of Missing Out (FOMO) can be tackled through fundamental spiritual principles such as gratitude (*syukr*), contentment (*qana'ah)*, and reliance on Allah (*tawakkul*). These values inspire individuals to focus on their blessings rather than what they lack.

As highlighted in Surah Ibrahim, verse 34:

"And He gave you of all that you asked for. If you should count the favours of Allah, you could not enumerate them."

This verse encourages contemplation of the abundance of divine blessings, counteracting the dissatisfaction and envy that often fuel FOMO. Incorporating spiritual reflection and gratitude practices based on Islamic teachings can provide an extra layer of emotional resilience for Muslim adolescents dealing with social comparisons and feelings of exclusion.

Overall, this study emphasises the potential of peer support groups, guided by Positive Psychology theories, to reduce FOMO and strengthen emotional resilience among adolescents in orphanages. However, consistent participation and personalised engagement are essential to optimise the intervention's benefits. Future research should investigate longer-term peer support models, incorporate spiritual frameworks where appropriate, and employ a broader range of assessment tools to understand adolescents' social-emotional development better.

CONCLUSION

This study investigated the effect of a peer support group intervention grounded in the Broaden-and-Build Theory (BBT) and Self-Determination Theory (SDT) on reducing Fear of Missing Out (FOMO) among adolescents in an orphanage. The intervention involved structured, theory-based activities such as role-playing, mindfulness, and gratitude exercises designed to promote social connection, emotional resilience, and self-awareness.

Findings revealed that adolescents who consistently attended all three sessions experienced a modest reduction in FOMO, indicating the intervention's potential to support emotional regulation and self-reflection through peer-based learning. Conversely, participants with partial attendance showed higher FOMO levels, suggesting that limited exposure, peer conformity pressures, and a short intervention duration may have prevented the complete internalisation of positive psychology concepts. Self-reported data may also have introduced response bias.

These results align with SDT principles, where increased relatedness was fostered through group bonding, and improved competence was observed as participants acquired coping tools through regular attendance. However, autonomy may have been constrained by attendance requirements and social conformity, which could have slowed overall progress. This interpretation aligns with Day et al. (2022), who highlighted that interventions combining autonomy-supportive and socially connective activities most effectively enhance self-regulation, and with Lemay et al. (2019), who found that higher autonomy satisfaction predicts lower FOMO and loneliness.

From an applied perspective, these findings emphasise practical strategies for educators and caregivers in classrooms and shelter homes. Structured peer programmes can help adolescents develop independent coping skills, emotional regulation, and problem-solving abilities through guided activities such as role-plays and coping toolkits. Similarly, practices of gratitude, group sharing, and mutual support can enhance relatedness and foster psychological resilience. Within an Islamic context, these outcomes align with the values of gratitude (syukr), contentment (qana'ah), and trust in Allah (tawakkul), thereby promoting both psychological and spiritual well-being.

In conclusion, this study shows that SDT and BBT together offer a helpful framework for designing peer-based interventions that tackle FOMO and foster emotional flourishing among vulnerable adolescents. Although the results are preliminary, they highlight the potential of positive psychology approaches to enhance autonomy, competence, relatedness, and positive emotion—essential components for sustained well-being. Future research should extend the intervention duration, include objective measures of change, and incorporate autonomy-supportive strategies to improve engagement and long-term effectiveness.

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Promoting Lifelong Learning Through Islamic Values: The Role of Muslim Women in Child Upbringing

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ABSTRACT

This study explores the role of Muslim women in promoting lifelong learning through the lens of Islamic values, particularly in the context of child upbringing. Drawing on Islamic teachings and educational philosophy, this research addresses the gap in understanding how Muslim women contribute to lifelong learning within the framework of Islamic values in the context of child rearing in Nigeria. It also aims to highlight the critical role that Muslim women play in shaping children's educational foundations and the impact of their efforts in fostering ongoing learning throughout their lives. By examining the experiences and perspectives of Muslim women in various educational settings, it seeks to uncover the unique challenges and opportunities they face in upholding Islamic values and promoting lifelong learning among children, using an in-depth analysis of data, a *descriptive-analytical approach, and a historical and descriptive methodology. This research aims to provide a comprehensive understanding of how Muslim women can effectively promote lifelong learning through Islamic values in child upbringing. The findings of this study have implications for educational policies and initiatives that aim to promote lifelong learning and empower Muslim women to play a vital role in shaping future generations. The recommendations derived from this study may include encouraging collaboration between educational institutions and Islamic scholars to integrate Islamic values into formal education curricula.*

Keywords: *Muslim women, Lifelong learning, Islamic values, Child upbringing*

INTRODUCTION

This paper explores the essential role that Muslim women play in promoting lifelong learning and integrating Islamic values into children's upbringing, especially within Nigerian society (Ahmed, 2020; Ibrahim, 2019). It examines the various contributions of Muslim women, highlighting their distinctive role in shaping educational methods, fostering character development, and encouraging a culture of continuous learning rooted in Islamic principles (Khan, 2021).

In Nigeria, where Islamic values greatly influence societal norms, understanding the complex relationship between Islamic teachings and educational practices is crucial (Ali, 2018). Muslim women, as educators and caregivers, play an essential role in embedding these values into child-rearing, thereby promoting academic knowledge and encouraging ethical and moral development (Abdullahi, 2019). The study explores the educational methods employed by Muslim women in Nigeria, analysing how these approaches help nurture lifelong learners and responsible citizens rooted in Islamic ethics (Oyekanmi, 2020). The link between Islamic teachings and modern educational theories provides insights into how Muslim women inspire

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children to view learning as a lifelong journey guided by moral principles (Rahman, 2021).

The distinct and influential role of Muslim women in shaping the educational landscape and fostering a culture of lifelong learning within Nigerian society (Musa, 2022). By recognising and celebrating their contributions, this study aims to encourage collaboration between educational institutions and Islamic scholars, promote community engagement, and raise awareness about the importance of lifelong learning and character development from an Islamic perspective (Ahmed, 2020).

METHOD

The article employs academic databases, a descriptive-analytical approach, and a historical-descriptive methodology. Library resources and online libraries serve as primary data sources, including books, scientific journals, and documents.

FINDINGS

This paper provides insights into how these educational practices develop a morally grounded, lifelong learning mindset in children. It also guides educators, policymakers, and parents on the importance of Islamic values in fostering lifelong learning and shaping future generations of Muslims. Moreover, it suggests that Muslim women should play a crucial role in promoting lifelong learning by embodying Islamic values such as patience, empathy, and perseverance.

Educational Approaches Promote Lifelong Learning among Nigerian Muslim Women

Nigerian Muslim women employ various educational strategies to promote lifelong learning and foster responsible citizenship. These approaches often incorporate Islamic values into educational practices, fostering a holistic view of education. For example, they may utilise storytelling and parables from Islamic teachings to communicate moral lessons and encourage critical thinking among children (Ahmed, 2020). Additionally, integrating experiential learning through community service and engagement with ethical dilemmas helps nurture empathy, social responsibility, and a sense of civic duty in learners (Ibrahim et al., 2019).

The educational strategies employed by Nigerian Muslim women focus on developing lifelong learners who are not only academically proficient but also uphold strong moral and ethical values. By integrating Islamic principles such as honesty, integrity, and compassion into their teaching approaches, these educators encourage a sense of purpose and commitment to ongoing learning among their students (Ali, 2018). Additionally, through collaborative and inquiry-based learning, they foster critical thinking, problem-solving, and a profound appreciation of knowledge as an ongoing pursuit (Hassan, 2021).

Nigerian Muslim Women's Application of Islamic Teachings for Lifelong Learning and Ethical Development

Nigerian Muslim women's application of Islamic teachings to lifelong learning and ethical development can be understood through the interplay of faith-based knowledge, community participation, and daily moral practice. Drawing on the Quranic emphasis on acquiring knowledge (*'ilm*) and personal growth, many women attend *halaqah* (study circles), mosque-based classes, and digital Islamic learning platforms, where they deepen their understanding of theology, jurisprudence, and contemporary ethical issues.

This learning is not solely intellectual; it becomes integrated into daily life, influencing family relationships, professional conduct, community leadership, and decisions regarding health, finance, and social responsibility. By continually engaging with Islamic principles such as *adl* (justice), *ihsan* (excellence), and *amanah* (trustworthiness), these women promote ethical decision-making and develop a strong moral compass, all while navigating cultural expectations, gender norms, and socio-economic realities. Their lifelong learning thus functions both as a spiritual duty and a pathway to empowerment, enabling them to contribute meaningfully to Nigerian society while remaining faithful to Islamic values.

Promotion of Lifelong Learning:

Nigerian Muslim women actively champion lifelong learning by highlighting the Quranic command to seek knowledge continuously (Al-Qur'an 20:114). They participate in personal growth and motivate others to pursue education throughout their lives (Sani & Ibrahim, 2020).

Ethical Development:

Islamic teachings provide a foundation for moral development among Nigerian Muslim women, emphasising values such as honesty, compassion, and justice (Al-Qur'an 2:177). They integrate these values into their conduct, promoting ethical behaviour within their communities (Abdullahi & Yusuf, 2018).

Role Modelling for Learning:

Nigerian Muslim women serve as role models for education by actively engaging in learning activities and inspiring others to appreciate education (Ahmed & Ali, 2019). Their actions foster a culture of learning and intellectual curiosity.

Community Engagement:

They engage with their communities to promote educational initiatives and programmes, emphasising the importance of education in personal and societal development (Bello & Ibrahim, 2021). This community involvement fosters a positive environment for lifelong learning.

Integration of Islamic Values:

Nigerian Muslim women incorporate Islamic principles into educational settings by including teachings on ethics, morality, and spirituality within curriculum design and educational activities (Muhammad & Musa, 2020).

Collaboration with Educational Institutions:

They collaborate with educational institutions to integrate Islamic teachings into formal education, ensuring that ethical principles are embedded in the learning process (Kabiru & Lawal, 2019).

Promotion of Critical Thinking:

Nigerian Muslim women foster critical thinking skills by encouraging inquiry, analysis, and discussion within an ethical framework based on Islamic principles (Hussain & Adamu, 2020).

Nigerian Muslim Women's Intersection of Islamic Teachings and Modern Education

Nigerian Muslim women play a crucial role in integrating Islamic teachings with contemporary education, creating a vibrant intersection that promotes holistic development and ethical awareness among students. Here is an exploration of how Nigerian Muslim women navigate this intersection:

Ethical Integration:

Nigerian Muslim women incorporate Islamic ethics into contemporary education by emphasising values such as honesty, integrity, compassion, and justice (Al-Qur'an 2:177). They demonstrate ethical behaviour and foster moral awareness among students (Abdullahi & Yusuf, 2018).

Holistic Education:

Islamic teachings advocate holistic development across spiritual, intellectual, emotional, and social dimensions. Nigerian Muslim women support a comprehensive education that cultivates all aspects of a student's being (Ahmed & Ali, 2019).

Critical Thinking and Inquiry:

Islam promotes critical thinking and independent inquiry as vital tools for acquiring knowledge and understanding (Al-Qur'an 6:151). Nigerian Muslim women integrate these skills into educational practices, fostering a culture of curiosity and analytical thought (Bello & Ibrahim, 2021).

Integration of Islamic Studies:

Nigerian Muslim women advocate for the incorporation of Islamic studies into the curriculum, offering students a deeper understanding of Islamic teachings alongside other academic subjects (Kabiru & Lawal, 2019). This integration encourages cultural appreciation and religious literacy.

Promotion of Social Justice:

Islamic teachings highlight social justice, equality, and compassion for marginalised communities (Al-Qur'an 4:135). Nigerian Muslim women strive to create inclusive and fair educational environments that uphold these principles (Hussain & Adamu, 2020).

Collaborative Approaches:

Collaboration among Nigerian Muslim women, educators, policymakers, and community leaders is essential for effectively integrating Islamic teachings into modern education (Muhammad & Musa, 2020). Joint efforts improve cultural sensitivity and responsiveness in educational practices.

The Role of Nigerian Muslim Women

Insights into the role of Nigerian Muslim women offer a nuanced understanding of their multifaceted contributions and responsibilities within society. Here are key insights into the diverse roles played by Nigerian Muslim women:

Family and Community Caregivers:

Nigerian Muslim women often serve as primary caregivers within their families and communities, nurturing children, supporting elderly relatives, and maintaining household well-being. Their role extends beyond domestic duties to encompass emotional support and familial cohesion (Abubakar & Ibrahim, 2019).

Educational Advocates:

Many Nigerian Muslim women advocate for education, both for themselves and for others. They actively promote educational opportunities for women and girls, advocate for girls' access to schooling, and participate in educational initiatives that empower individuals and communities (Usman & Mohammed, 2020).

Leadership in Business and Entrepreneurship:

Nigerian Muslim women are increasingly taking on leadership roles in business and entrepreneurship. They demonstrate innovation, resilience, and managerial skills in various sectors, contributing to economic growth and community development (Bello & Musa, 2021).

Cultural and Religious Preservers:

Nigerian Muslim women play a vital role in preserving cultural heritage and religious traditions. They actively participate in religious activities, contribute to community rituals and celebrations, and transmit cultural knowledge to future generations (Omar & Abdullahi, 2018).

Advocates for Social Justice:

Nigerian Muslim women are advocates for social justice and human rights, addressing issues such as gender equality, women's empowerment, and community development. They engage in advocacy, activism, and community organising to promote positive social change (Suleiman & Aliyu, 2020).

Health and Wellness Promoters:

Nigerian Muslim women contribute to health and wellness initiatives within their communities. They raise awareness of healthcare issues, participate in health education programs, and promote healthy lifestyles grounded in Islamic principles of well-being (Ibrahim & Haruna, 2019).

Educators and Mentors:

Many Nigerian Muslim women are educators and mentors, providing guidance and support to people of all ages. They contribute to educational institutions, religious schools, and community learning centres, encouraging intellectual growth and character development (Adamu & Hassan, 2021). These insights into the roles of Nigerian Muslim women highlight their diverse and valuable contributions to family life, education, business, culture, advocacy, healthcare, and community development.

CONCLUSION

In conclusion, Muslim women in Nigeria play a vital role in shaping the educational landscape and promoting a culture of lifelong learning guided by Islamic values. Their contributions as educators, mentors, curriculum developers, and community leaders are crucial in fostering holistic education and ethical growth among students and society at large.

This paper has explored the diverse roles and impactful initiatives of Muslim women

in enhancing educational practices, incorporating Islamic teachings, and fostering a love for lifelong learning. From shaping curriculum content to providing mentorship and advocacy, Muslim women educators in Nigeria are essential agents of positive change in the education sector. It is crucial to recognise and support the efforts of Muslim women educators by implementing recommendations, including professional development programmes, curriculum enhancements, community engagement initiatives, mentorship opportunities, research support, and recognition schemes. These initiatives will further enable Muslim women educators to continue their valuable contributions to education and ethical development in Nigerian society.

By working collaboratively and strategically, we can unlock the full potential of Muslim women educators to create an educational landscape that fosters lifelong learners and responsible citizens grounded in Islamic values.

RECOMMENDATIONS

The study promotes stronger collaboration between Islamic scholars and educational institutions to integrate Islamic values into formal education systems. It urges meaningful cooperation between these entities to embed Islamic principles in curricula and to provide training and resources for Muslim women to enhance their child-rearing skills.

This research addresses a gap in the literature by focusing on the role of Muslim women in Nigeria in promoting lifelong learning, a crucial yet often overlooked aspect of education. Therefore, it calls for the implementation of professional development programs for Muslim women educators in Nigeria, grounded in Islamic principles, that promote community engagement and dialogue.

The paper advocates collaboration with educational institutions and Islamic scholars to improve the Islamised curriculum, thereby promoting awareness of the importance of lifelong learning and character development from an Islamic perspective.

Muslim women educators should be encouraged to participate in research and to publish scholarly work on education, Islamic values, and lifelong learning. Support and mentor younger educators by offering guidance and professional development opportunities. Until the Nigerian Government recognises and celebrates the contributions of Muslim women educators through awards, incentives, and support networks.

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Religious Perspectives on Self-Compassion in Positive Psychology: Insights from Islam, Christianity, Buddhism, and Hinduism

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ABSTRACT

Self-compassion, a concept increasingly popular in positive psychology, is often viewed from a secular perspective despite its deep roots in religious and philosophical traditions. This paper explores self-compassion within the theological, ethical, and spiritual frameworks of four major religions: Islam, Christianity, Buddhism, and Hinduism. Drawing on sacred texts, doctrinal teachings, and religious practices, the study demonstrates how these faiths not only reflect but also extend Kristin Neff's model of self-compassion, which includes self-kindness, common humanity, and mindfulness. Each religion offers unique insights—Islam emphasises divine mercy and repentance; Christianity concentrates on grace, forgiveness, and transformation; Buddhism integrates loving-kindness and the universality of suffering; and Hinduism grounds compassion in the sacred self and the principles of karma and non-violence. The findings suggest that religious teachings frame self-compassion not merely as a psychological concept, but as a moral and spiritual obligation. This integration enriches the understanding of self-compassion and offers practical implications for culturally and spiritually sensitive mental health practices.

Keywords: *Self-compassion, Positive Psychology, Religious Perspectives, Mental Health, Mindfulness*

INTRODUCTION

Self-love, my liege, is not as vile a sin as self-neglecting (Shakespeare, 1599/2015, Act 2.4:73,74). This quote challenges the misconception that self-compassion is merely indulgent, emphasising that it is an essential part of life. Despite its recent popularity in positive psychology, the idea of self-compassion has long been present in literature, religion, and philosophical thought (Neff, 2003).

According to Neff (2016), self-compassion is a multifaceted concept comprising six elements that maintain balance in the face of suffering: self-kindness versus self-judgement, a sense of shared humanity versus isolation, and mindfulness versus over-identification. In essence, it involves increasing self-kindness, recognising common humanity, and practising mindfulness, while reducing self-judgement, feelings of isolation, and over-identification.

Self-compassion can be expressed differently depending on one's goal: being gentle and nurturing when aiming to promote self-acceptance or alleviate negative emotions, or being proactive, assertive, and decisive when the goal is to protect oneself, meet basic needs, or drive change (Neff, 2021). Self-compassion exists on a bipolar continuum, ranging from uncompassionate self-responding (UCS) to compassionate self-responding (CS) during times of hardship (Neff, 2022).

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Research on self-compassion indicates a strong association with well-being (Lee et al., 2021; Neff, 2022; Phillips & Hine, 2021; Shamsul Amri et al., 2024; Yang et al., 2022; Zessin et al., 2015). It also has a negative relationship with adverse mental states such as depression, anxiety, stress, psychological distress, and suicidal thoughts and behaviours (Helminen et al., 2023; Hughes et al., 2021; MacBeth & Gumley, 2012; Marsh et al., 2018; Suh & Jeong, 2021). Furthermore, studies have found that self-compassion is positively linked to happiness, life satisfaction, optimism, and adaptive coping (Bag et al., 2022; Ewert et al., 2021; Pastore et al., 2023).

Self-compassion in the context of positive psychology

Positive psychology emphasises human strengths, well-being, and flourishing rather than pathology (Seligman & Csikszentmihalyi, 2000). Within this framework, self-compassion is a key pathway to resilience and emotional stability. Neff's (2003) model aligns closely with the aims of positive psychology as it promotes adaptive responses to suffering through self-kindness, recognition of shared humanity, and mindfulness. Numerous empirical studies have shown that self-compassion enhances subjective well-being, life satisfaction, optimism, and coping skills while reducing anxiety, depression, and stress (Bag et al., 2022; Lee et al., 2021; Neff, 2022; Phillips & Hine, 2021). Therefore, self-compassion can be regarded as both a preventive and a restorative mechanism within positive psychology, fostering acceptance and motivation for personal growth.

By placing this concept within positive psychology, the present paper connects scientific and spiritual traditions, showing how religious worldviews can enhance our understanding of the role of self-compassion in human flourishing.

Although many religious teachings emphasise principles closely related to self-compassion, such as kindness, empathy, understanding, acceptance, patience, and forgiveness towards oneself (Gilbert & Irons, 2005; Koenig, 2012), research on self-compassion has long focused on a secular psychological perspective. Religion can significantly influence how individuals perceive suffering, derive meaning from adversity, and develop coping mechanisms consistent with their beliefs. Therefore, a deeper and broader understanding can be gained by examining self-compassion through a religious lens. This paper aims to bridge the gap by exploring how different religions, particularly the four major faiths, conceptualise and practise self-compassion from a religious standpoint. In doing so, it also seeks to assist professionals in working more effectively with adherents of these religious traditions.

Emerging insights on religious belief and self-compassion

Although research from a secular psychology perspective has largely dominated self-compassion literature, recent years have seen an increasing number of studies exploring how religious beliefs and practices may relate to self-compassion. These studies provide valuable insights into how religious individuals may differ in their experiences and practices of self-compassion compared to their non-religious counterparts. Several studies have identified a positive correlation between religiosity, spirituality, and self-compassion (Bodok-Mulderij et al., 2023; Ghorbani et al., 2017), and have shown that religious people tend to feel more connected when engaging with their religion (Brodar et al., 2015). Similarly, self-compassion among religious individuals correlates with the duration and frequency of their religious practices, such as prayer and meditation (de Souza et al., 2020).

Meanwhile, some studies suggest that how an individual interprets their faith or relationship with God plays a more significant role. For instance, Homan (2014) found that

low self-compassion was associated with insecure attachment to God. As such, those who perceive God as compassionate, nurturing, and accepting are more likely to extend the same compassion towards themselves. In contrast, those who see God as dismissive or punitive may adopt the same attitude towards themselves. Religiosity is associated with emotional experiences and engagement with religion, as well as with perceptions of God and self-compassion (Brodar et al., 2015; Exline et al., 2000, 2015). This demonstrates the complexity of the relationship between religion and self-compassion, as an individual's religious interpretations and emotional perspective are just as important as their actual religiosity.

However, despite this progress, research on self-compassion still tends to neglect how different religions conceptualise and teach self-compassion through their sacred texts, theological doctrines and practices. Hence, the following section explores how the four main religions, Hinduism, Buddhism, Islam and Christianity approach the idea of self-compassion.

METHODOLOGY

This paper uses a qualitative, conceptual, literature-based approach. Instead of collecting empirical data, the study synthesises insights from religious scriptures, theological writings, and scholarly literature to explore how four major religions—Islam, Christianity, Buddhism, and Hinduism—conceptualise and practise self-compassion. The analysis adopted an interpretive comparison method guided by Neff's (2003, 2016) tripartite model of self-compassion, comprising self-kindness, common humanity, and mindfulness. Each religion's teachings, practices, and philosophical principles were mapped onto these three components to identify similarities, differences, and unique theological extensions. Primary sources such as the Qur'an, the Bible, the Dhammapada, and the Bhagavad Gita, as well as secondary sources such as peer-reviewed articles and doctrinal commentaries, were examined. This interpretative synthesis approach fosters an integrated understanding that links psychological and spiritual paradigms, ensuring analytical rigour and relevance across disciplines.

FINDINGS

Religious Perspectives

Islam

In Islam, the term 'self-compassion' is not explicitly mentioned in the religious scriptures, but the Qur'an and Hadith do reference its attributes. Concepts such as compassion, mercy, forgiveness, repentance, reliance on God, and mindfulness are deeply rooted in Islamic doctrine and the life of a Muslim. Of the 99 names of God in the Islamic belief system, Al-Rahman (The Most Compassionate) and Al-Rahim (The Most Merciful) are the ones mentioned at the beginning of all but one chapter (surah) in the Qur'an. In fact, *Bismillah-ir-Rahman-ir-Rahim*, which means "to begin in the name of Allah Who is Most Compassionate and Most Merciful," is recited by Muslims at the start of all endeavours. It highlights the central role of divine compassion and mercy in Islam, applying to all humankind and the self (Malik, 2024).

The Qur'an emphasises that humans are inherently imperfect and prone to mistakes, yet always deserving of God's mercy and forgiveness. This is illustrated in Surah An-Nisa, "And it is Allah's Will to lighten your burdens, for humankind was created weak" (4:28), and Surah Az-Zumar, "Say, O Prophet, that Allah says, 'O My servants who have exceeded the limits against their souls! Do not lose hope in Allah's mercy, for Allah certainly forgives all sins. He is indeed the All-Forgiving, Most Merciful." (39:53). It encourages believers to show the same

kindness that God grants them, to seek forgiveness, and to keep moving forward instead of dwelling on self-blame. Muslims are advised not to give up or fall into despair, as their personal faults do not diminish their value in God's eyes. This approach exceeds Neff's model by grounding self-kindness in divine mercy rather than in human reasoning or emotional control. By cultivating self-compassion through forgiveness, individuals create a psychological space for emotional recovery (Venkatesh, 2024).

Similarly, the concepts of *tawbah* (repentance) and *tawakkul* (reliance on God) in Islam also emphasise accountability without dwelling on excessive self-blame or condemnation. *Tawbah* is regarded in Islamic psychology as a therapeutic approach to overcoming guilt and promoting mental healing (Rasool et al., 2024). The Qur'an strongly emphasises that God is always willing to forgive (*maghfirah*) or pardon (*afw*) His people, alleviating the mental burden of guilt. By seeking repentance, Muslims find peace, emotional relief, and the confidence to move forward in life without the weight of past transgressions. Rather than being trapped in a cycle of self-blame and shame, it encourages self-improvement. Meanwhile, *tawakkul* involves relying on God while taking the necessary steps to achieve goals; it balances a degree of passivity with proactive effort (Bano et al., 2025), similar to the idea of self-compassion, which acknowledges and accepts suffering while actively working to alleviate it. These perspectives align with the psychological concept of self-compassion, which involves an accepting, non-judgmental, and supportive attitude towards oneself rather than harsh self-blame during difficult times.

Islamic teachings also embody the idea of shared humanity through the concept of ummah, the global Muslim community united as one body. The hadith reported by Al-Nu'man ibn Bashir stated that:

> *The Messenger of Allah, peace and blessings be upon him, said, 'The parable of the believers in their affection, mercy, and compassion for each other is that of a body. When any limb aches, the whole body reacts with sleeplessness and fever.' (Sahih al-Bukhari, 6011; Sahih Muslim, 2586)*

It essentially explains the interconnectedness of believers and how pain is a shared, collective experience. Verses in the Qur'an that depict the universality of human suffering include Surah Al-Balad, "Indeed, we have created humankind in constant struggle" (90:4), and Surah Al-Baqarah, "We will certainly test you with a touch of fear and famine and loss of property, life, and crops. Give good news to those who patiently endure" (2:155). It emphasises that suffering is not personal and can also help to cultivate *sabr* (patience).

Moreover, mindfulness, a key component of self-compassion, has been practised by Muslims for centuries and can be regarded as a fundamental aspect of Islamic faith. The Islamic term for mindfulness is muraqabah, meaning "maintaining a constant awareness of Allah (SWT) throughout prayer and daily life." It involves paying close attention to one's thoughts, behaviours, and intentions, with a deep awareness of the consequences of one's actions (Aldbyani, 2025). Practices such as *zikr* (remembrance of God), du'a' (supplication), and salat (prayer) may serve to incorporate mindfulness into a Muslim's life. By regularly engaging in these practices, believers can find comfort, an opportunity to sit with their thoughts and feelings, acknowledge their difficulties, and build a gentler relationship with themselves.
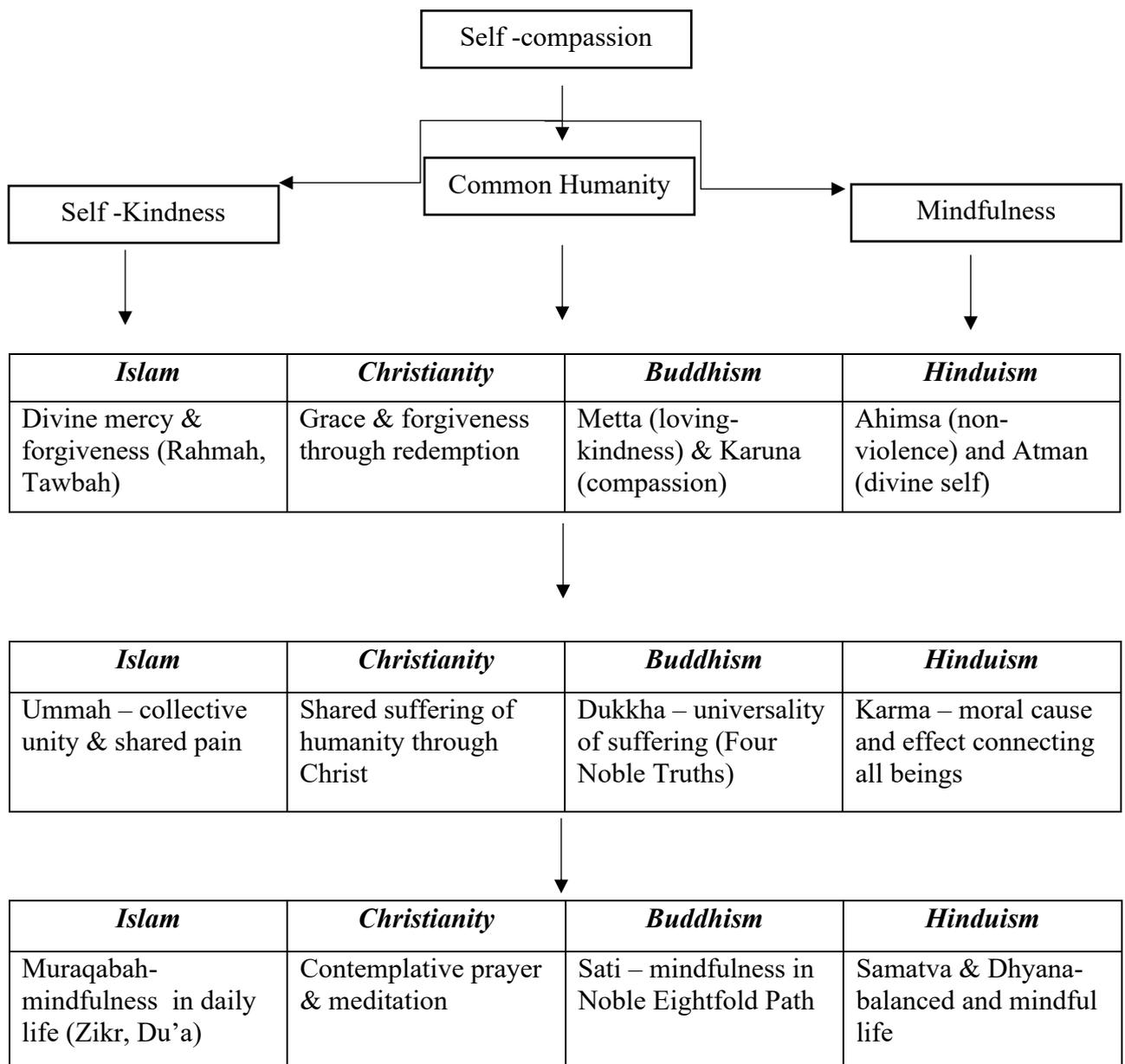
Previous studies have shown that positive religious coping, such as prayer, correlates with higher levels of well-being among Muslims. In contrast, negative religious coping strategies, like feeling guilty, are linked to distress and psychological turmoil (Javaid et al.,

2024). Faith can serve as a source of healing in Islam when viewed compassionately, promoting humility, acceptance, and personal growth, all rooted in divine mercy.

Islam underscores a distinct moral and religious imperative for self-compassion that extends beyond Neff's approach. Besides being emotionally harmful, it is also spiritually frowned upon to give up, harm oneself, or dwell in guilt. Therefore, self-compassion becomes an act of faith and enables one to imitate the qualities of a compassionate God.

See Figure 1 for an illustration of self-compassion and its three components across religious perspectives. The former discussion deliberates on Islam, whilst the subsequent paragraphs discuss other religions, including Christianity, Buddhism and Hinduism

Figure 1: Conceptual diagram illustrating self-compassion and its three components across religious perspectives.

Islam	*Christianity*	*Buddhism*	*Hinduism*
Divine mercy & forgiveness (Rahmah, Tawbah)	Grace & forgiveness through redemption	Metta (loving-kindness) & Karuna (compassion)	Ahimsa (non-violence) and Atman (divine self)

Islam	*Christianity*	*Buddhism*	*Hinduism*
Ummah – collective unity & shared pain	Shared suffering of humanity through Christ	Dukkha – universality of suffering (Four Noble Truths)	Karma – moral cause and effect connecting all beings

Islam	*Christianity*	*Buddhism*	*Hinduism*
Muraqabah-mindfulness in daily life (Zikr, Du'a)	Contemplative prayer & meditation	Sati – mindfulness in Noble Eightfold Path	Samatva & Dhyana-balanced and mindful life

Christianity

Self-compassion is not explicitly mentioned in religious scriptures, but Christian values such as divine love, mercy, forgiveness, redemption, and transformation may be closely connected to it. Compassion has been a central theme in Christian theology, and compassion for others is linked to compassion for oneself. This is reflected in the scripture verse "Love your neighbour as yourself" (James 2:8; Leviticus 19:18; Mark 12:31; Romans 13:9). According to Thomas Aquinas, one of the most influential theologians, we should show more compassion to our spiritual nature than to others to empathise and offer compassion (Barad, 2007). This centres around the idea that compassion for others may be difficult without a healthy psyche or soul. Barad supported this by stating that "How can one give what one does not have? To show compassion to another, a person must first love herself. In fact, our compassion for others is derived from our love and compassion for ourselves" (p.27). Therefore, within Christian thought, caring for oneself is fundamental to leading a compassionate life.

Moreover, Aquinas also used the word misericordia (mercy) as a synonym for compassion (Barad, 2007). Christian doctrine centres on God's grace and mercy toward humankind. The Bible clearly states that everyone sins and falls short of God's glory (Romans 3:23), separating us from Him, but it does not define the whole nature of a person's identity. The very next verse explains that God's grace, through the sacrifice of Jesus Christ, has made it possible for humankind to be declared righteous and sinless (Romans 3:24). Furthermore, the verse "but God showed His great love for us by sending Christ to die for us while we were still sinners" (Romans 5:8) emphasises the idea that God loves humans as they are. It is not about deserving or earning love through one's efforts or actions. The concept here is that individuals should confront their shortcomings not with constant judgment but with the same grace, forgiveness, and kindness that God extends to them.

An example of an incident in the Bible that illustrates how God doesn't allow one to dwell in shame and guilt is the story of Peter. Peter, one of Jesus's disciples who boasted about his loyalty to Him (John 13:37), only to later deny knowing Him three times on the same night (John 18:15-18;25-27). Afterwards, Peter was said to have wept bitterly (Matthew 26:75). However, Jesus didn't leave Peter to wallow in his guilt and self-pity; instead, after His resurrection, Peter was given the chance to affirm his love three times (John 21:15-19), and he went on to preach the gospel. The story of the Prodigal Son in the Bible also demonstrates this (Luke 15:11-32). These narratives emphasise redemptive transformation.

The element of common humanity in self-compassion is also reflected in Christian doctrine through the life of Jesus Christ. Christians believe Jesus is both God and man, experiencing all the ordinary, non-sinful limitations of humanity (Colossians 2:9). The Bible describes him as having experienced hunger (Matthew 4:2), thirst (John 4:7; 19:28), tiredness (John 4:6), sorrow (Matthew 26:37), shedding tears (Hebrews 5:7; John 11:35), and dying brutally (Isaiah 53:3-12). In this sense, one is not alone in their suffering or trials and tribulations of life, as Jesus suffered too. These experiences also affirm his identification with human suffering. He can sympathise with people's suffering because he's gone through it all as well. The concept of common humanity is embedded in his life through shared suffering, solidarity, compassion, and unwavering presence with those who struggle, serving as a reminder to his followers.

Meanwhile, the idea of mindfulness also resonates within Christian spiritual practice. In Christianity, mindfulness is understood as "about making time to turn our whole attention

to God so that we can hear and abide in his voice above the chatter and stress of our lives" (Trammel & Trent, 2021, p. 17). Christians have practised mindfulness for centuries through meditation, prayer, and contemplation. Modern monastic traditions in Christianity, such as Contemplative Prayer and Lectio Divina, emphasise meditation, stillness, and silence (Trammel & Trent, 2021). Therefore, the practice of mindfulness in Christianity is closely connected to self-compassion.

In summary, although the explicit term 'self-compassion' does not appear in Christian scripture, it is reflected in Christian theological values and practices such as divine grace, mercy, and mindful attentiveness. Self-compassion in Christianity can be seen as an act of receiving grace, of allowing oneself to be seen, forgiven, and transformed by divine love. It broadens Neff's framework by including a covenantal relationship with God.

Buddhism

The idea of self-compassion originates from Buddhist philosophy, which emphasises compassion for others (Neff, 2003). In Buddhism, developing metta (loving-kindness) and karuna (compassion), directed both inwardly towards oneself and outwardly towards all beings, is closely linked to self-compassion (Trang, 2025). The Karaniya Metta Sutta also references self-compassion through the verse, "so one should cultivate this boundless love to all that live in the whole universe" (Sutta Nipata 1.8), which includes oneself.

The first of the Four Brahma Vihara meditation techniques that Buddha taught to foster positive emotions is called metta bhavana, followed by karuna (compassion), mudita (joyful appreciation), and uppekha (equanimity) (Feldman, 2017). Metta bhavana, also known as the meditation of loving-kindness, is a fundamental practice in Buddhism. It begins by cultivating warm, compassionate thoughts for oneself before gradually extending them to others. In this way, loving-kindness serves as the foundation for cultivating compassion. Moreover, research supports this, as loving-kindness meditation has been found to calm the inner critic, reduce self-criticism, and boost self-acceptance (Shahar et al., 2015). Some verses in the Dhammapada also reflect on the concept of self-compassion, such as "He should do himself as he would advise another (to do), being well-trained, he could surely train (another), for it is said the self is difficult to train" (V. 159), "For the self is the friend of self, for what other friend would there be? When the self is well-trained, one finds a friend that is hard to find" (V. 160), and "One should not neglect one's own good for another's, however great; knowing what is good for oneself one should be intent on that good" (V. 166).

Buddhist teachings also relate to self-compassion through the concept of dukkha (suffering). Dukkha is one of the Four Noble Truths taught by Buddha, which recognises that suffering is an inevitable aspect of life (Samyutta Nikaya 56.11). Buddhism encourages individuals to accept suffering with gentle awareness rather than denying or resisting it. Buddhism views suffering as a path that leads towards liberation. Since suffering is seen as universal, one can release feelings of isolation and embrace shared humanity.

Mindfulness (sati) is deeply rooted in Buddhism, as modern mindfulness originates from Buddhist philosophy. It is described in the Noble Eightfold Path, a set of practices in Buddhism aimed at achieving enlightenment. According to Van Gordon et al. (2015), mindfulness is the seventh element of the path and is part of the interconnected components that work together to achieve Buddhism's ultimate goal: the ending of suffering. Mindfulness is practised by carefully observing the body (kaya), feelings or sensations (vedana), mind or consciousness (citta), and mental objects or phenomena (dhamma). Therefore, the aspect of

self-compassion that involves maintaining balanced awareness of unpleasant feelings is closely linked to mindfulness in Buddhism.

One of Buddhism's notable teachings is the concept of anatta (non-self). They hold that there is no permanent soul or self that defines one's fundamental essence, since humans are bundles of psychophysical processes (kandhas) that are subject to constant change and impermanence (Segall & Kristeller, 2023; Williams, 2000). While Buddhism teaches that clinging to a fixed self is the source of suffering, Neff's approach still depends on a coherent sense of self to direct compassion. Therefore, self-compassion in Buddhism can be paradoxical.

Buddhism provides a broad framework for addressing personal difficulties through kindness, patience, and nonjudgmental awareness, rooted in its teachings on the universality of suffering, mindfulness of experience, and the intentional cultivation of loving-kindness. Self-compassion in this context differs from Neff's approach, as it has a more transcendental goal (nirvana), viewing it as a means to escape the cycles of suffering and rebirth rather than merely to enhance well-being.

Hinduism

Hinduism offers a nuanced and comprehensive view of the self that naturally encourages compassion. While the term self-compassion is not explicitly stated in Hindu scriptures, the concepts of kindness, acceptance, and inner peace remain central to their teachings. A solid framework for understanding self-compassion is presented by the concepts of atman (the true self), karma (action and consequence), ahimsa (nonviolence), and samatva (equanimity).

One of the primary philosophical schools of Hinduism, Advaita Vedanta, asserts that the individual self (Atman) is not separate from the ultimate reality (Brahman) (Vedanta Society, 2002). Brahman is another term for the concept of God, the Divine, or the Absolute. This non-dualistic philosophy is described as "That which is the finest essence—this whole world has that as its Self. That is Reality. That is Atman (Self). That art thou (Tat Tvam Asi), Śvetaketu" (Chandogya Upanishad 6.8.7). From this perspective, all beings are ultimately manifestations of a single divine nature. This insight reinforces the belief that one is inherently deserving of compassion, regardless of external circumstances, and fosters a deep sense of inner dignity (Aithal & Ramanathan, 2024). Furthermore, the atman is described as eternal, pure, and unaffected by suffering (Bhagavad Gita 2:20). This viewpoint encourages individuals to look beyond their temporary setbacks and hardships and recognise their enduring worth. Consequently, people are encouraged to cultivate a kind, forgiving attitude towards themselves by connecting with the eternal self rather than transient worldly experiences. In Hinduism, self-compassion enables one to recognise the divine within.

The Hindu scripture also underscores the importance of self-care and mental growth. This is demonstrated in the verse, "One should elevate oneself by oneself self, One should not ever lower oneself, And surely self alone is one's friend, And self alone is one's enemy." (Bhagavad Gita 6:5). It highlights the idea that taking responsibility for oneself means becoming friends with oneself rather than feeling shame or punishment. This is followed by the verse, "For him who has won over his self, Who is eternally peaceful within himself Heat and cold are very much alike, And so are sorrows and happiness, And honour and dishonour and he would…" (Bhagavad Gita 6:7), which reflects the stability and acceptance central to self-compassion. In this context, individuals can respond to suffering without becoming

emotionally overwhelmed, and this response introduces a spiritual dimension by grounding steadiness in self-mastery.

Moreover, according to Hindu doctrine, suffering often results from past deeds through the principle of karma. However, it is not regarded as a punishment or a process of retributive judgment (Whitman, 2007), but rather as an opportunity for learning and growth. According to Whitman (2007), this belief encourages the acceptance of suffering as a natural part of life and the understanding that it is not arbitrary. They believe that suffering serves to repay the debt for past misdeeds and that the current situation is the appropriate one for their soul's past actions. Self-discipline (tapas) and self-inquiry (atma-vichara) are practices that help individuals accept responsibility for their acts without harsh self-criticism. This also reinforces the idea that suffering is not personal or something to be ashamed of; rather, it is a universal aspect of being human that should be met with understanding rather than isolation or self-judgment. Consequently, karma becomes a tool for growth and development rather than a source of guilt or shame, promoting a self-compassionate perspective that recognises mistakes as a necessary part of the spiritual journey.

Ahimsa (nonviolence), one of the fundamental teachings in Hinduism, extends beyond actions to encompass mental and emotional nonviolence toward others and oneself. Non-violence in one's thoughts and intentions is called mental ahimsa, while managing and controlling one's emotions to avoid causing suffering or harm to oneself and others is known as emotional ahimsa (Aithal & Ramanathan, 2024). This involves avoiding harmful or destructive thoughts and cultivating positive emotions, such as love, compassion, and joy, toward oneself and others. Regarding self-compassion, an individual avoids harsh self-judgment or destructive self-talk and instead develops kindness towards their own mind and body.

Moreover, the mindfulness component of self-compassion aligns with equanimity (samatva), another principle articulated in the Bhagavad Gita. This is demonstrated in the verse where Krishna states, "perform your duty equipoised, O Arjuna, abandoning all attachment to success or failure" (Bhagavad Gita 2:48). Samatva calls for maintaining a state of balance regardless of circumstances. According to Pandey et al. (2024), samatva entails avoiding intense emotional outbursts, maintaining composure amid life's fluctuations, and fostering a balanced perspective on both positive and adverse events. This non-reactive approach enables individuals to observe their experiences without becoming entangled in their feelings or over-identifying with them.

Another essential aspect of Hinduism is the spiritual practices of meditation (dhyana) and yoga, which are closely related to modern mindfulness. According to Radhakrishnan (1989), yoga, derived from the word yog (to join), is an ancient Indian practice involving physical, mental, and spiritual discipline that helps individuals break free from a cycle of suffering. Yama (restraint), niyama (discipline), asana (posture), pranayama (breath control), pratayahara (withdrawal of the senses), dharana (attention), dhyana (meditation), and samadhi (deep absorption) are known as the eight angas (limbs) of yoga (Yoga Sutras 2:29). Meanwhile, the various types of meditation include the third eye meditation, Chakra meditation, mantra meditation, tratak meditation (fixing gaze on a particular object), Nada Yoga (sound meditation), Tantra, Sahaja Yoga, Raja Yoga, and Kundalini meditation (Gairola & Singh, 2023). These practices may aid in cultivating self-awareness, acceptance, and inner harmony. Furthermore, mindfulness here is more than merely being aware of the present moment; it is about recognising one's divine nature despite shifting emotional and mental tides.

In summary, Hinduism encourages self-compassion by recognising the divine self, the transformative power of karma, non-violence, and equanimity. It offers a timeless approach to cultivating a compassionate self by inspiring individuals to live mindfully, love themselves as divine beings, and overcome life's challenges.

DISCUSSION

This paper further breaks down self-compassion into its three sub-components: self-kindness, common humanity, and mindfulness, and analyses how each is reflected across the four religions.

- Self-Kindness: Islam emphasises divine mercy (*rahmah*) and forgiveness; Christianity reflects God's grace and redemption; Buddhism cultivates loving-kindness (*metta*) towards oneself; Hinduism promotes gentle self-acceptance through ahimsa (non-violence) and recognition of the divine self (atman).
- Common Humanity: Islam's ummah concept, Christianity's shared suffering through Christ, Buddhism's dukkha and universal interdependence, and Hinduism's karma illustrate collective connectedness in human experience.
- Mindfulness: Each faith fosters present-moment awareness, muraqabah (Islamic mindfulness), contemplative prayer in Christianity, sati in Buddhism, and meditative practices like dhyana in Hinduism, all grounding self-awareness in spirituality.

Examining the concept of self-compassion across the four major religions helped identify elements that extend beyond Neff's (2003) conceptualisation, namely, beyond the intrapersonal and cognitive domains. The four main religions discussed in this paper (Islam, Christianity, Hinduism, Buddhism) were found to share common ground regarding Neff's three components of self-compassion: self-kindness, common humanity, and mindfulness. Additionally, they also deepen and enrich our understanding of self-compassion by offering spiritual, theological, and moral insights.

Firstly, the root of self-compassion emphasises the differences across religions and Neff's theory. While self-compassion in Neff's model may be cultivated internally through mindfulness and cognitive reframing, the presence and nature of the Divine or transcendent reality play a more significant role across religious traditions. For example, in both Islam and Christianity, compassion for oneself can be understood through the belief that God loves, forgives, and accepts us. The concepts of divine grace, mercy, and unconditional love motivate individuals to treat themselves kindly after an unfortunate event or wrongdoing. In other words, if God can forgive us, why can't we forgive ourselves? Meanwhile, in Buddhism, self-compassion is regarded as part of compassion for all beings in the pursuit of enlightenment. In contrast, Hinduism supports self-compassion by viewing the self as sacred. Therefore, these religious teachings frame self-compassion more as a form of worship, obedience, devotion, or spiritual duty rather than merely a psychological strategy.

Next, the emphasis on moral and spiritual transformation in religious teachings is compared with Neff's model. It goes beyond viewing self-compassion as merely acceptance or healing, seeing it instead as a pathway to growth. While Neff highlights the acceptance of suffering without judgment, these religious doctrines also emphasise development and change. They encourage believers to be self-compassionate while also being accountable for their actions and fulfilling their moral duties. In the context of these religions, self-compassion is presented as a foundation for renewal: through the Islamic concept of *tawbah*, the Christian concepts of grace and redemption, the Hindu and Buddhist idea of karma, and the focus on liberation. From this perspective, self-compassion entails recognising the potential for renewal

and moral improvement.

Additionally, self-compassion from a religious perspective differs in that it not only focuses inward toward the self but also considers the social dimension. It is viewed as a prerequisite for developing compassion towards others and fulfilling one's duties. This is evident in the Christian teaching of 'loving your neighbour as yourself', which implies that compassion begins with oneself, and in Islam's emphasis on the capacity to make meaningful contributions to the ummah. Both Hinduism and Buddhism hold that self-compassion is essential to serving others, thereby making it a moral obligation.

Furthermore, these religions also address the spiritual dangers of despair or self-condemnation. Islam and Christianity both warn against losing hope in divine mercy or God's mercy, as it could be interpreted as a form of spiritual deviation. Conversely, excessive self-criticism could be viewed as a barrier to spiritual growth in Buddhism and Hinduism. In fact, all these religious teachings encourage self-reflection, but not in a self-deprecating manner. Instead, it should be rooted in hope, repentance, and trust.

Finally, all religions promote self-examination or introspection through spiritual practices such as prayer, confession, meditation, and mindfulness. For example, Islamic muraqabah, Buddhist mindfulness, and Hinduism atma-vichara guide individuals to realign the self with the divine will or spiritual purpose through gentle self-examination. They are not merely tools for awareness; they also add moral depth to self-compassion.

From a positive psychology perspective, these religious interpretations offer a broader view of self-compassion as a multidimensional strength. While positive psychology usually regards self-compassion as a personal emotional skill, religious traditions place it within a wider moral and spiritual framework that emphasises meaning, purpose, and transcendence, key areas of flourishing identified in the PERMA model (Seligman, 2011). Therefore, integrating religious wisdom into positive psychology not only anchors self-compassion in cultural and ethical contexts but also broadens its application beyond individual well-being to include communal and spiritual well-being. Examining self-compassion through religious teachings further deepens understanding and reveals how it may be interpreted and practised differently across religions. It also provides valuable insights for culturally sensitive mental health practices and highlights the importance of incorporating spirituality into the study and practice of self-compassion.

CONCLUSION

This paper has explored self-compassion from the viewpoints of four major religions: Islam, Christianity, Hinduism, and Buddhism. Although all four religions incorporate Neff's components of self-compassion—namely self-kindness, shared humanity, and mindfulness—they also offer distinct theological, ethical, and spiritual perspectives that deepen the understanding of what it means to be compassionate towards oneself. It is regarded as a sacred duty grounded in divine love, moral responsibility, and spiritual development.

Notably, the purpose of this paper is not to compare these religious traditions but to emphasise how each religion presents distinct values and practices that extend beyond a secular psychological understanding of self-compassion rooted in Neff's model. This reflects a more holistic approach to self-compassion, recognising the significance of spirituality, moral development, and cultural context.

These insights also have implications for psychologists, educators, and mental health

practitioners working in multicultural and faith-based settings, as they enhance their understanding of each religion and promote more culturally responsive, spiritually sensitive, and ethically grounded approaches. Future research should continue to investigate how religious worldviews can enrich positive psychology.

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People's Perception of Pollution of Communities and Ecosystems: A Qualitative Study in Kuala Kedah, Malaysia

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ABSTRACT

Pollution is a global challenge that threatens human health and ecosystems. Understanding public perception is vital for developing effective policies and promoting sustainability within communities. This study aims to explore local perceptions of pollution affecting communities and ecosystems in Kuala Kedah, Malaysia. It was conducted using a qualitative approach with purposive sampling, and data were collected through semi-structured in-depth interviews. The research examined the experiences, causes, and impacts of pollution on the social, economic, and environmental aspects of local life. Results indicated that pollution in Kuala Kedah mainly originates from human activities, impacting the community's social and economic well-being. The study highlights the importance of public participation in pollution management and offers recommendations for policymakers, academics, and researchers.

Keywords: *Pollution, Community, Ecosystems, Public perception*

BACKGROUND OF THE STUDY

Uncontrolled industrialisation and urbanisation contribute to environmental degradation, leading to air pollution, contaminated water, waste mismanagement, and soil pollution (Ukaogo et al., 2020). This environmental pollution has caused serious problems, making it one of the most significant societal issues of the modern era. Previous research has demonstrated that pollution affects ecosystems; more importantly, it also impacts communities and individuals who rely on nature for their livelihoods, such as farmers and fishermen. The research conducted by Chin et al. (2023) found that disparities in awareness of pollution, arising from differences in education, socioeconomic status, and cultural backgrounds, hinder society's efforts to reduce environmental pollution. Therefore, understanding people's perceptions helps elucidate the social and economic impacts of pollution, enabling the development of effective methods and policies to prevent environmental contamination.

A study examining people's perceptions of pollution across different groups, including local tourists, residents, fishermen, and farmers, should be conducted to understand pollution awareness from diverse viewpoints. In this research, the perceptions of local people in Kuala Kedah, Malaysia, towards pollution were examined, particularly its socio-environmental implications.

Pollution is defined by the United Nations (n.d.) and the University of Maryland Centre for Environmental Science (n.d.) as the presence of 'substances and/or heat' of any type, location, and amount in the air, water, or land, which can cause environmental consequences, including harm to humans, animals, and plants. Mandasari and Anggariyani (2024) noted that

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there are three types of pollution: water, air, and soil.

Water pollution results from human activities that alter the quality of water bodies, including lakes, rivers, seas, and groundwater. Air pollution occurs when toxic chemical substances are present in the air, causing discomfort and risks to humans, animals, and plants, as well as property damage. Soil pollution is caused by human-made chemicals that alter the natural composition of soil.

LITERATURE REVIEW

Previous empirical studies on pollution have provided insights into the relationship between public perception and ecosystems. For example, Omoyajowo et al. (2021) used a quantitative approach to examine public perception, understanding, and sensitivity to microplastic pollution in Lagos Lagoon. A random sample of 120 questionnaires was administered to students, residents, and fishermen, representing 140 respondents. The study's findings indicated that most respondents reported awareness of microplastic pollution. It also noted that most respondents recognised microplastic pollution as a recent issue that could harm human health and recommended that the government take action to educate the public about the impacts of mismanaging plastic waste through campaigns.

Additionally, Maione et al. (2021) carried out an empirical study on public perceptions of air pollution in Europe. This research compared people's perceptions of pollution sources with actual conditions in seven European countries. The study used a quantitative approach, with 16,101 respondents completing the survey, representing diverse socio-economic and political backgrounds across European society. The respondents came from different polluted environments in each country.

The findings showed that the industrial and transportation sectors were the main sources of pollution in all nations. However, respondents' awareness of pollution sources varied by education level and knowledge of pollution. The study also found that age, gender, and place of residence influenced perceptions of air pollution, with these effects remaining consistent across different socioeconomic groups and countries. This indicated that many individuals were not fully aware of the origins of air pollution.

Bakari et al. (2021) investigated the effect of pollution on economic growth in Tunisia. Using annual data from 1961 to 2015, the researchers found that pollution negatively affected long-term economic growth. However, they also noted that the effect on Tunisia's economy was relatively limited, as there remained opportunities to address and mitigate the issue. Additionally, Karamipour and Sarikhani (2023) pointed out that global natural resources face severe challenges due to overexploitation, which could compromise the rights of future generations and threaten the survival of living organisms on Earth.

The study by Xuan et al. (2023) found that agricultural activities, such as excessive use of pesticides and fertilisers, were the main contributors to soil and water pollution. Furthermore, socioeconomic disparities, especially among lower-income communities, influenced environmental awareness and behaviour, resulting in these groups facing a disproportionate pollution burden.

The lack of infrastructure for managing plastic waste leads to mismanagement among villagers, who often burn or dump waste directly into the ocean. Plastic pollution has also threatened villagers' livelihoods, including fishing and seaweed farming (Phelan et al., 2020). Bidayani (2021) stated that fishermen were affected by coastal degradation resulting from tin

mining, which led to coastal pollution. These fishermen rely on traditional methods, simple technology, and limited fishing coverage. To support their families, many have additional occupations beyond fishing because of coastal pollution. A study on river pollution in Terengganu found that local people's negative attitudes and behaviours, such as waste dumping, contribute to it (Ismail et al., 2023).

THEORETICAL FRAMEWORK

Julian Steward (1937) explains the relationship between culture and environment within an anthropological framework of cultural ecology. The framework holds that the natural environment influences the cultural practices of societies, from primitive to industrial. The difference between human and social ecology in cultural theory is that the latter focuses on cultural traits and patterns to describe cultural-environmental circumstances rather than using general principles (Steward, 2005, p. 5).

In general, the theory explains how the environment influences human society and behavioural patterns, enabling adaptation to resources, technology, and social organisation, and outlines the problems and solutions. The environment plays a vital role in shaping human society and behavioural patterns, as individuals adjust to resources, technology, and social organisation. The idea suggests that culture is central to economic and subsistence activities. Culture affects various aspects of society, including technology, land use, and land tenure. However, cultures may change over time in different environments, requiring human societies to adapt to technological and productive shifts.

According to Beck (1992), modernisation has given rise to new forms of global risk that require societal adjustments. Ulrich Beck introduced the concept of the risk society in his book 'Risk Society: Towards a New Modernity'. The idea highlights the unknown and unintended consequences that become dominant forces in history and community. Beck notes that most modern risks are created by human activities such as climate change, pollution, nuclear, and radioactive hazards. Industrial pollution causes environmental degradation, harms ecosystems, and affects human health and social life. Contemporary pollution is often considered invisible because it requires a scientific approach to identify chemicals such as radioactive and nuclear substances. Beck (1992) emphasised that society faces pollution due to technological and industrial development. Regarding class-specific risks, he noted that people living in lower-income areas, such as those near industrial sites, are often exposed to various pollutants.

Human activities and natural disasters (i.e., storms, floods, wildfires, volcanoes, and earthquakes) contribute to pollution (United Nations, 2023). Zahoor and Mushtaq (2023) argue that water pollution results from agricultural activities, including the use of chemicals in pesticides and biosolids. Meanwhile, Taha et al. (2021) found that microplastic pollution was affecting marine organisms in Terengganu, Malaysia. This pollution arises from various human activities, including tourism services, commercial fishing, seafood processing, recreational pursuits, sand mining, boat manufacturing, construction, and the operation of coastal businesses such as restaurants.

In summary, the researchers suggest that microplastic pollution harms marine life and ecosystems. Panigrahi and Pattnaik (2020) reported the impact of water pollution on people's livelihoods. Qu (2020) found that sewage discharges from certain chemical companies have become a common source of water pollution in coastal cities such as Shenzhen, China. Additionally, the increased use of chemicals in industrialised countries has led to the

contamination of crops and vegetation (Steven et al., 2020). Furthermore, the Saraswati and Kunti Rivers have been affected by pollution from both natural disasters and human activities. Consequently, residents who rely on these rivers, particularly fishermen, have been unable to meet their needs due to reduced fish production. A similar report by Panigrahi and Pattnaik (2020) highlights that river pollution causes ecological imbalances and threatens the socioeconomic status of fishermen.

On the other hand, Ritchie et al. (2023) believe that waste mismanagement contributes to pollution. In their study, they estimated that between 1 and 2 million tonnes of plastic waste are in the oceans, posing a threat to marine species and ecosystems. Ibrahim and Mat Noordin (2020) found that plastic helps reduce food waste, but illegal dumping and improper handling of plastic contribute to ocean pollution. The increased use of everyday plastic products, such as takeaway food packaging, straws, cups, and spoons, contributes to plastic pollution in Nigeria (Dumbili & Henderson, 2020).

According to the Health Effects Institute (2024), burning fossil fuels and biomass, among other things, causes air pollution that later leads to greenhouse gas emissions and global warming. According to Puteh et al. (2024), open burning is a major contributor to air pollution in Malaysia, driven by farmers' traditional practice of burning crop residue to clear cropland for the next crop. Hu and He (2023) supported the view that climate change and air pollution in China are increasing due to the lack of individual prevention strategies and effective governing policies.

The United Nations (2023) emphasises that pollution leads to productivity losses, increased healthcare costs, and ecosystem damage. The impact of pollution on human health is significant, particularly among children, leading to increased health care costs and economic disparities. It also threatens fundamental human rights globally, including the rights to life, health, food, water, sanitation, housing, development, and a healthy environment.

Zahoor and Mushtaq (2023) highlighted that pollution is a significant issue that has disastrous impacts on the environment, human well-being, and the economy. For instance, the Health Effects Institute (2024) has determined that air pollution has resulted in the loss of millions of lives and has caused asthma, heart or lung issues, preterm births, stillbirths, and miscarriages. Another study by Fuller et al. (2020) emphasised that pollution contributes to economic losses by increasing health degradation and mortality. Yang (2020) demonstrated that polluted air impairs physical activity. In general, people participated less in outdoor leisure sports programmes to avoid unhealthy air pollution.

Figure 1. Theoretical framework of people's perception of pollution on communities and ecosystems
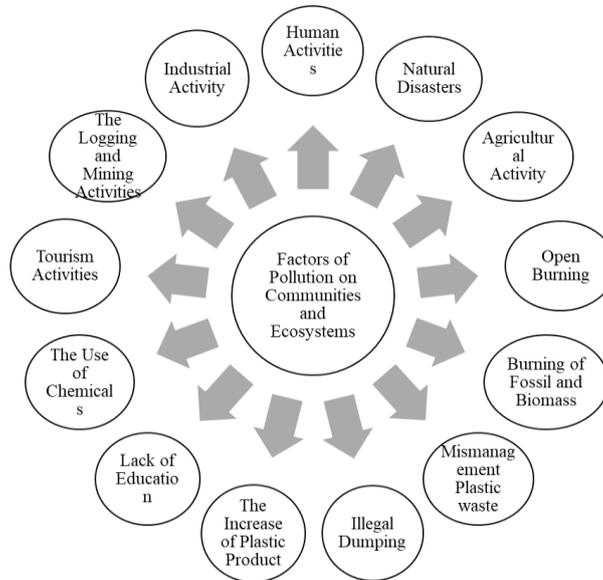
METHODOLOGY

This research employed a qualitative approach, using in-depth interviews and respondent observation for data collection. Purposive sampling was used to identify study respondents. The respondents were selected based on specific characteristics to gather data that would help meet the research objectives. Consequently, the respondents included fishermen, farmers, residents of Kuala Kedah, and local tourists at Leman Beach.

The study was conducted in Kuala Kedah, focusing on the Kuala Kedah Sea and the Kuala Kedah River. These are vital to local fishermen and farmers because water is the community's most critical resource. The Kuala Kedah Sea is essential to fishermen, who rely on fish and other marine resources for their livelihoods. Meanwhile, farmers rely on water from the Kuala Kedah River for their crops, particularly for paddy cultivation to maintain soil fertility.

A set of semi-structured interview questions was developed based on previous research. Before the interview, participants were informed of the research aims to facilitate the process and provided consent. The interviews were conducted in Malay because most of the respondents were not fluent in English. A total of 13 interviews were carried out for this study. Each interview lasted between 30 and 45 minutes per respondent. The Malay interviews were translated into English to simplify analysis. The data were presented as findings derived from the interviewees' statements.

The data were analysed using thematic analysis, the most commonly used and appropriate method in qualitative research. The data were categorised into themes based on codes derived from words, phrases, and sentences identified during data collection. After the thematic process, the themes were reviewed and, when necessary, refined to ensure data validity. The themes were described and given suitable names to facilitate analysis. The table below presents the thematic analysis from the interviews. The sample was selected only when respondents' responses became repetitive, and no new themes emerged, indicating that saturation had been reached.

Table 1: Thematic analysis of the interviews

Raw Data	Initial Codes	Sub-themes	Main Themes
'We can see many plastics are thrown everywhere in these areas. People like to put their rubbish everywhere, which makes the environment look messy and dirty.'	Rubbish was thrown everywhere	Poor waste management	Causes of pollution
'The pollution I noticed the most in Leman Beach is plastic pollution. Every time I visited, the plastic waste increased, making the beach dirty.'	Increase in plastic waste	Plastic pollution	Causes of pollution
'My late brother, who also works as a farmer, has been diagnosed with the 4th stage of cancer because of the effects of pesticides. The effects of pesticides might take time, but once they happen, it is really bad for people's health.'	The negative effect of pesticides on health	Negative effect on health	Impacts of pollution
'For the farmers, we used 'racun siput gondang' (pesticide for golden apple snail), which makes the snails drunk and die, but it also affects other animals that live in the paddy fields, such as freshwater fish, and this pesticide stays for two to three days. I often saw many fish in paddy fields die due to the pesticides used by the farmers.'	Many fish died because of pesticides.	Extinction of animals	Impacts of pollution

RESULTS AND FINDINGS

The study respondents were chosen based on their characteristics, experience, and knowledge about pollution in Kuala Kedah. The respondents included three fishermen familiar with the Kuala Kedah River, four people living near Taman Kota Nelayan River, two local farmers, and four residents at Leman Beach, of different genders and ages. Anonymity was preserved by replacing respondents' real names with pseudonyms to maintain confidentiality throughout the analysis, in line with ethical research standards.

People's Perception of the Causes of Pollution from Communities and Ecosystems

Respondents identified waste and litter as a significant source of pollution in Kuala Kedah. They highlighted the uncontrolled disposal of waste, including plastic, straw, and polystyrene, which pollutes waterways and harms marine life. Mrs Azah, a resident of Kuala Kedah for 30 years, believed that poor rubbish disposal contributed to river pollution.

'*The uncontrolled dumping of waste causes river pollution.*'

Mrs Shida, a housewife who lived in Kuala Kedah for more than 30 years, stated the exact cause of plastic pollution in that area. She stated that:

'*We can see that many plastics are thrown everywhere in these areas. People like to put their rubbish everywhere, which makes the environment look messy and dirty.*'

One respondent noted that the river's condition differed before it was polluted with waste and plastic. Mr Kasim, a Kuala Kedah resident for over 35 years who worked as a taxi driver, said:

'*The environment is littered with rubbish everywhere in the river. People like to throw rubbish around rather than use the bins provided. The rivers are less beautiful than before because they are filled with waste. Historically, the river was covered with grass, but people removed it to improve water quality. Now, waste such as plastic containers and bottles is carelessly thrown into it after use.*

Visitors to Leman Beach were concerned about the plastic pollution in the area. One of the visitors noted that the pile of waste kept increasing every time she visited the beach. Miss Farah, a 26-year-old female, visited Leman Beach once a month and stated:

'*The pollution I noticed the most in Leman Beach is plastic pollution. Every time I visited, the plastic waste increased, making the beach dirty.*'

Based on the interview, some respondents were concerned about the rise in ambient temperature resulting from open burning in paddy fields. Mr Ahmad, a farmer, reported that some farmers burned paddy fields after harvesting in Kuala Kedah. The findings supported the following statement:

'*They (farmers) also burn the paddy field after harvesting, which results in open burning and increases the ambient temperature.*'

Mrs Azah, an eyewear consultant, concurred:

'*Air pollution happens due to open burning, such as burning garbage and straw from paddy fields.*'

In addition, according to the respondents, the causes of pollution in Kuala Kedah were fertilisers, pesticides, oil spills, and toxic waste. One respondent mentioned that farmers use fertiliser, which leads to soil and water pollution. Mr Amin, a 28-year-old farmer with over ten years of experience, stated:

'*Some farmers used fertilisers that are not recognised by the Minister of Agriculture, which caused soil and water pollution.*'

Meanwhile, Mr Badrul, a farmer for more than 30 years, noted that pesticide use during windy conditions may have contributed to pollution in Kuala Kedah. He mentioned that:

'*The use of pesticides using drones during windy conditions caused pollution because people usually use them when there is no wind. The use of drones is intended to reduce the impacts of pesticides on farmers, but it has now become a new problem. Using*

drones is not wrong, but the way we use them causes pollution, which may affect many plants near the house, damaging and killing them.'

A fisherman was concerned about toxic waste from the industrial areas. Mr Ali, a 60-year-old male, believed that waste was reducing fish production in the river.

'Toxic waste disposal into the river. Upstream of the river, there is an industrial area. Previously, there used to be all kinds of fish, but since the industrial area was created, the number of fish has reduced; it might be due to toxic waste disposal from the factories.'

In addition, a 23-year-old local tourist who visited Leman Beach twice a month stated that toxic waste from oil spills had contaminated the beach.

'The sea has also been polluted with plastic waste and toxic waste from the oil spills from the boats.'

People's Perception of the Impacts of Pollution on the Communities and Ecosystems

The present study demonstrated that residents of Kuala Kedah are aware of the impact of pollution on their community and environment. For example, many respondents highlighted the negative effects of pollution on public health. They mentioned that, due to pollution, their family members, friends, and residents of Kuala Kedah are experiencing health problems. Mr Hamid, a 55-year-old fisherman with over 20 years of experience, observed the effects of water pollution on the fishing industry.

'There are health effects for fishermen when the sea and river are polluted, which cause illness, such as itching and skin diseases.'

Local tourists at Leman Beach concurred that pollution harms public health.

'Pollution is harmful to people's health. Many people easily catch illnesses such as the flu, coughs, and asthma.' (Miss Farah)

'This pollution impacts people's health. For example, the sea was contaminated with toxic waste, and children who bathe and accidentally swallow the seawater develop diarrhoea because it was polluted. My family members have experienced health issues due to pollution. For instance, my niece, who was swimming at Leman Beach, fell ill and had diarrhoea, probably because she swallowed the seawater.' (Miss Alia)

Mr Badrul shared his brother's health condition, which was attributed to exposure to pesticides while he was a farmer.

"My late brother, who also works as a farmer, has been diagnosed with the 4th stage of cancer because of the effects of pesticides. The effects of pesticides might take time, but once they happen, it is awful for people's health.'

Some respondents mentioned that air pollution, including smoke from open burning and factory emissions, affects people's health, causing shortness of breath and asthma. Mrs Jamilah, a 31-year-old female and resident of Kuala Kedah who visited Leman Beach four times every week, mentioned:

'Pollution causes various diseases, for example, skin conditions, because of the increase in ambient temperature, and shortness of breath due to smoke from open burning. Based on my experience, I easily get sick, such as fever, cough, and difficulty breathing, when exposed to hot weather for a long time.'

Meanwhile, Mr Kasim, 68, stated that many of his friends had become ill due to air pollution. Mr Kasim shared that:

'There are many of my friends who have become unwell, such as cough and shortness of breath, because of the unclean air from the smoke from the open burning and the smoke from boats.'

Mr Ali, a fisherman with over 17 years of experience after retiring from the military, stated that the cause of asthma and shortness of breath in Kuala Kedah is the smoke from the fertiliser factory. He mentioned that:

'Back then, when the fertiliser factory was built, many people faced shortness of breath and asthma because of the smoke from the factory.'

In addition, some respondents highlighted that pollution in Kuala Kedah disrupted natural habitats. Muhammad, a 17-year-old high school student and a regular visitor to Leman Beach, emphasised that the road construction in the beach area disrupted the habitats of local animals.

'Due to road construction, many animals have lost their habitats, such as numerous monkeys that roam in Leman Beach. I often observed the monkeys from the small jungle near the beach areas start roaming into the beach and nearby villages after the road construction began, which disturbed the locals because the monkeys were quite wild.'

Mrs Zaitun, a 63-year-old housewife who resided in Kuala Kedah for more than 30 years, mentions that:

'Plastic waste has adverse effects, particularly on fish in rivers and the sea. This pollution has disrupted the ecosystem. Moreover, many trees near my house have died because of the effects of pesticides used in paddy fields, since my house is near paddy fields.'

Additionally, residents of Kuala Kedah reported that pollution harmed aquatic life. Pollution caused animal extinctions and reduced fish and seafood production. Mr Amin, a young farmer, explained the effects of pesticides used by farmers on animals in paddy fields. He claimed that:

'For the farmers, we used 'racun siput gondang' (pesticide for golden apple snail), which makes the snails drunk and die, but it also affects other animals that live in the paddy fields, such as freshwater fish, and this pesticide stays for two to three days. I often saw many fish in paddy fields die due to the pesticides used by the farmers.'

Mr Hamid highlighted the problem faced by fishermen due to pollution. He stated that fish and clams were affected by pollution. This led to a decline in fish and clam production. He said that:

'Pollution causes some of the fish to die, which they shouldn't. The fish that aren't

mature yet are dead, and the clams in the ground are contaminated by long-term pollution. We observe this frequently: young fish are targeted, they need time to grow, and it takes a long time for fishermen to catch them. When this happens, the catch for fishermen decreases.'

In contrast, Mr Iman, a fisherman with over 20 years of experience, assumed that the pollution did not affect the fish. He claimed that:

'I think the fish is not really contaminated because the plastic waste accumulates near the 'bakat air' (between the surface and deeper water layers). So I think the fish are safe to eat because they are not contaminated with plastics or toxic waste.'

Additionally, the respondents highlighted the impact of pollution on the incomes of fishermen who rely on the sea for their livelihoods. One of the respondents, a fisherman (Mr Hamid), stated that fishermen had to take on other part-time jobs because they could not rely solely on fishing to cover their daily expenses.

'When we go fishing, the sources of the sea decrease, and our daily expenses are limited. We need to have other initiatives, such as finding part-time jobs to cover our daily expenses at home; we cannot just hope for a catch because the fish in the sea keep decreasing.'

Another fisherman respondent supported him. Mr Ali mentioned that:

'For fishermen, pollution has led many to shift to land-based work. Some fishermen have not gone to the sea for a long time, and some have retired, jobless, and changed professions. It is because when they go to the sea, they cannot catch any fish, they face less income, and expenses exceed income, so the fishermen change to other jobs.'

Additionally, another respondent indicated that pollution limited outdoor activities and disrupted work hours. Mr Badrul, a 55-year-old farmer, explained that, because of the hot weather and the use of pesticides by the drone, his working time was shortened, and as a result, he could finish his work on time. Mr Badrul clarified that:

'Because of pollution, the environmental temperature increases. For example, we go to the paddy field at 7 a.m. and need to return home before 10 a.m., as we cannot work for long in the hot weather. However, it was different before this; we could be in the paddy field until 1 p.m. It has shortened our working time in the paddy field, and we cannot finish our job on time. Moreover, nowadays, people use drones to spray pesticides, so we need to go home because it interferes with our work in the paddy field.'

DISCUSSION

Various human activities contribute to pollution in Malaysia's lower estuary region, including tourism, commercial fishing, seafood processing, recreational activities, sand mining, boat manufacturing, construction, and coastal businesses such as restaurants (Taha et al., 2021, p. 7). Furthermore, poor plastic waste management leads to one to two million tonnes of plastic waste entering the oceans each year, worsening environmental impacts (Ritchie et al., 2023). A study of river pollution in Terengganu found that local residents' negative attitudes and behaviours toward rivers, such as waste dumping, contribute to pollution (Ismail et al., 2023). Consequently, the present study was conducted to explore residents' perceptions in

Kuala Kedah, Malaysia, regarding the causes and effects of pollution on the community and ecosystem.

Overall, the study found that most residents of Kuala Kedah identified poor waste management as the primary cause of pollution. This was preceded by other sources of pollution in the area, including open burning, pesticide use, oil spills, and improper disposal of toxic waste by residents. The study also observed plastic and solid waste on the ground near the beach and along the coastline. Its findings on farmers' traditional practice of burning harvest residue to prepare land for new planting align with Puteh et al. (2024), who identified open burning from agricultural activities as the primary source of air pollution in Malaysia. Consequently, the study recognised that open burning from farming practices poses a significant problem in rural areas, contributing to air pollution and climate change.

Additionally, the research found that pesticide and fertiliser use, as well as toxic waste disposal, contribute to pollution in rural regions such as Kuala Kedah. Human activities related to agriculture, particularly the use of chemicals such as pesticides and biosolids, have been identified as causes of water pollution (Zahoor & Mushtaq, 2023). Qu (2020) also reported that sewage discharges from chemical companies, a common issue in coastal cities, frequently cause water pollution.

Furthermore, pollution causes severe impacts on the environment, human well-being, and the economy. This study explored public perceptions of pollution's effects, focusing on health, income, tourism, ecosystems, jobs and employment, and recreation. Most respondents agreed that pollution negatively affects human health. This aligns with the Health Effects Institute's (2024) findings that air pollution harms human health, leading to conditions such as asthma, cardiovascular disease, and respiratory diseases. Respondents consistently associated pollution with an increase in various diseases, including skin conditions, cancer, asthma, influenza, and fever. This indicates that public awareness of pollution as a health risk is relatively high.

The study respondents recognised the environmental impacts of pollution, such as ecosystem disruption and biodiversity loss. They also expressed concern about how pollution affects aquatic ecosystems, natural habitats, and the climate. For example, Taha et al. (2021) highlighted the effects of microplastic pollution on marine and terrestrial ecosystems. Poor management of plastic waste contributes to environmental pollution, with between 1 and 2 million tonnes of plastic entering the oceans, threatening wildlife and ecosystems (Ritchie et al., 2023).

Furthermore, the findings highlighted the impacts of pollution on respondents' economic and employment outcomes. They recognised pollution as a factor affecting tourism and job opportunities. The findings indicated that those dependent on the natural environment, such as fishermen and farmers, were most affected by pollution, resulting in reduced employment and lower incomes. Water pollution also caused ecological imbalance and threatened fishermen's socioeconomic status. Fishermen relying on the Saraswati River faced financial difficulties due to pollution, which decreased fish productivity and hindered their ability to meet daily food needs (Panigrahi & Pattnaik, 2020).

Additionally, pollution restricted outdoor activities. Climate change further limited outdoor work and recreation to avoid exposure to hot weather, disrupting daily routines. Yang (2020) demonstrated that polluted air affects physical activity and outdoor leisure sports by encouraging avoidance of contaminated areas. Villagers faced challenges in livelihoods,

including fishing and seaweed farming, due to ocean plastic pollution (Phelan et al., 2020).

This study examined perceptions of pollution and explored individual experiences of its causes and impacts among Kuala Kedah residents. The study translated perceptions by contextualising them through sociological and anthropological theories, namely Julian Steward's theory of cultural ecology and Ulrich Beck's risk society theory. It is determined that human activities were the principal cause of environmental pollution, affecting human health and socio-economic conditions.

From the perspective of cultural ecology theory, Julian Steward emphasised that the environment plays a crucial role in shaping society and behavioural patterns, thereby adapting to resources, technology, and social organisation. The findings revealed that people were aware that human activities and lifestyles significantly contributed to environmental degradation. The widespread use of plastic and toxic waste was regarded as a factor that could influence human behaviour and culture, necessitating societal adjustment. For example, the respondents had adapted to pollution, and the development of technology and social organisation demonstrated that the environment had influenced societal cultural practices.

Conversely, Ulrich Beck's risk society theory highlights that modernisation has introduced new forms of global risks, resulting in societal adjustments. Beck (1992) asserts that the environment is endangered by contemporary risks associated with human activities, including pollution, climate change, and nuclear and radioactive hazards. In this study, respondents expressed concerns about pollution from human activities, which disrupt ecosystems, pose health hazards, drive economic decline, and cause other adverse effects. This demonstrates that pollution harms the environment and natural ecosystems, which, in turn, affects people's health and social life.

CONCLUSION

The research aimed to examine residents' perceptions of pollution and its effects on communities and ecosystems in Kuala Kedah. Analysing people's experiences with pollution, their awareness levels, contributing factors, and impacts provided a thorough understanding of how environmental issues are perceived. The study revealed significant gaps in awareness and differences in perceptions of pollution across occupations and characteristics. It also found that the adverse effects of pollution on ecosystems and communities were more readily recognised among individuals with exposure to environmental education. Additionally, the area of study was important for understanding how rural residents approach ecological preservation.

The findings of this study emphasise the significance of the environment to society. This could eventually inform the development of educational campaigns and government policies. Moreover, this research will contribute to future studies exploring how public behaviour and activities influence environmental pollution. There are some limitations to this study. It focused exclusively on a rural area and involved a small group of respondents. As a result, it may not have captured all aspects of pollution factors and effects in urban areas, or the perceptions of different occupations or professions. Therefore, further research is necessary to gain a more comprehensive understanding of pollution in other regions.

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The Evaluation of 'Starting University Workbook' as an Intervention Module at Improving the Adaptability Skills, Psychological Well-Being, and Stress Among First-Year Students in Universiti Teknologi PETRONAS (UTP)

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ABSTRACT

The Starting University Workbook was developed to address the need for psychological support for first-year students at Universiti Teknologi PETRONAS. An evaluation of its effectiveness in improving adaptability skills, psychological well-being, and reducing stress was conducted, as these are considered essential during the transition year for students. The workbook consists of four modules, a web-based assisted intervention. This study aims to evaluate the effectiveness of the Starting University Workbook in enhancing adaptability and psychological well-being and reducing stress among first-year students at UTP. It employed an evaluation which included setting goals, conducting a needs analysis, and assessing the module's effectiveness. All 189 first-year students, aged 16-24, were recruited and given access to complete the four modules integrated into the Ulearn system. Study outcomes were measured using self-reported questionnaires, including the Student Adaptability College Questionnaire, Psychological Wellbeing Scale, and Perceived Stress Scale, administered before and after the intervention to both completers and non-completers. Results indicated that those who completed the Starting University Module showed improvements in adaptability skills and psychological well-being compared to non-completers. However, no significant impact on perceived stress was observed. This study explicitly highlights potential pathways to incorporate the Starting University Workbook as a psychological support programme for first-year students, with suggestions for enhancements, such as the inclusion of mindfulness practices and gamification, to create a more versatile interface.

Keywords: *adaptability, effectiveness, first year students, perceived stress, psychological wellbeing,*

INTRODUCTION

The transition to university among first-year students is considered challenging and can affect their academic, social, and emotional well-being. In Malaysia, stress affects 1 in 10 adolescents, according to the 2017 National Health and Morbidity Survey. This indicates that first-year students are already vulnerable or at risk before beginning their journey in higher education, which may influence their transition to university, a process known to be challenging. The Bridges Transition Model identifies three stages related to transitional issues.

When addressing the difficulties faced by first-year students, it has been observed that the first stage typically occurs in the first week of enrolment and involves adjusting to a new academic environment, location, or culture. Students often exhibit psychological distress during this stage, which includes annoyance, doubt, sadness, anger, denial, confusion, feelings

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of loss, and fear (Cheng et al. 2015). Transition may lead students into isolation, anxiety, unhappiness, confusion, depression, and homesickness. These findings align with other studies.

A study of first-year students at UiTM investigating the relationship between stress and psychological well-being found that perceived stress negatively affected psychological well-being (Malik et al., 2020). Similarly, Joo et al. (2021) examined first-year students' adaptation to college life in Korea and found a negative correlation between perceived stress and adaptation ($r = -0.696$, $p < .001$). The effects of elevated perceived stress are consistently found to negatively impact students, causing low sleep quality, class skipping, headaches, anxiety, substance use, rumination, and poor self-concept clarity (Alias et al., 2019; Willis & Brunett, 2016).

However, help-seeking behaviour has been identified as low among first-year students (St Stunden et al., 2020). This is also consistent with Orlov et al. (2018), who identified factors for first-year students not seeking help during challenging times as stemming from personal motivation, communication, cognition, and regulation. David and Nita (2014) further emphasised that guided assistance for first-year students is necessary to help them adapt to new challenges, new friends and peers, a new system, and new learning methods. Therefore, psychosocial interventions provided by the university during this period, as a form of support, are genuinely meaningful and could serve as protective factors for first-year students.

Furthermore, changes are inevitable and will occur both internally and externally, such as neurobiological development, puberty, psychosocial changes, and a sense of self-direction (Magnuson and Redekopp, 1992; National Academies of Sciences, Engineering, and Medicine, 2019). This emphasises the importance of adaptability in individuals, despite the challenges they face during transitions. Adaptability is similar to the concepts of coping and resilience, which explain an individual's ability to confront issues that require attention (Zorzie, 2012). Badelina (2020) further expanded the concept of adaptability, specifically for first-year students, to include qualities such as motivation, psychological comfort, and self-moral satisfaction.

Additionally, a systematic literature review by Zanden et al. (2018) on domains and predictors of first-year student success found that social support from friends and parents is a significant factor with small effect sizes. Consistent with these findings, another contributor to well-being is a sense of belonging to the institution (Sax & Weintraub, 2014), with reported small to medium effect sizes. Few universities have reported on efforts to promote student engagement and foster a sense of belonging (Boulton et al., 2019; Martin & Bolliger, 2018). Institutional efforts to provide social, emotional, and practical support for new students have positively contributed to first-year students' adjustment to university (Ramsay et al., 2007).

LITERATURE REVIEW

Transition is an emerging issue among first-year university students. This is due to changes that have happened concurrently in psychological, biological, and social aspects, which justifies the need for them to develop adaptability skills. An individual perceives a situation as stressful at different levels, and various coping strategies accompany this perception. At low stress levels, problem-focused and emotion-focused coping occur equally, while at high stress levels, individuals tend to display increased emotional and defensive behaviours (Lazarus and Folkman, 1984). Consequently, some individuals experience stress in each situation, whereas others do not because they perceive and interpret the same scenario

differently.

First-year students in transition undergo various changes, both internal (e.g., neurobiological development, puberty, psychosocial adjustments, and a sense of self-direction; National Academies of Sciences, Engineering, and Medicine, 2019) and external (Magnuson and Redekopp, 1992). Additionally, other changes, such as the learning environment, might also contribute to increased stress levels (Clinciu, 2013). For example, workload and feelings of being overwhelmed often lead to stress (Giangrade, 2019). Untreated prolonged unhealthy stress may develop into symptoms of depression or other emotional issues (Mheidly et al, 2020). Therefore, appropriate interventions to support first-year students are crucial for their successful adjustment (De Clercq et al., 2019).

Adaptability is like the concepts of coping and resilience, in which an individual's capacity to manage uncertainty encompasses cognitive, behavioural, and affective adjustments (Zorzie, 2011). Adaptability is moderated by social support, primarily external support from friends and peers at the same university. The study concludes that higher social support is associated with greater adaptability and life satisfaction (Zhou & Lin, 2016). A qualitative study was conducted at several higher education institutions in Northwest England to identify aspects of university experience support for new students during the transition phase. The emerging themes include tackling multiple challenges, the role of university staff, and friendship. (Worsley et al, 2021).

Adaptability was conceptualised with four domains, including academic adjustment, social adjustment, personal-emotional adjustment, and institution attachment by Baker and Siryk (1986) to measure student adaptability through the Student Adaptability College Questionnaire. A holistic approach to measuring adaptability is vital, as adaptation is not determined by the individual but by the ecosystem in which they live. A study found that adaptability correlates with motivational, communicative, cognitive, and regulatory difficulties among first-year students (Orlov et al., 2018). This study suggested that the university provide psychological and educational strategies to enhance personal skills, thereby enabling successful adaptation.

A systematic literature review by van der Zanden et al. (2018) on three domains and predictors of first-year student success, including academic critical thinking and social-emotional well-being, found that students who recognised and managed their emotions were better able to adjust. Additionally, social, emotional, and practical support positively contributed to students' adjustment. At the institutional level, the study revealed that first-year programmes that offered students opportunities to strengthen networks and receive support had a moderate-to-large effect size on their social-emotional well-being. Moreover, the types of support students received, such as social, emotional, and practical, favourably influenced the transition of first-year college students (Ramsay et al., 2007). University involvement in facilitating the transition of first-year students, particularly in psychological well-being and coping skills, resulted in improved academic adjustment, which in turn enhanced academic performance (Morales-Rodriguez et al., 2020). Therefore, new students need specific guidance in their first year, as adaptability involves coping and resilience, which together explain an individual's capacity to confront situations requiring resolution (Zorzie, 2012).

Scrutinising intervention effectiveness among first-year students has found some inconsistent findings. They conducted a 2-hour experimental intervention that did not affect well-being. They proposed that the effect on well-being is distal rather than immediate. In addition, a systematic literature review of quasi-experimental designs for first-year

programmes across the United States, with a total sample size of n=1,225 in the experimental and control groups, found no significant difference immediately after the programme. Still, over time, the data showed significance at three semesters when measuring GPA (Culver and Bowman, 2018). They suggested that the first-year programme should be situated within the broader student success framework. They argued that a stand-alone first-year programme would not directly affect college satisfaction, college grades, or college retention. Another meta-analysis of digital interventions for university students' psychological well-being, conducted over 6-8 weeks, found only a slight improvement in well-being. However, 30 % of the studied population was diagnosed with a mental disorder. This aligns with the well-being terminology described by Cohen et al. (2013), which refers to the presence of positive emotions and moods and the absence of negative emotions, leading to life satisfaction, fulfilment, and positive functioning.

On the other hand, psychological well-being significantly affected students' academic performance, particularly in the domains of personal growth, self-acceptance, and purpose in life, according to Ryff's psychological well-being model (Lo & Ip, 2021). This has been supported by another study, which found that high perceived stress may lead to low levels of psychological well-being (Harding et al., 2019). In addition, a study suggested that fostering first-year students' awareness of their emotional and mental well-being is likely to improve their well-being and adaptability (Colizzi et al., 2020).

Concerning student well-being, intervention-related research ranks fourth among the most notable studies worldwide on mental health and well-being among university students, based on 45 years of mapping (Hernández-Torrano et al., 2020). However, the intervention programmes were typically designed to target their students and to use university-specific information, which reduces generalizability and may prevent other schools with a comparable target demographic from replicating them (Shin, 2013; Stebleton et al., 2012). Based on a meta-analysis, interventions that may be replicated among them include Acceptance and Commitment Therapy, Cognitive Behavioural Therapy, and Mindfulness, each with its own specific guidelines and trained professionals to conduct the programme (Ferrari et al., 2022). Additionally, any changes to the intervention procedures should be thoroughly discussed, as should the feasibility of implementation.

Narrowing the focus to intervention approaches, Franzoi et al. (2022) conducted a systematic literature review on psychological interventions for higher education students in Europe to examine the types of interventions employed and the issues they addressed. They included 83 studies based on their eligibility criteria. They identified eight studies on counselling and group counselling, six on psychodynamic, 15 on Cognitive-Behavioural, 18 on other psychological interventions, nine on mindfulness, 17 on Online, and 10 on App and Mobile. The online intervention programmes were reported to reduce behaviours such as smoking and alcohol use and to improve memory, indicating their overall effectiveness. Moreover, the app and mobile intervention aided in improving participants' well-being, including reduced depression levels, greater time efficiency, active learning, and increased motivation.

Hence, this study aims to assess the effectiveness of Starting University, an intervention designed to support first-year students in improving adaptability and psychological well-being and reducing perceived stress.

The conceptual framework of the present study evaluates the effectiveness of the psychosocial intervention: Starting University Workbook, which was conducted among first-

year students, which may affect the change in psychological well-being, perceived stress and adaptability, as shown in Figure 1 below.

Figure 1: Conceptual framework
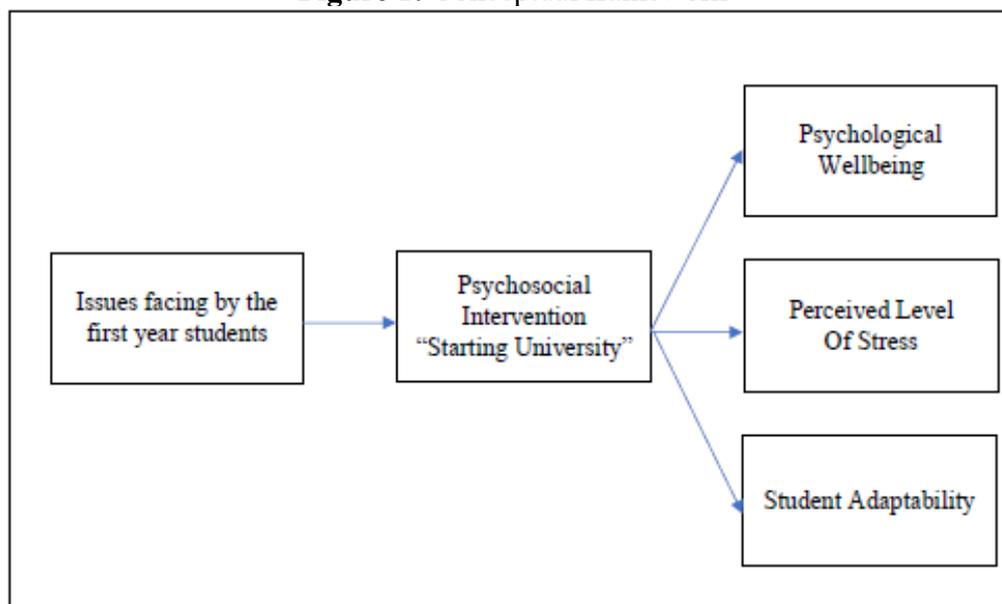
HYPOTHESES

The hypotheses of this study are as follows:

H1: There will be a significant increase in the score in students' adaptability after completing the 'Starting University Workbook'

H2: There will be a significant increase in the score in students' psychological well-being after completing the 'Starting University Workbook'

H3: There will be a significant decrease in the score of students who perceive stress after completing the 'Starting University Workbook'

METHOD

The study employed a quasi-experimental pretest-post-test design. A web-based Starting University Workbook module was developed to be incorporated into the formal orientation week and then used during the first 12 weeks of the active semester. Participants in the intervention group were enrolled in the student dashboard known as the Ulearn system and granted access to the Starting University Module, which is adapted from a published resource, Starting University Workbook (e-ISBN: 978-967-2880-13-4). Conversely, the control group consisted of participants who did not have access to the module available in the system but participated in other first-year activities, such as orientation week and engagement with the UTP First Year Experience Unit.

The target population for current study was decided as following inclusion criteria: 1) first-year students enrolled in UTP for foundation or undergraduate study in January semester 2023, 2) age range 16 – 24 years old, that is the age range for first-year students in Malaysia universities and 3) that have met the minimum requirement to continue in university such as able to read and comprehend information. On the other hand, the participants would be excluded if they have any of these exclusion criteria: 1) have psychiatric conditions and are actively involved in treatment or medication, or 2) are married. Purposive sampling was employed to achieve the desired objective and sample size within a relatively short timeframe

(Kendall, 2003).

Student Adaptation to College Questionnaire (SACQ). SACQ comprises 67 items and is a self-rated measure that assesses students' adaptation to university. The scale was developed in 1989 by Baker and *Syirk* and includes four subscales: academic adjustment, personal-emotional adjustment, social adjustment, and institutional commitment. A higher score in a particular domain may indicate better adjustment to university. Adams (2017) cites Baker and *Syirk* (1989), who reported well-established reliability scores for the subscales: the Academic Adjustment scale consists of 23 items with Cronbach's α = .84; the Social Adjustment scale includes 18 items with Cronbach's α = .84; the Personal-Emotional Adjustment scale comprises 15 items with Cronbach's α = .81; and the Institutional Commitment scale contains 14 items with Cronbach's α = .80. SACQ scores are based on a 9-point Likert scale (1 = applies very closely to me; 9 = does not apply to me at all). In the current study, the Cronbach's alpha is α = 0.88.

Psychological Wellbeing (PWB) Scale. The PWB scale was developed by Ryff and Keyes (1995). All 18 items are divided into six subscales: Autonomy, Cronbach's α =.60; Environmental Mastery, Cronbach's α =.70; Personal Growth, Cronbach's α =.71; Positive Relations with Others, Cronbach's α =.78; Purpose in Life, Cronbach's α =.78; and Self-acceptance, Cronbach's α =.75. All Cronbach's alpha values are reported from a study on Psychological Wellbeing by Gao and Mclellan (2018) in Chinese adolescents. In the current study, the Cronbach's alpha is α = 0.71. The PWB Scale uses a 7-point Likert scale (1 = strongly agree; 2 = somewhat agree; 3 = a little agree; 4 = neither agree nor disagree; 5 = a little disagree; 6 = somewhat disagree; 7 = strongly disagree), though it should be noted that some items are reversed, specifically items numbered 1, 2, 3, 8, 9, 11, 12, 13, 17, and 18. The total score indicates levels of psychological well-being; the higher the score, the higher the level of well-being.

Perceived Stress Scale-10 item (PSS-10). PSS-10 is used to measure the extent to which an individual perceives their life as stressful. There are three versions of the PSS with 14, 10, and 4 items, developed by Cohen and colleagues in 1983 and 1988, respectively. In this study, the PSS-10 was utilised, as recommended by Lee (2012), due to its better psychometric properties. The current study reports a Cronbach's alpha of α = 0.61. The PSS score is based on a 5-point Likert scale ranging from (0= never, 1= almost never, 2= sometimes, 3= fairly often, 4= very often); however, it should be noted that items 4, 5, 4,5,7, and 8 are reverse scored. The highest possible score is 40 (Al-Dubai et al., 2014). A higher score indicates greater perceived stress.

Ethical approval for this study has been granted by the IIUM Research Ethics Committee (IREC) with the ID number: IREC 2022-135.

FINDINGS

The total number of targeted participants was 189 first-year students in the January 2023 semester intake. A total of 112 voluntarily consented to participate in the study; however, upon screening, two of them self-reported having a psychiatric condition, which met the exclusion criteria. Students were then randomly assigned to either an intervention or a waitlist group. Subsequently, 110 first-year students were followed with baseline measures including the SACQ, PWB scale, and PSS; n=51 were in the intervention group, and n=59 were in the waitlist group. This number was sufficient to meet the GPower requirements based on the sample size estimator (Faul et al., 2007), assuming an effect size of 0.25 and a 0.05 significance

level, yielding 78% power for a minimum sample of 26 students.

During the intervention, there were 42 participants: 18 males (42.8%), comprising 11 from the intervention and seven from the control group, and 24 females (57.14%). In total, 13 participants were in the intervention group and 11 in the control group. For the current enrolled programme, the Technology & Business Management programme had the highest number of participants, n=17 (40.48%). While students in the Engineering & Sciences and Computer Sciences programmes participated equally, the total was n=11 (26.19%). Among races, Malay was the most common, with n=32 (76.19%). Participants also have a variety of entrance examination results, with the majority (n=26, 61.90%) taking the Sijil Pelajaran Malaysia (SPM), followed by an equivalent to SPM, the O-level, taken from the IGCSE programme (n=4, 9.52%). Participants reported a range of family incomes, with 13 reporting household incomes between RM3001 and RM5000 (39.0%). This was followed by household income levels between RM7001 and RM9000, and more than RM9001, which each had a similar total of n=9 (21.43%). The demographic table is shown in Table 1.

Table 1: Demographics of participant at baseline and at post-intervention

	Intervention (n=24)		Control (n=18)		Total (n=42)		Pvalue
	n	%	n	%	n	%	
Gender							
Male	11	45.80	7	38.90	18	42.86	
Female	13	54.20	11	61.10	24	57.14	
Current Enrolled Programmeme							0.27
Engineering & Sciences	9	37.5	5	27.80	11	26.19	
Technology & Business Management	11	45.80	6	33.30	17	40.48	
Computer Sciences	4	16.70	7	38.90	11	26.19	
Ethnicity,							0.17
Malay	17	70.8	15	83.30	32	76.19	
Indian	3	12.5	0		3	7.14	
Chinese	2	8.3	0		1	2.38	
Bumiputera (Sarawak, Sabah, or any related)	1	4.20	3	16.70	4	9.52	
International	1	4.20	0		1	2.38	
Entrance Examination,							0.16
O-Level	3		1	5.6	4	9.52	
SPM	16		10	55.6	26	61.90	
A-Level			3	16.7	3	7.14	
STPM			2	11.1	2	4.76	
Matriculation	2				2	4.76	
Diploma	4		2	11.1	2	4.76	
Family Income							0.41
Less than RM1000	1	4.2			1	2.38	
Between RM1001 – RM 3000	6	25.0	1	5.6	7	16.67	
Between RM 3001 – RM 5000	5	20.8	7	38.9	13	30.92	
Between RM5001 – RM 7000	2	8.3	1	5.6	3	7.14	
Between RM7001 - RM9000	5	20.8	3	16.7	9	21.43	
More than RM9001	5	20.8	6	33.3	9	21.43	

Note: SPM (Sijil Pelajaran Malaysia) and STPM (Sijil Tinggi Pelajaran Malaysia) P-values are based on the difference between the intervention and control groups using the Chi-Square test.

Additionally, the demographic characteristics of the participants were not significantly different between the intervention and control groups, as all p-values were > .05 when assessed using the Chi-Square test, which was significant at the 0.001 level (2-tailed p<0.0005). This indicates there are no differences between the two groups at baseline. Accordingly, regarding adaptability, psychological well-being, and perceived stress, there are no significant

differences between the intervention and control groups.

At the post-test, all 42 participants completed the SACQ, PWB, and PSS, including both those who completed and those who did not. Participants reported significant improvements in adaptability (Mean: -52.57, 95% CI: -78.16 to 28.98) and psychological well-being (Mean: 5.14, 95% CI: 0.42 to 9.87), with moderate effect sizes for adaptability and small effect sizes for psychological well-being. For the SACQ subdomains, all showed significant improvements: academic (Mean: -24.38, 95% CI: -34.03 to -14.73), personal-emotional (Mean: -9.61, 95% CI: -17.81 to -1.42), social (Mean: -14.07, 95% CI: -21.31 to -6.83), and institution (Mean: -7.54, 95% CI: -13.08 to -2.02). However, the results did not indicate a significant increase in perceived stress, as shown in Table 2.

Table 2: Average changes reported by 42 participants from baseline to posttest about adaptability, psychological well-being, and perceived stress level.

	Baseline to post-intervention				
	M	SE	(95% CI)	p-value	Cohen d
SACQ score	-52.57	12.67	-78.16 to -28.98	.00	0.64
Academic	-24.38	4.78	-34.03 to -14.73	.00	0.79
Personal-Emotional	-9.61	4.06	-17.81 to -1.42	.02	0.37
Social	-14.07	3.59	-21.31 to -6.83	.00	0.61
Institution	-7.54	2.74	-13.08 to -2.02	.01	0.43
PWB score	5.14	5.14	0.42 to 9.87	.03	0.34
PSS score	0.48	1.22	-1.99 to 2.94	.70	0.06

It is worth noting that the number of completers for each module shows a decreasing trend: module 1, n=17 (18.27%); module 2, n=7 (7.53%); module 3, n=7 (7.53%); and module 4, n=21 (4.30%). Among all modules requiring completion, 20 completers (21.51%) were identified.

Table 3: Starting University Workbook completed by participants at Ulearn

Module	(N=93), n(%)
Logged in	24 (25.81)
Completed Module 1	17 (18.27)
Completed Module 2	7 (7.53)
Completed Module 3	7 (7.53)
Completed Module 4	4 (4.30)
Completed all Module	20 (21.51)

Note: Completers considered are based on fulfilling one of the sub-activities in each module

DISCUSSION

The current study aimed to assess the effectiveness of implementing a university workbook as an intervention to enhance adaptability, psychological well-being, and reduce perceived stress among UTP first-year students. To our knowledge, this is the first evaluation study of the Starting University Workbook, published in 2022, for UTP first-year students. This aligns with one of the empowerment evaluation principles proposed by Kloos et al. (2012), and the intervention is evaluated as an evidence-based strategy for assisting first-year students, specifically at UTP, during the transition phase.

The results of this evaluation study indicate that the initial university workbook, comprising four submodules, had a positive impact on first-year students at UTP. Notably, participants demonstrated improvements in adaptability and psychological well-being. This is significant, as the study showed that adaptability and psychological well-being among first-

year students can be enhanced through an internally developed psychosocial module. This aligns with Nadiah (2013), who suggested that higher education institutions should implement effective interventions for first-year students to foster adaptability. However, the effect sizes were small, and their practical utility therefore might be limited.

Nonetheless, perceived stress levels among first-year students at UTP did not decline with the introduction of the Starting University Workbook as an intervention. Exploration revealed moderate effect sizes for stress reduction, as reported by Juniar et al. (2022) and Keng et al. (2022), through a standard module of mindfulness practices that has demonstrated effectiveness in lowering stress levels. Therefore, incorporating mindfulness practices may be vital and relevant for first-year students, who reportedly experience higher perceived stress than students at other stages of their studies.

Regarding student compliance with completing the modules, although the modules have been integrated into student dashboards, the results indicate a decline in the number of completers from one module to the next. The reasons for this decline remain unexplored. However, the shift to web-based delivery responds to the current mental health landscape, which has shifted primarily to electronic communication (Sheperis & Smith, 2021). Similarly, the dropout rate was over 50% in other e-psychosocial interventions, such as Rilek (91.7%; Juniar et al., 2022) and Internet-based Cognitive Behavioural Therapy (54.72%; Lu et al., 2021).

Although this study showed some promising results, there are several notable limitations. Firstly, since this is a quasi-experimental design with no interrupted time series, long-term impact cannot be measured; changes at follow-up should be considered. Secondly, the samples are purposive; that is, they lack generalisability to other populations beyond UTP. As such, completing the introductory university workbook and then comparing it with first-year students at other universities is highly recommended. Thirdly, the effectiveness of the study was limited based on the psychosocial-related variables, but it did not include other critical areas such as feasibility, usability, and satisfaction from the user's point of view; thus, future research is recommended to evaluate the intervention thoroughly.

CONCLUSION

This study aimed to evaluate the effectiveness of a psychosocial intervention, the Starting University Workbook, in improving adaptability and psychological well-being and reducing perceived stress levels. The Starting University Workbook, a web-based assisted intervention for first-year students at UTP, was reported. Findings indicate that using the Starting University Workbook enhances adaptability and psychological well-being among first-year students. However, its impact is limited by a web design that is not versatile or interactive. Despite the potential of web-based assisted interventions to support first-year students during the transition, our study suggests that further development is needed before expanding to other institutions. In summary, the intervention shows promise but requires refinement in its implementation and monitoring system.

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